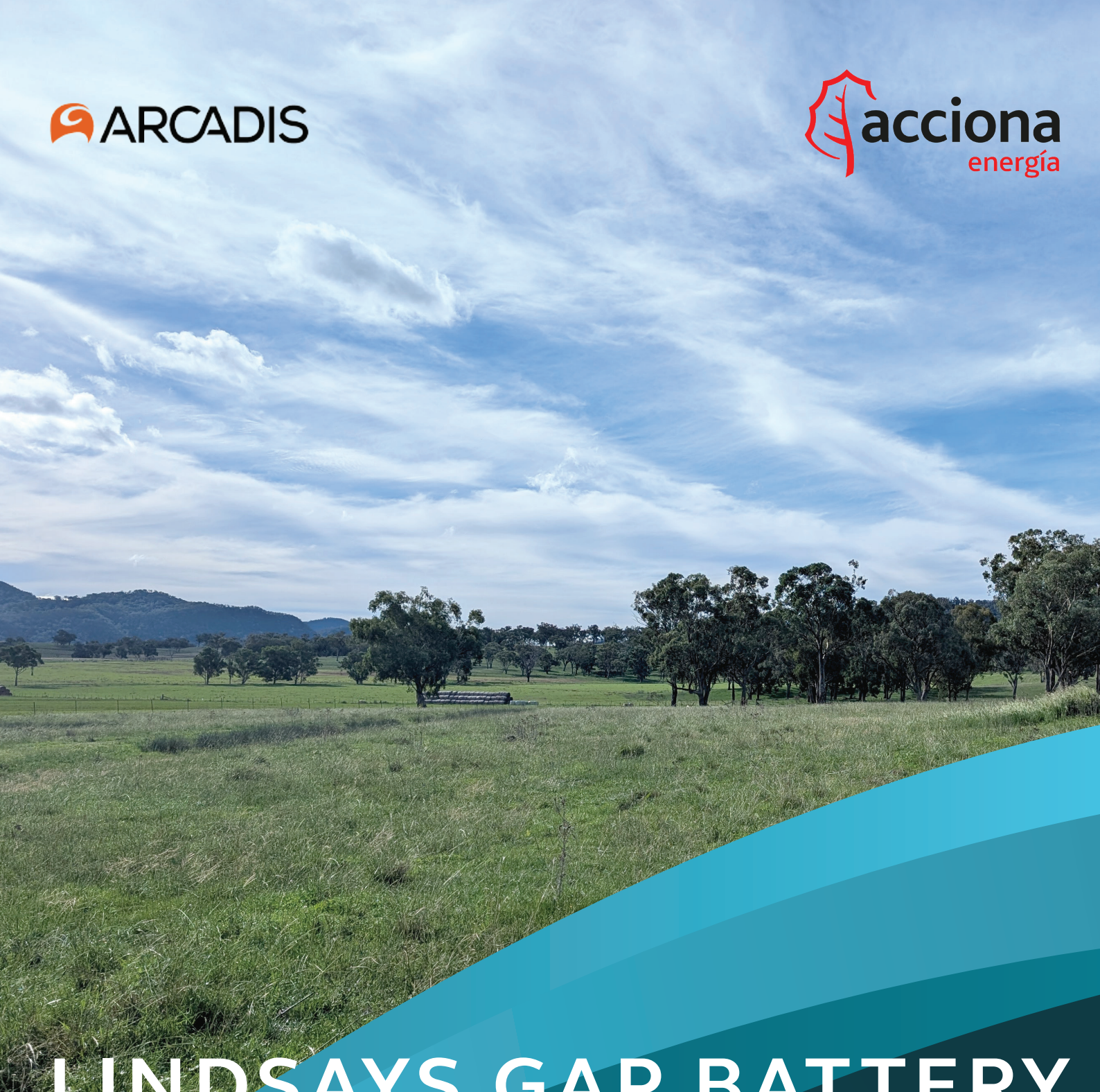

LINDSAYS GAP BATTERY ENERGY STORAGE SYSTEM

Scoping Report

August 2025

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ACRONYMS AND DEFINITIONS

Term	Definition
AC	Alternating Current
ACCIONA Energía	ACCIONA Energy Australia Global Pty Ltd
AEMO	Australian Energy Market Operator
ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
ASS	Acid Sulfate Soils
BC Act	*Biodiversity Conservation Act 2016*
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
DC	Direct Current
DPE	Department of Planning and Environment (now DPHI)
DPHI	Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
EMF	Electric and Magnetic Fields
EP&A Act	*Environmental Planning and Assessment* Act 1979
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPBC Act	*Environment Protection and Biodiversity Conservation* Act 1999
FCAS	Frequency Control Ancillary Services
GDEs	Groundwater Dependent Ecosystems
HVAC	Heating Ventilation Air Conditioning
ICNG	Interim Construction Noise Guideline
ISP	Integrated System Plan
LEP	Local Environmental Plan
LETS	Low Emissions Technology Statements
LGA	Local Government Area
LSBS	Large Scale Battery Storage
MNES	Matter of National Environmental Significance
MW	Megawatt
MWh	Megawatt Hours
Neighbours	Refers to dwellings within 1.5 kilometres of the proposal
NEM	National Electricity Market
NPfI	Noise Policy for Industry
OEH	Office of Environment and Heritage
OSOM vehicle	Oversized and / or overmass vehicle

Term	Definition
PCT	Plant Community Type
PHA	Preliminary Hazard Assessment
Planning Systems SEPP	*State Environmental Planning Policy (Planning Systems) 2021*
POEO Act	*Protection of the Environment Operations Act 1997*
Project neighbourhood	Refers to dwellings within 1.5 to 4 kilometres of the proposal
Proposal area	The proposal area located at 11090 New England Highway Wallabadah 2343 comprising an area of approximately 490 hectares (ha) and spanning across four lots (31 DP1003682, 32 DP1003682, 33 DP1003682, 7011 DP1018687).
Proposal site	The subsection of the proposal area that will be utilised by the BESS and associated infrastructure is referred to as the 'proposal site'. The proposal site represents the portion of the proposal area where construction and operation activities will occur (i.e. the disturbance footprint).
R&H SEPP	*State Environmental Planning Policy (Resilience and Hazards) 2021*
SEARs	Secretary's Environmental Assessment Requirement
SSD	State Significant Development
SSD guidelines	*State significant development guidelines – preparing a scoping report* (DPIE, 2022b).
T&I SEPP	*State Environmental Planning Policy (Transport and Infrastructure) 2021*
TEC	Threatened Ecological Community
The Proponent	ACCIONA Energy Australia Global Pty Ltd
The proposal	The project for which approval is being sought, namely the construction, operation and maintenance of a Battery Energy Storage System.

1 INTRODUCTION

This chapter provides an overview of the proposal, including the proposal's location, local context and key features. The purpose and structure of this report is also provided.

1.1 Overview

ACCIONA Energy Australia Global Pty Ltd (ACCIONA Energía) (the Proponent) is committed to driving Australia's transition to a cleaner, more sustainable energy future. As part of this mission, ACCIONA Energía is focused on providing reliable, "firmed" green energy solutions to a diverse range of customers in Australia.

The Proponent is seeking development consent for the construction, operation and maintenance and decommissioning of a large-scale Battery Energy Storage System (BESS) of around 450 megawatts (MW) with a storage duration of approximately four hours (1,800 MWh), and an associated substation and transmission line (the proposal).

The proposal is essential to supporting the New South Wales (NSW) Government's electricity strategy, which aims to deliver a reliable, affordable, and sustainable energy future that drives economic growth. BESS facilities, such as the proposal, play a crucial role in addressing the intermittency challenges associated with renewable energy generation. These facilities are considered a vital component in the transformation of the state's energy sector, ensuring greater stability and efficiency in integrating renewable energy sources.

The Proponent is seeking State Significant Development (SSD) approval for the proposal under Part 4, Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) (refer to Chapter 4 for more information about the statutory context of the proposal).

1.2 The proposal

This proposal would include:

- A BESS including battery enclosures, inverters and auxiliary transformers
- Establishment of an onsite substation with a control building
- A TransGrid switching station with control building
- Temporary laydown area and batch plant (during construction stage only)
- 33 kilovolt (kV) reticulation cable connection (above ground or below ground) between the BESS and the onsite substation.
- 330 kV overhead transmission line connection between the onsite substation and TransGrid switching station
- Connection from the TransGrid switching station to the existing Tamworth-Muswellbrook (Line 88) 330 kV transmission line that transects the proposal area
- Site access and intersection upgrades from the New England Highway
- Internal site access roads and parking
- Establishment of an Operations and Maintenance (O&M) facility, including a permanent office and staff amenities
- Utilities including telecommunications, water and wastewater for amenity buildings
- Stormwater management infrastructure
- Lighting

- Fencing
- Security
- Landscaping and screening vegetation.

1.3 Proposal area and proposal site

The proposal is located more than 40 kilometres south of Tamworth and eight kilometres north of the township of Wallabadah, to the north of the intersection of Lindsays Gap Road and the New England Highway, and north of Wiles Gully. The proposal is located within the Liverpool Plains Shire Council Local Government Area (LGA). The closest town, Wallabadah, has a population of 382 (ABS, 2021) with local infrastructure including a public school, church, hotel and various businesses.

The proposal is located within a single land holding comprising four separate lots, as described in Table 1-1. The boundary of the four lots is here on referred to as the 'proposal area'. Only a portion of the proposal area will be required to develop the proposal. The subsection of the proposal area that will be utilised by the BESS and associated infrastructure is referred to as the 'proposal site'. The proposal site represents the portion of the proposal area where construction and operation activities will occur (i.e. the disturbance footprint) (Figure 3-1).

The location of the proposal area is shown in Figure 1-1. There is an existing access road located at 11090 New England Highway, Wallabadah, that connects from the New England Highway on the north-western side of the proposal area and travels through to the centre of the proposal area. There are 16 sensitive receivers located within four kilometres of the proposal area (Figure 1-2).

Table 1-1 Lots comprising the proposal area

Lot / DP	Address	Proposal component	Landowner
Lot 31 DP1003682	11090 New England Highway Wallabadah 2343	• No proposal components to be located within this Lot	Private Landowner
Lot 32 DP1003682	11090 New England Highway Wallabadah 2343	• Access road • Temporary washdown station • Connection to New England Highway	Private Landowner
Lot 33 DP1003682	463 Lindsays Gap Road Wallabadah 2343	• Connection to the TransGrid Substation • Transmission line • Temporary construction laydown area and batch plant • Switching-station • Operations and maintenance building which will including workstations, meeting rooms and amenities, SCADA terminal, security monitoring systems and storage for BESS and plant components • Parking area • Part of the BESS	Private Landowner
Lot 7011 DP1018687	463 Lindsays Gap Road Wallabadah 2343	• Part of the BESS	Private Landowner Crown land along the southern boundary of the lot

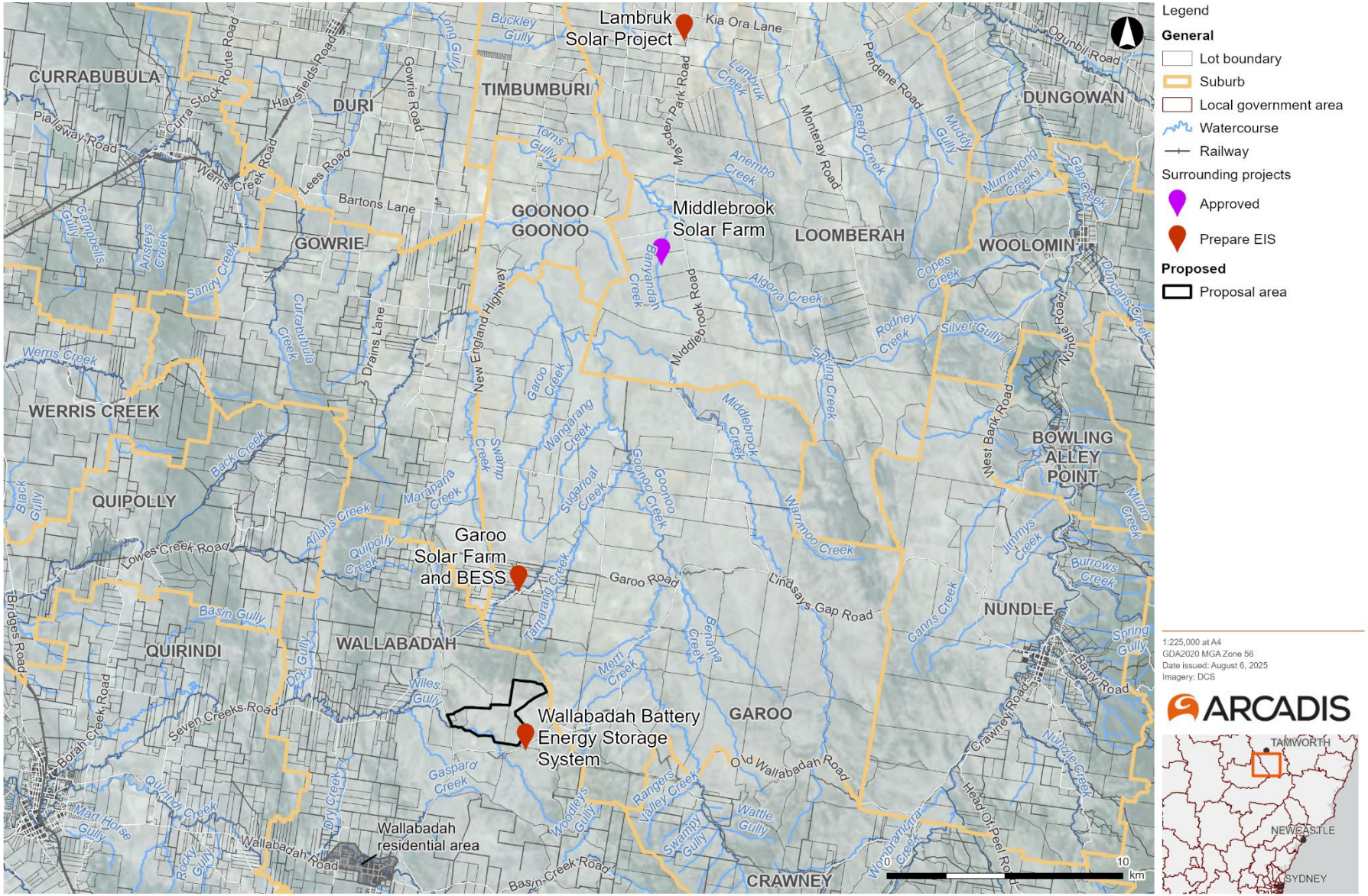


Figure 1-1 Regional context

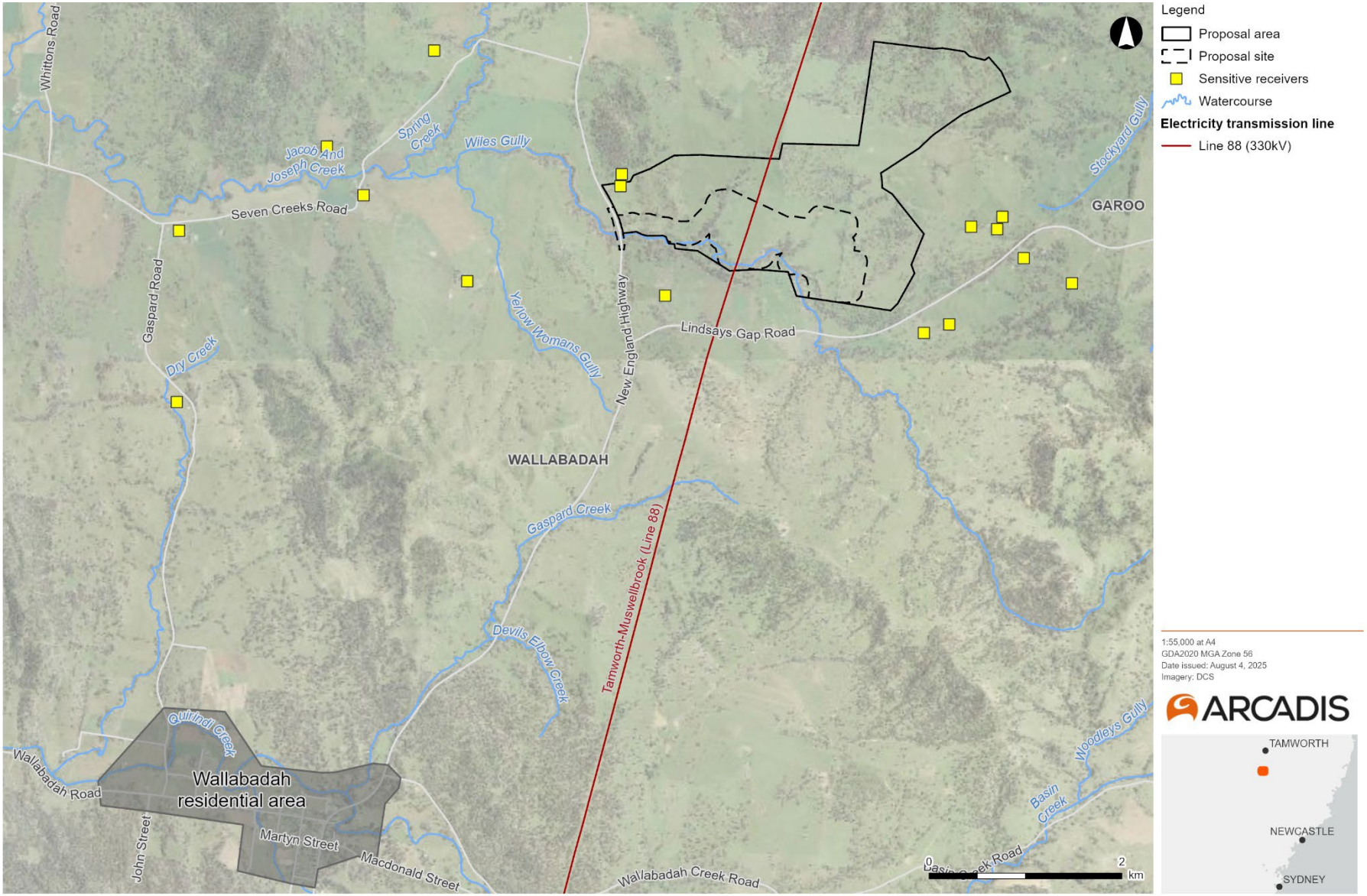


Figure 1-2 Nearby receptors

1.4 Purpose and structure of this Report

The purpose of this report is to support ACCIONA Energía's application to the Minister for Planning for planning approval under Part 4, Division 4.7 of the EP&A Act, with the first step to obtain Secretary's Environmental Assessment Requirements (SEARs) for the Environmental Impact Statement (EIS).

This scoping report has been prepared to:

- Describe the proposal
- Identify feasible alternatives that will be investigated further during the preparation of the EIS with regard to the objective of the development
- Provide an early indication of community views and outline what engagement will be carried out during the preparation of the EIS
- Identify the key environmental matters that require assessment in the EIS and the proposed approach to assessing each of these matters with regard to relevant government legislation, plans, policies and guidelines.

The structure and content of this report is outlined in Table 1-2.

Table 1-2 Structure and content of this report

Chapter		Description
Chapter 1	Introduction	Outlines the key elements of the proposal and the purpose of this report.
Chapter 2	Strategic context	Provides an outline of the need and justification of the proposal, as well as the site context.
Chapter 3	The proposal	Describes the proposal, strategic alternatives and general construction activities.
Chapter 4	Statutory context	Provides an outline of the statutory approvals framework, including applicable legislation and planning policies.
Chapter 5	Engagement	Outlines the stakeholder and community engagement carried out to date.
Chapter 6	Preliminary environmental assessment	Provides a preliminary consideration of the potential direct and indirect impacts associated with construction and operation of the proposal.
Chapter 7	Conclusion	Provides a conclusion to the report and identifies the next steps following the receipt of the SEARs.

1.5 The Proponent

ACCIONA Energy Australia Global Pty Ltd (ACCIONA Energía) (ABN 54 600 910 647) are the largest 100% renewable energy company with no fossil legacy in the world. They have significant activity in wind, solar photovoltaic, solar thermal hydraulic and biomass renewable technologies, and have commercial operations in 20 countries over five continents.

ACCIONA Energía has 13,500 MW of renewable energy in operation globally and is listed on the Madrid Stock Exchange with a market capitalisation of A$11.1 billion (June 2024). ACCIONA Energía has invested A$1.5 billion in Australian renewable projects to date, with this figure anticipated to grow significantly. ACCIONA Energía's 'build, own and operate' model sets them apart from their competitors, as they work closely with landowners, neighbours, and the broader community to deliver integrated solutions.

The details of the Proponent are provided in Table 1-3.

Table 1-3 Proponent details

Proponent details	
Name	ACCIONA Energy Australia Global Pty Ltd (ACCIONA Energía)
Postal address	Level 8, 11 Eastern Road, South Melbourne, 3205
ABN	54 600 910 647
Nominated contact	Lucas Villalba
Contact details	E: luvillalba@acciona.com
Scoping Report	Prepared by Arcadis Australia Pty Ltd

2 STRATEGIC CONTEXT

This chapter provides a description of the site context and outlines the need and justification of the proposal.

2.1 Site context

2.1.1 Regional context

The proposal site is located approximately 40 kilometres south of Tamworth and eight kilometres north of the township of Wallabadah (Figure 1-1).

The proposal is located within the Liverpool Plains Shire Council LGA which has a population of 7,551 people (ABS, 2021). The closest communities to the Project are Wallabadah, with a population of 382, located about 10 kilometres to the south-west, and Nundle, with 482 residents, approximately 18 kilometres to the east. The town of Wallabadah is bisected by the New England Highway, which runs in a general north-south alignment and connects many of the local towns, villages and localities to the city of Tamworth.

There are several existing or proposed renewable energy projects located in proximity to the proposal area. These are discussed in Section 6.12 and displayed in Figure 1-1.

2.1.2 Local context

There are 16 sensitive receivers located within four kilometres of the proposal area (Figure 1-2). There is one associated dwelling located within Lot 31 DP1003682, no proposal components are located within this lot. An agreement has been reached between ACCIONA Energía and the landowner.

The key land use in the local area is centred around primary agriculture (grazing and cropping), with mining, forestry, national parks and state forests also present. Health care and social assistance is the largest industry employer in the local area, followed by retail trade, construction, education and training, manufacturing and accommodation and food services (NSW Office of Local Government, 2022).

2.1.3 Natural features

The topography of the area is characterised by gentle undulations, transitioning into low-lying hills and ridges. The proposal area has elevation ranging from approximately 630 metres in the south-west corner of the proposal area, to 730 metres in the north-east proposal area.

Wiles Gully intersects the south-western corner of the proposal area. Stockyard creek and Stockyard gully are located to the east of the proposal area. Additionally, within the proposal area there are several small ephemeral waterways that traverse the site.

There are no national parks or conservation areas in the immediate vicinity of the proposal, with all closest protected areas located to the south-east. The zoning and location of the nearby national parks and nature reserves are provided in Table 2-1.

Table 2-1 Nearby conservation areas

National Park or Conservation Area	Distance from the proposal	Local Environmental Plan (LEP)	Zoning
Wallabadah Nature Reserve	19 kilometres south-east	Liverpool Plains LEP 2011	C1 National Parks and Nature Reserves
Crawney Pass National Park	22 kilometres south-east	Tamworth Regional LEP 2010	C1 National Parks and Nature Reserves

2.1.4 Built features

The New England Highway runs along the western boundary of the proposal, which connects Yarraman in Queensland to Newcastle via Armidale and Tamworth in NSW.

The Quirindi aerodrome is located 32 kilometres to the west of the proposal and the Tamworth Regional airport is located 44 kilometres to the north of the proposal.

A TransGrid 330 kilovolt (kv) transmission line (Line 88) and associated easement runs north-south through the middle of the proposal area. The transmission line is protected by an easement approximately 60 m wide. There are no other easements or covenants on the land, however, the study corridor for the proposed New England Renewable Energy Zone (REZ) transmission project is located immediately to the west of the existing transmission line.

2.2 Strategic planning and policy context

2.2.1 Australia's Long Term Emissions Reduction Plan (National)

Australia’s whole-of-economy Long-Term Emissions Reduction Plan is focussed on technology and sets out how Australia will achieve net zero emissions by 2050. One of the key principles of the plan is keeping energy prices down, while providing affordable and reliable power. The plan identifies low emission technology solutions, including energy storage for firming, as a priority technology to achieving clean, affordable electricity.

The Technology Investment Roadmap is the cornerstone of the Long-Term Emissions Reduction Plan and sets a process to develop and deploy low emission technologies. The Technology Investment Roadmap includes a requirement to prepare a Low Emissions Technology Statement (LETS) which reviews, refines and evaluates the government’s investments in low emission technologies. The current LETS (2021) includes energy storage as an existing priority technology for government investment.

LETS 2021 indicates that broad deployment of electrical energy storage will facilitate further integration of low-cost solar and wind electricity in the grid. Energy storage will provide system security services and be a source of reliable, dispatchable electricity, and reduce pressure on electricity prices by meeting peaks in consumer demand.

The proposal would be consistent with the high priority technologies outlined in the Long Term Emissions Reduction Plan as it would provide increased transmission capacity and a reliable source of power at affordable prices for customers.

2.2.2 2024 Integrated System Plan

The *2024 Integrated System Plan* (2024 ISP) (Australian Energy Market Operator (AEMO), 2024) provides a comprehensive roadmap for the National Electricity Market (NEM) by supporting a once-in-a-century transformation in the way electricity is generated and consumed in eastern and south-eastern Australia. In NSW specifically, the roadmap legislation requires the equivalent annual generation of at least 12GW of renewable generation, and at least 2GW of long-duration storage by 2030.

The 2024 ISP and its optimal development path support Australia's complex and rapid energy transformation towards net zero emissions, enabling low-cost firmed renewable energy and essential transmission to provide consumers in the NEM with reliable, secure and affordable power.

Development opportunities for an optimal energy system identified in 2024 ISP acknowledges that to firm up the inherently variable nature of distributed and large-scale renewable energy generation, new flexible, dispatchable resources, including BESS (as proposed by the Proponent), will be needed. The 2024 ISP focuses on implementing a diverse range of storage solutions and flexible generation technologies to ensure reliability, security, and adaptability in a decarbonized power system.

New utility-scale battery and pumped hydro storage, located at appropriate parts of the network, will enable more effective dispatch of clean electricity on demand, increase resilience by shifting energy through time to manage weather variations, and provide critical system security services.

As the proposal would primarily involve the development of a BESS system that connects to existing power supply transmission networks, it is considered to align with, and support the intent of, the 2024 ISP.

2.2.3 NSW Transmission Infrastructure Strategy

The *NSW Transmission Infrastructure Strategy* (DPE, 2018) (the Transmission Infrastructure Strategy) acknowledges that NSW is undergoing an energy sector transformation which will change how energy is generated and used throughout the State.

The Transmission Infrastructure Strategy forms part of the NSW Government's broader plan to make energy more affordable, secure investment in new power stations and network infrastructure and ensure new technologies deliver benefits for customers.

By increasing transmission capacity and low-cost generation, the strategy aims to support an orderly transition of the energy sector over the next two decades.

As the proposal would involve the development of a large-scale BESS system that connects to existing power supply transmission networks, it is considered to complement the Transmission Infrastructure Strategy.

2.2.4 NSW Electricity Strategy

The Electricity Strategy (NSW Department of Planning, Industry and Environment, 2019) is the NSW Government's Plan for a reliable, affordable and sustainable electricity future. The Electricity Strategy acknowledges the challenges that exist in achieving the Government's objectives for the electricity system. This includes reliability risks from the retirement of some traditional coal-fired power stations combined with congestion within the existing transmission system. Both these risks reduce the attractiveness of investment in the new generation required to reduce electricity prices, improve reliability and protect the environment.

The Electricity Strategy sets out actions to address the specific needs of NSW while long term national reforms are developed and implemented. Wind and solar generation are variable in their output and need

to be complemented with firm and flexible technologies such as hydro, batteries, bioenergy, concentrated solar power, demand management and gas-fired generators. When variable generators are unable to satisfy demand, other technologies which can provide electricity on demand, i.e. firm generation (such as gas and battery storage) dispatch electricity into the grid. This energy generation and supply system is able to satisfy electrical demand so long as there is sufficient firm generation capacity to meet the system's electricity demand.

Batteries, as a form of electrical storage, also provide multiple grid services such as frequency regulation. The cost of batteries has fallen in recent years and is expected to continue to trend downwards making batteries a more feasible, commercial firming option for wind and solar farms. The principles guiding the development of the Electricity Strategy comprise four propositions. Principle 1: New generation, delivered by competitive markets should reduce electricity prices and protect the environment, notes that renewables, firmed by dispatchable technologies such as gas and storage, are the lowest cost form of new reliable electricity generation. Accordingly, a good investment environment will deliver new generation, reduce electricity prices and ensure reliability while protecting the environment.

The proposal is consistent with the goals of the Electricity Strategy, given the proposal's ability to provide firm generation infrastructure able to support and complement future development of renewable energy projects.

2.2.5 NSW Electricity Infrastructure Roadmap

The Electricity Infrastructure Roadmap recognises that NSW has some of the best renewable energy resources in the world and as the global economy moves to reduce carbon emissions, NSW can attract investment in new, low carbon industries and can benefit from some of the lowest electricity prices in the Organisation for Economic Co-operation and Development. The Electricity Infrastructure Roadmap also acknowledges that to take advantage of these opportunities, substantial investment into modernising the existing electricity system, including by building transmission, generation and long duration storage and firming infrastructure is required.

The purpose of the NSW Electricity Infrastructure Roadmap is to deliver this infrastructure and secure NSW's future as an energy superpower. The Roadmap is expected to attract $32 billion of timely and coordinated private sector investment in large-scale generation, storage and transmission by 2030 to maintain a reliable, secure and affordable supply.

The Electricity Roadmap notes that investment in large-scale storage and firming capacity, including battery storage (long and short duration) will be required to balance the supply of variable renewable energy.

2.2.6 NSW Climate Change Policy Framework

The aim of the NSW Climate Change Policy Framework (NSW Office of Environment and Heritage, 2016) is to maximise the economic, social and environmental wellbeing of NSW in the context of a changing climate and current and emerging international and national policy settings and actions to address climate change.

The long-term objective of the Climate Change Policy Framework is:

- To achieve net-zero emissions by 2050
- That NSW is more resilient to a changing climate.

As the proposal would include the provision of a BESS facility that would assist in the development of a renewable energy power supply network for NSW that would increase capacity and resilience, the proposal is considered to be complementary to the Climate Change Policy Framework.

2.2.7 New England North West Regional Plan 2041

The *New England North West Regional Plan 2041* (DPIE, 2022a) provides an overarching framework to guide development proposals, land use plans and infrastructure funding decisions for the New England North West. Of the 22 objectives laid out by the Regional Plan, the following are relevant to the proposal:

- Objective 8: Adapt to climate change and natural hazards and increase climate resilience
- Objective 9: Lead renewable energy technology and investment.

The proposal would involve the development of a BESS providing electricity storage and firming capacity for the region, supporting the development of intermittent renewable energy generation.

The Regional Plan references the Electricity Infrastructure Roadmap which sets out a plan for five Renewable Energy Zones (REZs), including one in the New England region, which will prioritise funding and support for the development of renewable energy projects. The New England REZ is expected to provide a network capacity of eight gigawatts. The proposals strategic positioning around five kilometres west of the new revised study corridor of the New England REZ and 75 kilometres south-west of the Central South Hub of the New England REZ would provide firm generation infrastructure to support the New England REZ by balancing the supply of variable renewable energy.

2.2.8 Liverpool Plains Shire Council Local Strategic Planning Statement 2040

The *Local Strategic Planning Statement* (LSPS) (Liverpool Plains Shire Council, 2020) identifies Liverpool Plains Shire Council's economic, social and environmental land use needs and visions for the next 20 years. It addresses the planning and development issues of strategic significance for the Shire through the identification of planning priorities and actions, spatial land use direction, and guidance.

Planning priority 5 of the LSPS relates to the management of resources and renewable energy, which identifies the Liverpool Plains Shire as being well placed to support the transition to renewables. A key aim of Planning priority 5 of the LSPS is to achieve a balanced approach to land use that allows *'agriculture, mining and renewable energy projects to co-exist in a sustainable manner*'.

The proposal aligns with the LSPS as it would support and complement future development of renewable energy projects within the region.

2.2.9 Renewable Energy Planning Framework

The NSW Government has created the *Renewable Energy Planning Framework* (DPHI, 2024b) to help achieve the transition to renewable energy, to support legislated net zero targets and to secure an affordable supply of electricity for the people of NSW. The framework provides a suite of policies that will guide the planning and assessment process for renewable energy development and infrastructure. The Framework references several guidelines that relate to renewable energy developments.

In relation to BESS projects, the *Benefit Sharing Guideline* (DPHI, 2024a) provides guidance on approaches and mechanisms that aim to distribute the financial and other benefits of a project between the applicant and the host community through mutually agreed opportunities. In the context of large-scale renewable

energy projects, arrangements with landholders, councils and local communities (including local Indigenous communities) provide opportunities for community members to directly share in the benefits of projects and for the applicant to enhance their social licence to build and operate their project.

This guideline applies to the proposal as it is located within RU1 Primary Production zoned land. ACCIONA Energía would align the proposal with the *Benefit Sharing Guideline* (DPHI, 2024a), including the benefit sharing rates, distribution of benefits and reporting requirements.

2.3 Proposal justification

As detailed in Section 2.2, NSW is undergoing an energy sector transformation which will change how energy is generated and used throughout the State. The need to increase the generation of renewable energy as many of the State's largest coal-fired power stations begin to close has been identified.

Wind and solar generation are variable in their output and need to be complemented with firm and flexible technologies such as hydro, batteries, bioenergy, concentrated solar power, demand management and gas-fired generators. When variable generators are unable to satisfy demand, other technologies which can provide electricity on demand i.e. firm generation (such as gas and battery storage) dispatch electricity into the grid. This energy generation and supply system is able to satisfy electrical demand so long as there is sufficient firm generation capacity to meet the system's electricity demand.

Without the development and operation of short and long-term dispatch infrastructure to support increasing investment, there is the potential for future deficit in capacity and reliability of the NSW power supply system. In a worst case scenario, this can lead to load shedding or blackout events.

The proposal would be for the development of a BESS. BESS facilities, such as that proposed by the proposal would provide storage, frequency control ancillary services (FCAS) (to provide a fast injection of energy, to manage supply and demand) and help firm variable renewable energy generation.

2.3.1 How does a BESS work?

Batteries are an energy storage technology designed to absorb and release electrical energy on demand. Lithium-ion is the most common battery chemistry used to store electricity and when a large number of batteries are installed together (i.e. grid-scale or large-scale battery storage (LSBS)) they can act as large-scale power generator when connected into the electricity transmission system.

Unlike many other forms of energy storage and generation, batteries are particularly valuable because they provide flexibility. They can respond faster than other energy storage or generation technologies and help maintain grid stability by providing the necessary response in fractions of a second.

The battery storage system would comprise modular units on pad mounted foundations, which are containerised. Each unit contains a number of battery pods strung together and connected to an inverter, which will convert the direct current (DC) from the batteries into alternating current (AC) and connect into the electricity grid.

The battery technology type and layout for the Project would be refined during the detailed design process.

2.4 Proposal objectives

The key objectives of the proposal include the following:

- Enhance the security, resilience, and sustainability of the electricity grid in NSW.
- Support the reduction of direct carbon emissions from NSW's electricity grid by decreasing reliance on traditional fossil fuel firming assets.
- Minimise potential impacts on the environment and community during construction and operation.
- Deliver long-term regional economic benefits, including the creation of jobs during construction and operation, and potential opportunities for local suppliers and service providers.
- Align with ACCIONA Energía's global and national sustainability commitments, including its goal of delivering infrastructure solutions that accelerate the energy transition and promote social and environmental responsibility.

3 THE PROPOSAL

This chapter provides an overview of the proposal, including its key elements and construction activities that would be undertaken.

3.1 Key features of the proposal

The proposal would involve construction, operation and maintenance, and decommissioning of a BESS at 11090 New England Highway Wallabadah, NSW 2343 (Lot 31 DP1003682, Lot 32 DP1003682, Lot 33 DP1003682, Lot 7011 DP1018687).

The proposal area is around 490 hectares. The BESS and associated infrastructure (proposal site) would require an area of around 115 hectares (inclusive of a conservative buffer surrounding the key design features) and would connect into the existing Tamworth-Muswellbrook (Line 88) 330 kV transmission line. The BESS would have a capacity of around 450 MW and with a storage duration of approximately four hours (1,800 MWh).

The proposal would include the following key built form features:

- A BESS including battery enclosures, inverters and auxiliary transformers
- Establishment of an onsite substation with a control building
- A TransGrid switching station with control building
- Temporary laydown area and batch plant (during construction stage only)
- 33 kV reticulation cable connection (above ground or below ground) between the BESS and the onsite substation.
- 330 kV overhead transmission line connection between the onsite substation and TransGrid switching station
- Connection from the TransGrid switching station to the existing Tamworth-Muswellbrook (Line 88) 330kV transmission line that transects the proposal area.
- Site access and intersection upgrades from the New England Highway
- Internal site access road and parking
- Establishment of an O&M facility, including a permanent office and staff amenities
- Utilities including telecommunications, water and wastewater for amenity buildings
- Stormwater management infrastructure
- Lighting
- Fencing
- Security
- Landscaping and screening vegetation.

The extent and configuration of the final built form will be refined through the EIS and design process. An indicative overview of the proposal is shown in Figure 3-1.

At the end of its design life or agreed timetable, the proposal would be decommissioned in accordance with the process described in Section 3.5.

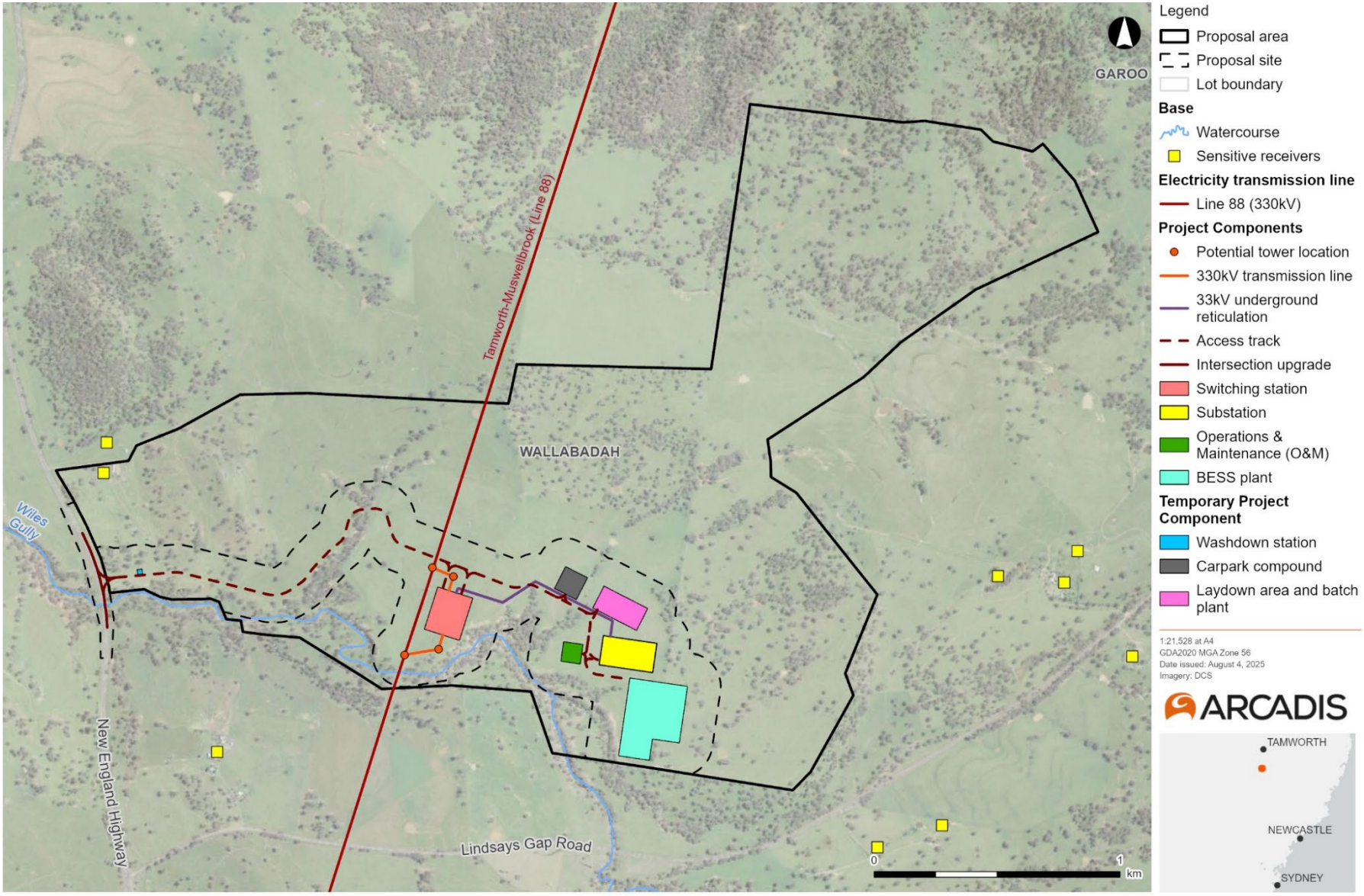


Figure 3-1 Indicative overview of the proposal

3.2 Strategic alternatives

This section describes the development options considered as part of this Scoping Report. These will be considered in greater detail in the EIS.

The Proponent completed a site selection exercise for the proposal which included reviewing potential BESS development opportunities within NSW. A number of site selection criteria were applied, including (but not limited to):

- Land use zoning and development permissibility
- Existing grid infrastructure
- Availability of access to the site via a major road
- Provision of an area that could avoid and/or minimise the need to remove high quality native vegetation
- A flat site that would require minimal excavation and/or levelling
- An area that would not result in or be subject to flooding impacts
- An area that is not located within bushfire prone land
- Minimising impact on surrounding privately or publicly owned land
- Minimal environmental impacts.

3.2.1 Alternative proposal area

Following an assessment of electricity needs across NSW, relevant planning and policy considerations, and forecasted demands, ACCIONA Energía identified the New England North West region as a suitable location for the development of a BESS.

ACCIONA Energía has considered other sites, however at this stage no other alternative sites have been identified. The key limiting factors to an alternative site are the potential increased costs and environmental impacts associated with the:

- Acquisition of a suitable property with appropriate road access
- Proximity to existing transmission infrastructure.

The proposal area was deemed to be an appropriate option for the proposal as it is intersected by the Tamworth- Muswellbrook (Line 88) 330 kV transmission line, and provides site access via the New England Highway.

3.2.2 Alternative technology

Lithium-ion is the most common battery chemistry used however other technologies are available. The battery technology type and layout for the proposal will be refined during the EIS. Battery chemistry and associated technology options are rapidly evolving and combined with decreasing costs, are progressively being investigated and pursued.

Flow batteries offer a low-cost and environmentally sustainable alternative to lithium-ion battery systems and are capable of long-duration discharge. Flow batteries produce energy by circulating two differently charged electrolyte solutions (for example from iron, salt, and water) through containers separated by a membrane with low permeability. As the liquids pass over the membrane, electrical current passes through conductive graphite plates in either container, leaving the electrolyte solution. During discharge, ions used to generate energy then dissolve back into the electrolyte solution.

Flow batteries are capable of accommodating increased energy storage capacity and discharge duration by adding additional electrolytes to the system. The layout of a flow battery system would comprise flow energy centres in a housed enclosure and associated electrolyte storage tanks on pad mounted foundations. Each flow centre comprises a number of connected power trains connected to an in inverter, which would convert the DC from the batteries into AC and connect into the electricity grid.

Battery chemistries subject to further investigation during preparation of the EIS are provided in Table 3-1.

Table 3-1 Battery chemistry overview

Battery chemistry	Overview
Lithium-ion	Lithium-ion chemistries are diverse. Nickel-Manganese-Cobalt and Iron Phosphate formulations are commonly used within BESS facilities
Lithium-ion polymer battery	Alternative being investigated as certain formulations are quoted to achieve greater safety (e.g., reduction or elimination of thermal runaway), increased energy density, material stability within a greater operating envelope, and an enhancement in overall performance.
Vanadium redox flow battery (flow battery)	Alternative capable of long-duration discharge. Quoted to achieve greater safety (e.g., reduction or elimination of thermal runaway), greater temperature operating envelope and longer operational design life.
Sodium-ion battery	Alternative option given its environmental abundance, non-flammable nature, and reduced susceptibility to temperature changes relative to Lithium-ion batteries

3.2.3 Alternative proposal site within the proposal area

Two options within the proposal area were considered for the siting of the BESS infrastructure.

Option 1 considered a site to the north-east of the proposal area, whilst Option 2 considered a site to the south of the proposal area (Figure 3-2).

Option 1 was deemed to be less favourable than Option 2 due to three key factors:

- Proximity to transmission line
- Constructability
- Landowner preference.

Firstly, Option 1 is located further from the existing transmission line, which would require the construction of a longer transmission connection, and a more substantial access road compared to Option 2. Additionally, Option 2 presents better constructability than Option 1. The site is predominantly flat and would require minimal earthworks, avoiding significant cut-and-fill activities. In contrast, Option 1 is situated on sloping terrain, thus increasing the complexity and potential environmental impact during construction. Lastly Option 2 is the preferred option by the landowners as it better aligns with their current land management practices.

The proposal site refers to Option 2.

3.2.4 Do nothing

The do-nothing approach would not support the NSW Government's broader plans and strategies to make energy more affordable, secure investment in new power sources and network infrastructure, nor ensure that new technologies deliver benefits for customers.

For these reasons, the 'do nothing' scenario is neither preferred, nor considered a viable option.

3.2.5 Build the proposal at the proposal site

The proposal would leverage its strategic location in proximity to the New England Renewable Energy Zone (REZ), and existing infrastructure. It is considered that the proposal's location is advantageous for the construction and operation of a new BESS.

The proposal would support the future capacity and resilience of the NSW energy network.

Building Option 2 within the proposal site at 11090 New England Highway Wallabadah, NSW 2343 was considered as the preferred location for the BESS facility when compared to other locations across NSW. Underpinning factors for this decision included the:

- Compatibility of the proposal with existing land use zoning and permissibility
- Existing electricity infrastructure setting (i.e. the existing Tamworth- Muswellbrook (Line 88) 330kV line)
- Proximity to the New England REZ
- The results of preliminary site environmental feasibility assessments carried out by ACCIONA Energía which indicated environmental, and amenity impacts to the surrounding area can minimised and appropriately managed.

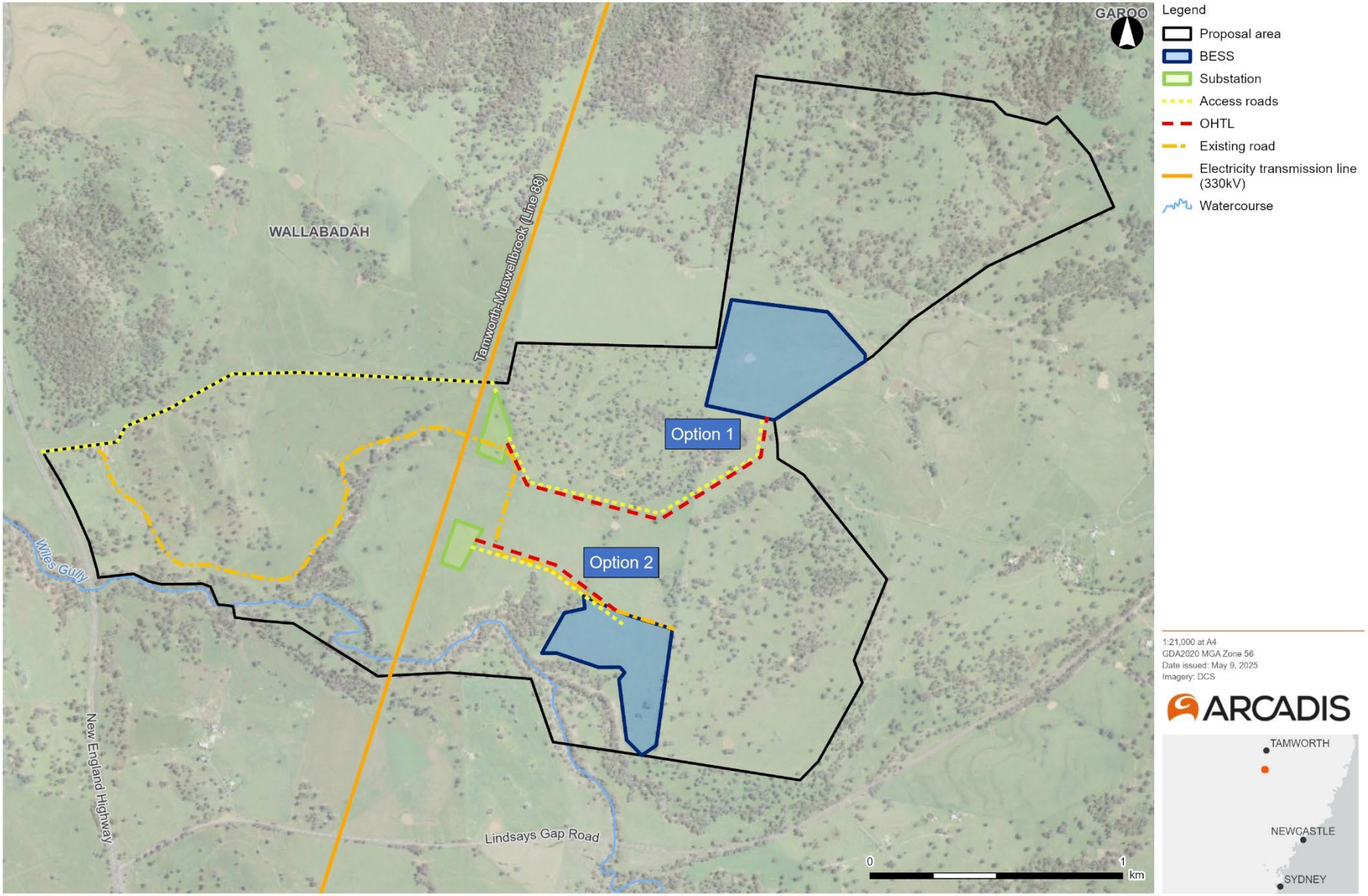


Figure 3-2 Options considered within the proposal area

3.3 Construction

3.3.1 Overview

Key construction activities are expected to include:

- Site enabling works including:
  - Establishment of temporary environmental controls
  - Establishment of site access points and construction of an internal access road and car park. The internal access road would become the permanent operational access road at the completion of construction
  - Access road and intersection upgrades to faciliate oversized vehicle delivery and traffic management
  - Vegetation clearance
  - Boundary fencing
  - Utility works to enable construction
  - Establishment of a temporary construction site office, laydown area and batch plant
  - Environmental investigations or protection works (for example heritage, geotechnical (excluding preliminary geotech works), vegetation clearing (if required by final design) and contamination investigations, where required).
- Site access and intersection upgrades from the New England Highway may be required to facilitate the access and egress of heavy vehicles during construction of the proposal. A Warrants Assessment would be completed during the EIS to determine whether a right turn bay and/or a left turn bay is required to access the proposal site.
- Earthworks, levelling, and other civil and ground preparation activities, including the removal of spoil from the proposal site, as required
- Establishment of hardstand areas for BESS equipment, switching station and substation
- Delivery, installation and electrical fit-out for the proposal, including the control buildings, substation, switching station, battery enclosures, inverters, transformers and associated cabling and infrastructure for the 33 kV medium voltage (MV) reticulation system.
- Connection to the Tamworth-Muswellbrook (Line 88) 330 kV transmission line. This would be via a 'loop in – loop out' cut in connection which will connect into an onsite switching station (which will be owned and operated by Transgrid). Additional works may also include the construction of access roads within the Line 88 transmission easement.
- Establishment of fire asset protection zone and firefighting systems
- Permanent environmental management and pollution control measures (e.g. bioretention basins or equivalent)
- Construction of an O&M facility, including a permanent office and staff amenities
- Finishing works
- Testing and commissioning
- Removal of construction equipment and rehabilitation of temporary construction areas (i.e. laydown area and batch plant).

It is likely that some elements would be prefabricated offsite and transported to the proposal site via heavy vehicles, where they would then be installed. The batteries would likely be containerised on areas of hardstand. Relevant hazardous substance management procedures and controls would be identified

through further design development and implemented in accordance with the relevant guidelines and legislation.

3.3.2 Construction program

Construction of the proposal would begin after all relevant approvals are obtained. Site enabling works are expected to commence in Q3 of 2027. Construction is anticipated to take 12-18 months.

3.3.3 Workforce

It is anticipated that up to 150 personnel a day would be required during the peak construction periods of the proposal, whilst early works are anticipated to require a smaller crew of 20-30 personnel, and approximately 80 personnel during the finalisation of construction. The construction workforce would include (but not be limited to) the following:

- Tradespeople and construction personnel
- Sub-contractor construction personnel
- Engineers
- Functional and administrative staff.

3.3.4 Construction hours

Construction of the proposal would be undertaken during standard daytime construction hours, which would be:

- 7am to 6pm Monday to Friday
- 8am to 1pm Saturdays
- No work on Sundays or public holidays.

Activities that would be carried out outside of the standard daytime construction hours would include:

- Work determined to comply with the relevant noise management levels at the nearest sensitive receptor
- The delivery of materials outside approved hours as required by the NSW Police or other authorities for safety reasons
- Emergency situations where it is required to avoid the loss of lives and properties and/or to prevent environmental harm.

3.4 Operation

The BESS would operate (charge and/or discharge) based on network and market conditions. Energy would be taken from the grid and stored within the BESS. In this respect, the BESS would provide storage for energy arbitrage and frequency control ancillary services providing a fast injection or absorption of energy to manage supply and demand and help firm variable renewable energy generation for ACCIONA Energía's customers in NSW.

The proposed BESS would be operational 24 hours a day, seven days a week. It is anticipated that the proposed operation would be largely undertaken remotely. However, there may be a requirement for two to three semi-permanent/permanent onsite personnel during operation of the proposal. An O&M facility would be established as part of the proposal to support onsite activities, such as for maintenance and technical inspections, when required. Staff would attend the proposal site on an as-needs basis and would

include maintenance workers and site technicians. The proposal is anticipated to be operational in Q4 2028 with a design life of around 25 years.

3.5 Decommissioning

At the end of its design life or agreed timetable, the batteries would either be disposed of and / or recycled at approved disposal and / or recycling facilities or returned to the original equipment manufacturer for refurbishment and recycling (subject to confirmation). Opportunities to extend the design life would be reviewed subject to the replacement of components and market conditions.

Following decommissioning, the proposal site would be rehabilitated to pre-development conditions as far as is reasonably practicable. If ACCIONA Energía is unable to secure the proposal site, the land would be rehabilitated to a standard agreed with the landowner, which may include pre-development conditions or other arrangements.

4 STATUTORY CONTEXT

This section outlines the key statutory requirements of the proposal under the *Environmental Planning and Assessment Act 1979* (EP&A Act) and other relevant NSW and Commonwealth legislation with regard to the *State Significant Development Guidelines – Preparing a Scoping Report* (DPE, 2022b).

4.1 Power to grant consent

Approval for the proposal will be sought under Part 4, Division 4.7 of the EP&A Act, which outlines the approval pathway for development deemed to be State Significant Development. Section 4.36 of the EP&A Act provides for the declaration of a project as SSD. The declaration of a project as SSD under Section 4.36 of the Act can be by meeting the requirements of a SEPP or by the Minister for Planning.

Clause 2.6 of the *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP) states that development is declared to be SSD for the purposes of the EP&A Act if:

(a) The development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act, and
(b) The development is specified in Schedule 1 or 2.

Clause 20 of Schedule 1 of the Planning Systems SEPP declares development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) to be SSD if it either:

(a) Has a capital investment value of more than $30 million, or
(b) Has a capital investment value of more than $10 million and is located in an environmentally sensitive area of State significance.

The proposal has an estimated development cost of more than $30 million.

The proposal is considered to meet the definition of SSD under Clause 2.6 of the Planning Systems SEPP, as the proposal would be for electricity generating works on land that is permitted with development consent under Clause 2.36(1)(b) of the T&I SEPP and would have an estimated development cost greater than $30 million.

Development consent for the proposal is therefore being sought in accordance with Part 4, Division 4.7 of the EP&A Act.

4.2 Permissibility

The proposal is located wholly within the Liverpool Plains Shire Council LGA and is subject to the provisions of the *Liverpool Plains Shire Council Local Environmental Plan (LEP) 2011*. The proposal in its entirety is zoned as *RU1 – Primary Production* under the Liverpool Plains Shire Council LEP 2011.

Under the Liverpool Plains Shire Council LEP 2011, the use of the site for 'electricity generating works' is not specified as prohibited within the RU1 zone and is therefore permissible with development consent. 'Electricity generating works' refers to a building or place used for the purpose of:

a) Making or generating electricity, or

b) Electricity storage

Division 4 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP) applies to development for the purposes of electricity generating works or solar energy systems.

Electricity generating works are defined in Clause 2.35 as *'a building or place used for the following purposes, but does not include a solar energy system –*

(a) making or generating electricity,
(b) electricity storage'

Development permitted with consent is defined in Clause 2.36(1) as *'development for the purpose of electricity generating works may be carried out by any person with consent on the following land –*

(a) in the case of electricity generating works comprising a building or place used for the purpose of making or generating electricity using waves, tides or aquatic thermal as the relevant fuel source—on any land

(b) in any other case—any land in a prescribed non-residential zone

As the proposal site is located within the Liverpool Plains Shire LGA on land zoned as RU1 Primary Production (Figure 4-1). In accordance with Clause 2.36(1)(b), the proposal is therefore permissible with development consent under the provisions of the T&I SEPP.

4.3 Other approvals

Other approvals required under relevant NSW and Commonwealth legislation are described in Table 4-1.

Table 4-1 Other approvals required under NSW and Commonwealth Legislation

Approval	Requirement
Consistent Approvals	
EP&A Act Section 4.42	Section 4.42 of the EP&A Act provides for a number of approvals that are to be applied consistently to approved SSD projects.
Roads Act 1993	Development of any upgrades to enable the connection of the proposal to the New England Highway would require consent under section 138 of the *Roads Act 1993* (Roads Act).
Commonwealth Approvals	
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The EPBC Act establishes the Commonwealth's role in environmental assessment, biodiversity conservation and the management of protected areas. Under the EPBC Act, a referral is required to the Australian Government for proposed actions that have the potential to significantly impact on matters of national environmental significance or the environment of Commonwealth land (including leased land). Issues with respect to matters of national environmental significance (MNES) are discussed in section Chapter 6. A decision on the need to refer the proposal is subject to further investigations, including the outcomes of future biodiversity field surveys and design development.
Native Title Act 1993	Searches of the registers maintained by the National Native Title Tribunal indicate there is an active Native Title application for the Gomeroi People is present across the proposal site (Tribunal No. NC2011/006). Consultation with the applicant will be undertaken as part of the EIS. An Aboriginal Cultural Heritage Assessment Report (ACHAR) will accompany the EIS.

Approval	Requirement
Other Approvals	
Biodiversity Conservation Act 2016 (BC Act)	The BC Act seeks to: • Conserve biological diversity at the bioregional and State scale • Maintain the diversity and quality of ecosystems and enhance their capacity to adapt to change and provide for the needs of future generations • Assess the extinction risk of species and ecological communities and identify key threatening processes through an independent and rigorous scientific process • Establish a framework to avoid, minimise and offset the impacts of proposed development and land use change on biodiversity. Based on the database review, it is unlikely that the proposal would have a significant impact on biodiversity values (refer to Chapter 6).
Contaminated Land Management Act 1997 (CLM Act)	This CLM Act outlines the circumstances in which notification to the Environment Protection Authority is required in relation to the contamination of land. This may become relevant during construction of the proposal if contamination is encountered. A public register of notifications under this Act is maintained.
Heritage Act 1977 (Section 146)	If a relic is discovered or located, the Heritage Council must be notified '*of the location of the relic, unless he or she believes on reasonable grounds that the Heritage Council is aware of the location of the relic*'.
Protection of the Environment Operations Act 1997 (POEO Act)	The POEO Act is the key piece of environment protection legislation administered by the Environment Protection Authority. • Section 120 of the Act prohibits the pollution of waters • Air pollution-related Sections 124 to 126 (Chapter 5, Part 5.4, Division 1) of the Act require activities to be conducted in a proper and efficient manner, while Section 128 (Chapter 5, Part 5.4, Division 1) of the Act requires that all necessary practicable means are used to prevent or minimise air pollution • Pollution of land and waste is covered by Part 5.6 of the Act. It defines offences relating to waste and sets penalties and establishes the ability to set various waste management requirements via the *Protection of the Environment Operations (Waste) Regulation 2014* The activities listed in Schedule 1 to the Act (broadly, activities with potentially significant environmental impacts) require an EPL. The operation of the BESS does not constitute any of the scheduled activities and therefore does not require an EPL.
Rural Fires Act 1997 (RF Act)	Sections 63(1) and 63(2) of the RF Act require public authorities and owners/occupiers of land to take all practicable steps to prevent the occurrence of bushfires on, and to minimise the danger of the spread of bushfires on or from, that land. The proposal is situated in its entirety as Category 3 Vegetation (medium risk) bushfire prone land. The proposal would be designed in accordance Planning for Bushfire Protection (NSW Rural Fire Service 2019).
Approvals not required under section 4.41 of the EP&A Act	
Fisheries Management Act 1994 Section 201, 205 or 219	A permit under the *Fisheries Management Act 1994* to dredge or carry out reclamation work (section 201) or block fish passage (section 219) will not be required pursuant to Section 4.41 of the EP&A Act. No works are proposed in waterways. The proposal would not impact on any marine vegetation that is protected under this section. The proposal would not result in the blockage of fish passage.

Approval	Requirement
	Impacts to waterways will be considered in the EIS in accordance with the methodology presented in Chapter 6.
Heritage Act 1977 Section 139	An approval under Part 4, or an excavation permit under Section 139, of *the Heritage Act 1977* will not be required pursuant to Section 4.41 of the EP&A Act. No non-Indigenous items have been identified within the proposal area based on a review of the NSW State Heritage Inventory and Australian Heritage Database. There are 10 locally listed heritage items approximately 7 kilometres or further from the proposal area (LEP 2011).
National Parks and Wildlife Act 1974 Section 90	An Aboriginal heritage impact permit under Section 90 of the National Parks and Wildlife Act 1974 will not be required pursuant to Section 4.41 of the EP&A Act. No Aboriginal cultural heritage sites have been previously recorded within the proposal area. An extensive search of the Aboriginal Heritage Information Management System (AHIMS) register on 9 May 2025 identified 25 Aboriginal heritage sites within a 10 kilometres radius of the proposal site. An assessment of Aboriginal cultural heritage will be prepared as part of the EIS and will include consultation with the registered Aboriginal parties for the proposal as outlined in Chapter 6.
Water Management Act 2000 Sections 89, 90 and 91	Water use during project construction and operation is anticipated to be minimal. No impacts are anticipated on the availability of current surface or groundwater resources used by local landholders.
Local Land Services Act 2013	Clearing of native vegetation in a regulated rural area is authorised if it is carried out in accordance with a development consent under Part 4 of the EP&A Act. Assessment of the potential biodiversity impacts will be undertaken in accordance with the Biodiversity Conservation Act and discussed within the EIS.

4.4 Pre-conditions to exercising the power to grant consent

Table 4-2 Applicable pre-conditions to granting development consent

Statutory reference	Requirement
Environmental Planning and Assessment Regulation 2021	
Section 23(1)	A development application can only be made by the owner of the land to which the development application relates, or by another person with written consent of the owner of the land.
Section 28(2)	A development application that is accompanied by a Biodiversity Development Assessment Report (BDAR) under the BC Act must contain the 'biodiversity credits information'. The development application for the proposal would be accompanied by a BDAR, (including biodiversity credit information) and the EIS would include the biodiversity assessment required by the SEARs.

Statutory reference	Requirement
Biodiversity Conservation Act 2016	
Section 7.9	A development application for State significant development is to be accompanied by a BDAR (unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values). The EIS is to include the biodiversity assessment required by the environmental assessment requirements of the Planning Agency Head under the EP&A Act. The development application for the proposal would be accompanied by a BDAR (including biodiversity credit information), and the EIS would include the biodiversity assessment required by the SEARs.
State Environmental Planning Policy (Transport and Infrastructure) 2021	
Section 2.48	As the proposal would be adjacent to the existing Line 88 transmission line, written notice is to be given to the electricity supply authority for the area in which the development is to be carried out, inviting comments about potential safety risks. Consideration is to be given to any response to the notice that is received within 21 days after the notice is given.

4.5 Mandatory matters for consideration

The consent authority is required to consider a range of matters when deciding whether to grant consent for the proposal. These are referred to as mandatory considerations, which are described in Table 4-3.

Table 4-3 Mandatory considerations

Statutory reference	Mandatory consideration
Considerations under the EP&A Act	
Section 1.3 – Objects of the Act	Pursuant to Section 1.3 of the EP&A Act, the Objects of the Act are: a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources, b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment, c) to promote the orderly and economic use and development of land, d) to promote the delivery and maintenance of affordable housing, e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats, f) to the sustainable management of built and cultural heritage (including Aboriginal cultural heritage), g) to promote good design and amenity of the built environment, h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants, i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State, j) to provide increased opportunity for community participation in environmental planning and assessment.

Statutory reference	Mandatory consideration
	The EIS would consider and confirm the proposal's concurrence with the Objects of the Act.
Section 4.15 – Evaluation	The consent authority is required to take the following matters into consideration in determining a development application: • Relevant environmental planning instruments including: – TISEPP – State Environmental Planning Policy (Resilience and Hazards) 2021 – SEPP (Biodiversity and Conservation) 2021 – Liverpool Plains Shire Council LEP • The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality • The suitability of the site for the development • Any submissions made in accordance with this Act or the regulations • The public interest The EIS would address each evaluation matter and provide relevant detail in relation to how the proposal is consistent with each.
Considerations under other legislation	
Biodiversity Conservation Act 2016 – Section 7.14	The Minister for Planning is required to take into account the impact of the development on biodiversity values as assessed in the BDAR. The Minister may (but is not required to) further consider under the Act the likely impact of the proposed development on biodiversity values.
Considerations under relevant EPIs	
State Environmental Planning Policy (Planning Systems) 2021	The Planning SEPP identifies development that is SSD. As outlined in Section 4.1, the proposal is considered to be SSD under Clause 2.6 of the Planning SEPP.
State Environmental Planning Policy (Resilience and Hazards) 2021 (R&H SEPP)	The R&H SEPP applies to any projects that fall under the policy's definition of 'potentially hazardous industry' or 'potentially offensive industry'. Certain activities may involve handling, storing or processing a range of substances which in the absence of locational, technical or operational controls may create a risk or offence to people, property or the environment. Such activities would be defined as potentially hazardous or potentially offensive. The proposal is not considered to be a 'potentially hazardous industry' or 'potential offensive industry' under the R&H SEPP. Nonetheless, the EIS for the proposal would include an assessment of potential hazards and risks associated with the construction and operation of the proposal. Refer to Chapter 6 for more information.
State Environmental Planning Policy (Resilience and Hazards) 2021 Chapter 4 (Remediation of land)	The R&H SEPP provides a state-wide approach to the remediation of contaminated land for the purpose of minimising the risk of harm to the health of humans and the environment. In accordance with Chapter 4 (Remediation of land) of the R&H SEPP, a consent authority must not consent to the carrying out of development on any land unless: • It has considered whether the land is contaminated. • If the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or would be suitable, after remediation) for the purpose for which the development is proposed to be carried out.

Statutory reference	Mandatory consideration
	• If the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied the land would be remediated before the land is used for that purpose. A review of potential contamination issues for the proposal will be carried out in accordance with the contaminated land planning guidelines to inform the design and EIS. Refer to Chapter 6 for more information.
State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP)	T&I SEPP aims to facilitate the effective delivery of infrastructure across NSW. Division 4 of the T&I SEPP applies to the proposal, as it is considered to be development for the purposes of electricity generating works or solar energy systems.
State Environmental Planning Policy (Biodiversity and Conservation) 2021 (B&C SEPP)	The B&C SEPP provides a framework for the regulation of the clearing of native vegetation in NSW. Further information is provided in Chapter 6.
Liverpool Plains Shire Council LEP 2011	The proposal site is located within the Liverpool Plains Shire Council LGA and is subject to the provisions of the Liverpool Plains LEP. The proposal site is located on land zoned as RU1 Primary Production. Electricity generating works are prohibited on RU1 zoned land under the Liverpool Plains Shire LEP. However, as the proposal is permissible under the T&I SEPP, the Liverpool Plains Shire LEP does not apply. Despite this, local provisions contained in Liverpool Plains LEP 2011 will be considered where relevant, as part of the EIS, including earthworks, flood planning, stormwater management and biodiversity.

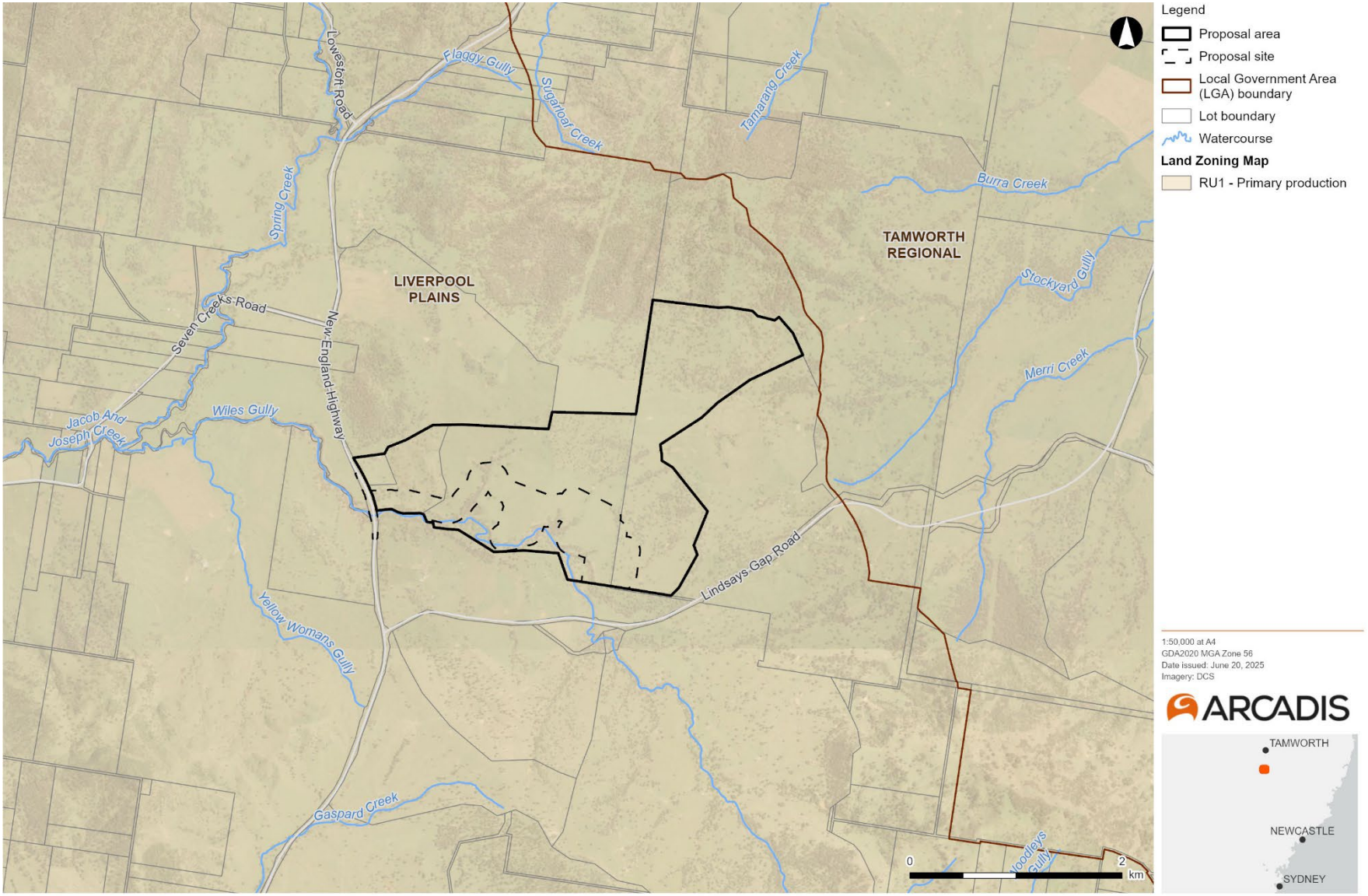


Figure 4-1 Land zoning

5 ENGAGEMENT

This section outlines the key community and stakeholder engagement undertaken for the proposal. Community and stakeholder engagement for the proposal is being undertaken in accordance with *Undertaking Engagement Guidelines for State Significant Projects* (DPHI, 2024) and *ACCIONA Energías' Consultation Procedure*.

5.1 Community groups and stakeholders

ACCIONA Energía has undertaken an initial stakeholder scoping exercise and identified a number of key interest groups. The key interest groups identified from the scoping exercise for future engagement include:

- Liverpool Plains Shire Council
- NSW Government authorities:
  - DPHI
  - NSW Environment Protection Authority (EPA)
  - Transport for NSW
  - Heritage NSW
  - Department of Climate Change Energy the Environment and Water (DCCEEW)
  - DCCEEW Conservation Programs, Heritage and Regulation Group [1] (CPHRG)
  - NSW National Parks and Wildlife Service (NPWS)
  - Mining Exploration and Geoscience (MEG)
  - Water NSW
  - DPHI Water
  - DPHI Hazard
  - Fire and Rescue
  - NSW Rural Fire Service
  - Department of Primary Industries (DPI) Agriculture
  - NSW Local Land Services
  - Crown Lands
  - EnergyCo
- NSW Aboriginal Land Council (NSWALC)
- Nungaroo Local Aboriginal Land Council and interested Registered Aboriginal Parties
- Local Aboriginal communities
- Energy industry bodies and infrastructure service providers
- State and Federal Members
- North West Local Land Services
- Other infrastructure developers and projects
- Neighbours (defined as dwellings within 1.5 kilometres of the proposal)
- Project neighbourhood (defined as dwellings within 1.5 to 4 kilometres of the proposal)

[1] CPHRG formerly Biodiversity, Conservation and Science

- General community members and community groups
- Wallabadah township.

5.2 Consultation objectives

ACCIONA Energía is committed to undertaking community and stakeholder consultation for the proposal. The communication and engagement objectives for the proposal, and objectives likely to appear in ACCIONA Energía's Community and Stakeholder Engagement Plan, are to:

- Ensure external stakeholders are clearly identified and their specific needs are understood and managed
- Ensure all stakeholders understand and are aware of the Project and work to increase acceptance of the project in the region
- Ensure the social licence to operate (reputation and trust) is built and maintained through the engagement of external stakeholders
- Engagement and communication activities are transparent, equitable, and accessible, with adequate opportunities for stakeholders to comment or provide input
- Deliver engagement targeted at mitigating identified stakeholder risks so that the Project can be delivered on budget and schedule
- Relationships are built with stakeholders to ensure effective dialogue with the project team
- All stakeholders, including relevant Traditional Owners, are aware of the statutory consultation process, timeframes, and opportunities to provide feedback
- Stakeholders are aware of the project and understand the early field studies, environmental approvals, and design development process
- Provide opportunity for the public to engage with the Project Delivery team via stakeholder engagement activities
- Involve the community in negotiable decision points to build trust and buy-in with project about the design
- Feedback from relevant authorities is incorporated into the design and approvals process
- Gain stakeholder and community cooperation, understanding, and acceptance of the design through meaningful interactions and appropriate engagement.

5.3 Community and stakeholder engagement

Community and stakeholder engagement activities regarding the proposal commenced in Q2 of 2025. This targeted engagement has focused primarily on notifying neighbours, the Project neighbourhood, government agencies, and other interested community members and stakeholders of ACCIONA Energía's intention to lodge the Scoping Report for the proposal and enable stakeholders to:

- Identify any additional interested stakeholders
- Take up any early engagement opportunities to understand the proposal
- Provide feedback about aspects of the proposal which they support, do not support, or wish to be adjusted
- Provide clear reasons for any concerns and possible alternative approaches
- Identify any matters they feel have not been considered.

An overview of consultation undertaken to date is provided in Table 5-1. A copy of the key consultation materials is provided in Appendix C.

Table 5-1 Summary of engagement activities undertaken to date

Stakeholder	Method of consultation	Feedback	Action taken
Community / Businesses			
Neighbours (defined as dwellings within 1.5 kilometres of the proposal).	• Introductory letter & BESS factsheet, via mail • Drop-In session flyer, via letterbox drop.	Multiple requests to meet received. **Concerns regarding:** • Timing of information being provided • Impacts to neighbouring property, including devaluation of the property • Run-off, in the event of a fire • Description of the project location • Noise impacts during construction and operation • Visual impact of the switching station • Volume of water required, and source(s) of water • Cumulative impacts of nearby projects, in particular regarding traffic and water • Location of projects that will have cumulative impacts being across multiple LGAs. **Further information requested regarding:** • Site selection process and the decision to not be located in a Renewable Energy Zone (REZ) • Neighbour compensation • Insurance liability • Whether or not other projects were going to be built in the area • How much water will be required during construction and operation. **Other information and suggestions:** • Utilisation of neighbouring rental properties for accommodating construction and operation staff	• Meetings held on 23 June 2025. • Description of the project location updated. • Further consideration to key concerns and requests for further information will be provided within the EIS.

Stakeholder	Method of consultation	Feedback	Action taken
Project neighbourhood (defined as dwellings within 1.5 to 4 kilometres of the proposal).	• Introductory letter & BESS factsheet, via mail • Drop-in session flyer, via letterbox drop.	• Supportive of the project • Potential for existence of the BESS to help with fire protection in the area • Utilisation of neighbouring rental properties for accommodating construction and operations staff • Opportunity to help with vegetation clearing in the area, for example on the Highway, that increases the current fire risk • Joint training for operations staff with the local Rural Fire Service.	• Meeting held • Further consideration to key concerns and requests for further information will be provided within the EIS.
Member for Tamworth	• Introductory letter, via email.	Request to meet.	Request to meet sent.
Member for New England	• Introductory letter, via email.	No response received to date.	NA.
Residents in Wallabadah and surrounds	• Drop-in session flyer, via letterbox drop and PO boxes • Drop-in session flyer, via social media pages and groups • Drop-in session flyer, via email to local groups and organisations • Drop-in session flyers and posters, placed in local venues • Drop-in sessions advertisement, via local and regional newspapers • Drop-in sessions – held on 26 and 27 June 2025.	**Concerns regarding:** • Fire risk and fire response times for the operations team • Contamination after firefighting including impacts on watercourses • Insurance and public liability for neighbours • How long the project will be there • Responsibility for decommissioning • Profits going offshore. **Further information requested regarding:** • Confirmation of the project location • How much land the project will take up • What the BESS will be made from/contain • What financial support is provided for the Project by the Federal Government.	• Information requested has been provided. • Further information will be provided once sourced • Further consideration to key concerns and requests for further information will be provided within the EIS.

Stakeholder	Method of consultation	Feedback	Action taken
General community	• Drop-in session flyer, via social media pages and groups • Drop-in session flyer, via email to local groups and organisations • Drop-in sessions advertisements, via local and regional newspapers • Drop-in sessions – held on 26 and 27 June 2025.	• No feedback received to date.	NA.
Agencies			
Department of Planning, Housing & Infrastructure (DPHI)	Introductory meeting.	Feedback was provided in relation to site access arrangements and potential establishment of a construction camp.	The potential establishment of a construction camp to house workers would be considered further during the EIS and in consultation with Council.
Liverpool Plains Shire Council (LPSC)	Multiple attempts have been made to contact LPSC, via a number of methods. These include: • 20/3/2025: Call to request meeting and introduce Project Team. • 26/5/2025: Introductory Letter, including offer of meeting, sent to the Mayor and General Manager via email. • 13/6/2025: Representatives from ACCIONA Energía visited Council and shared information regarding Community Drop-In sessions. • 25/6/2025: Representatives from ACCIONA Energía visited Council and provided multiple copies of	LPSC representatives indicated that a meeting was unable to be organised at this time. LPSC representatives indicated they would share the information via their local facilities, ie. libraries and visitor information centres.	NA.

Stakeholder	Method of consultation	Feedback	Action taken
	information regarding the Project – factsheet and proposed project layout map. Provided business card and requested for these to be passed on to relevant people.		
Nungaroo Local Aboriginal Land Council	Introductory letter & BESS factsheet, via email.	No response received to date.	NA.
NSW Rural Fire Service – Liverpool Range District	Drop-in session flyer, via email.	Response received. Passed the information on to the Wallabadah Brigade.	NA.
NSW Rural Fire Service – Wallabadah Brigade	Drop-in session flyer, via email to District office.	**Concerns regarding:** • Fires that may impact the facility, rather than fires within the facility. **Other information and suggestions:** • Lots of lightning strikes in the area.	Information was provided to share with other members of the Wallabadah Brigade.
DPHI Hazards Department	Introductory letter, via email.	No response received to date.	NA.
Conservation Programs, Heritage and Regulation Group (CPHRG) *Previously known as Biodiversity Conservation Science (BCS)*	Introductory letter, via email.	Response received. Feedback to be provided at lodgement of the Scoping Report to inform SEARs.	NA.
Transport for NSW	Introductory letter, via email.	Response received., Recommendations regarding: **Site Access and Connectivity** • Identification of primary and secondary access points to the proposed site from the existing road network. • Assessment of suitability of access routes for heavy vehicles, especially during the construction phase.	• Primary access to the proposal site would be via the New England Highway, as described in Section 6.2.1. Potential intersection upgrades to facilitate site access by heavy vehicles will be considered during the EIS. • The construction workforce is anticipated to consist of up to 150

Stakeholder	Method of consultation	Feedback	Action taken
		• Consideration of potential upgrades intersections or road segments leading to the site. **Construction Traffic Impacts** • Quantify peak construction traffic volumes, vehicle types, and expected timing/duration. • Identification of mitigation measures such as traffic management plans and haulage routes. **Operational Phase Considerations** • Expected vehicle movements during operation, including maintenance and emergency access needs. **Road Safety and Community Impacts** • Proposed measures to minimise community disruption due to increased vehicle movements. **Cumulative Impacts** • Consideration of other nearby developments or transport projects that may influence traffic conditions during construction and operation.	personnel, as described in Section 3.3.3. Further consideration of construction traffic impacts, including mitigation measures, will be considered in the EIS. • Operational traffic movements are expected to be minimal, due to the limited operational work force (Section 3.4). • Road safety and community impacts have been discussed in Section 6.2.2, and will be further considered in the EIS. • Cumulative impacts have been described in Section 6.12 • Section 6.2.3 outlines all relevant aspects of the TIA that will be investigated and assessed as part of the TIA and EIS.
Fire and Rescue NSW	Introductory letter, via email.	Response received. Feedback to be provided at the exhibition stage of EIS.	NA.

5.4 Consultation proposed during preparation of the EIS

5.4.1 Consultation actions

ACCIONA Energía will continue to consult with the community and stakeholders during the preparation of the EIS, in accordance with the *Undertaking Engagement Guidelines for State Significant Projects* (DPHI, 2024). The key interest groups and stakeholders identified in Section 5.1 will be engaged with during the EIS. Proposed methods of engagement specific to each of the identified stakeholders are presented in Table 5-2.

Table 5-2 Consultation actions for the EIS phase of the proposal

Stakeholder	Engagement methods	
Directly impacted stakeholders		
• Host landowners • Neighbours • Project neighbourhood	• Key messages • Project website • Media releases • Newsletters • Key stakeholder email updates • Printed/digital brochures and fact sheets • GIS maps and visualisations • Videos • Works notifications	• FAQs • Interactive mapping tool • Face-to-face meetings • Works specific notifications/apps • Phone calls • Community information sessions • Community pop-up events • Landowner meetings • Project workshops
Surrounding towns and regional centres		
• Wallabadah • Surrounding community	• Key messages • Project website • Media releases • Good news stories • Social media • Events/local shows • Newsletters • Printed/digital brochures and fact sheets • GIS maps and visualisations	• Videos • FAQs • Advertising • 24-hour hotline, email, web form • Interactive mapping tool • Community information sessions • Community pop-up events • Local community event participation • Community programs and sponsorships
First Nations stakeholders		
• NSW Aboriginal Land Council (NSWALC) • Nungaroo Local Aboriginal Land Council and interested Registered Aboriginal Parties • Local Aboriginal communities	• Key stakeholder email updates • Printed/digital brochures and fact sheets • Face-to-face meetings • Phone calls • Local community event participation • Stakeholder briefings • Community programs and sponsorships • Project workshops	

Stakeholder	Engagement methods	
NSW government authorities		
All government agencies as listed in Section 5.1	• Key stakeholder email updates • Government and shareholder relations • Face-to-face meetings	• Phone calls • Stakeholder briefings • Project Workshops
Local government		
• Liverpool Plains Shire Council • State and Federal members	• Key messages • Project website • Media releases • Good news stories • Social media • Newsletters • Key stakeholder email updates • Printed/digital brochures and fact sheets • Videos • Works notifications • FAQs	• Advertising • GIS maps and visualisation • Interactive mapping tool • Face-to-face meetings • notifications/apps • Phone calls • Stakeholder briefings • Stakeholder tours • Community programs and sponsorships • Project workshops

5.4.2 Elements of the proposal that may be shaped by the community

Feedback received from the community during consultation will be incorporated into refinement of the proposal wherever feasible and reasonable, including:

- Refinement of the proposal layout and location of key infrastructure
- Site access negotiations with host landowners and other relevant stakeholders
- Proposed transport routes will be negotiated with Transport for NSW, Local Councils and considering feedback from the community, in particular nearby neighbours.

5.4.3 Consultation channels

Engagement during the EIS will continue via the consultation channels established during the Scoping Report phase of the proposal (Table 5-3).

Table 5-3 Consultation channels

Channel	Details
Online hub	community.acciona.com.au/lindsays-gap-bess
Postal address	PO Box 24110, Melbourne VIC 3001
Office address	Level 8, 11 Eastern Road, Melbourne VIC 3000
Community helpline	1800 283 550
Email	lindsaysgap@acciona.com

5.4.4 Review and continuous improvement of engagement strategies

ACCIONA Energía are committed to ensuring consultation for the proposal is effective and meaningful. The *ACCIONA Energía Consultation Procedure* includes 12 objectives with associated metrics. Table 5-4 provides an example of key metrics that will be used to monitor, review, and adapt community engagement strategies over time to encourage active participation in the proposal.

Table 5-4 Example of engagement metrics

NO.	Objective	Metric
1	Ensure external stakeholders are clearly identified and their specific needs are understood and managed.	• Number of stakeholders • Level of information regarding stakeholders.
2	Ensure all stakeholders understand and are aware of the Project and work to increase acceptance of the project in the region.	• Number of stakeholders • Number and nature of engagement interactions.
3	Ensure the social licence to operate (reputation and trust) is built and maintained through the engagement of external stakeholders.	• Number and type of complaints • Number and nature of engagement interactions
4	Engagement and communication activities are transparent, equitable, and accessible, with adequate opportunities for stakeholders to comment or provide input.	• Number of stakeholders • Number and nature of engagement interactions • Input provided

An assessment of the engagement activities is tracking against the metrics is undertaken through various mechanisms including, but not limited to, the following:

- Consultation manager monthly report
- Six monthly Community and Stakeholder Engagement Plan reviews, including updated stakeholder analysis
- Sentiment polling
- Monthly web analytics report
- Complaints management process
- Complaints management process
- Engagement tracker.

5.5 Public exhibition of the EIS

Public exhibition of the EIS will be for a minimum of 28 days as stated in the EP&A Act. Advertisements will be placed in newspapers to advise of the public exhibition and where the EIS can be viewed, and details of proposed community consultation activities and information sessions.

Consultation activities during public exhibition of the EIS may include:

- Community information sessions
- Newsletter letterbox drop and email newsletters
- Information on project webpage
- Newspaper advertising
- Information available at local council offices

- Stakeholder meetings
- Local business engagement
- Government stakeholder engagement.

The extent and form of this consultation would be determined prior to the exhibition of the EIS.

5.6 Consultation during construction / operation

Should the proposal be approved, consultation and engagement would continue with the community and key stakeholders during construction and operation. In general, this consultation could involve:

- Pre-commencement “job-fairs” to source local labour, suppliers and subcontractors and maximise local content
- Consultation in accordance with statutory requirements
- Ongoing consultation with key stakeholders, local council and other government agencies
- Provision of regular updates to nearby neighbours, businesses and the community.

6 PROPOSED ASSESSMENT OF IMPACTS

6.1 Introduction

The identification of issues to be addressed in the EIS has been undertaken through a risk-based approach in accordance with the *State significant development guidelines – preparing a scoping report* (DPIE, 2022c) (SSD guidelines).

This process involved reviewing previous reports, undertaking desktop searches of relevant environmental databases, and a site reconnaissance (31 March to 3 April 2025) to identify key issues and sensitive areas. The SSD guidelines provide guidance on key factors to consider during scoping, including:

- Scale of the impact (severity, geographical extent and duration)
- Nature of the impact (direct, indirect, cumulative and perceived)
- Sensitivity of the receiving environment (existing regulations and guidelines, value to society and vulnerability to change).

A summary of the key environmental matters identified during the risk assessment is provided in Section 6.2 to 6.12. Other matters for consideration are identified in Section 6.13. In accordance with the SSD guidelines, the scoping summary table has been completed for the proposal and is included in Appendix A.

6.2 Traffic, Transport and Access

6.2.1 Existing Environment

An overview of the surrounding road network is shown in Figure 1-1.

The proposal area is bounded by New England Highway to the west. New England Highway is classified as a state road. Lindsays Gap Road is within one kilometre of the southern boundary of the proposal area and separated by vegetation. It is a sealed road with single lanes in each direction and is managed by Council.

ACCIONA Energía propose to upgrade an intersection on the New England Highway to allow access to the proposal site. This road would connect with an existing access track that travels from the western boundary of the proposal site to the centre of the disturbance footprint.

There are no bus stops, formal walking or cycling facilities within one kilometre of the proposal area.

6.2.2 Summary of Potential Environmental Impacts

Construction

Heavy vehicles would be required for the delivery of equipment and battery components, and for the removal of waste material resulting from construction activities.

Oversized and/or overmass (OSOM) vehicles may be required for the delivery of transformers and battery components during construction. OSOM vehicles would use designated routes approved by Transport for NSW (TfNSW) for both inbound and outbound journeys.

Together, the heavy vehicles and light vehicles used by construction staff would temporarily increase the traffic on the local network. This would be limited to the construction period only. A new access road, parking area and laydown area would be constructed within the proposal site. The exact location of these components would be finalised during the development of the EIS.

Operation

During operation, vehicle movements would be less frequent and would generally be associated with maintenance of the BESS. It is anticipated the BESS operation would largely be undertaken remotely, however, may require a small, permanent on-site staff presence. Overall, vehicle movements from staff are expected to be minor.

6.2.3 Proposed investigation and assessment

*A **detailed** level of assessment is proposed for traffic and transport in recognition of the requirement for intersection upgrades along the New England Highway to facilitate site access.*

A qualitative Traffic and Transport Impact Assessment will be carried out as part of the EIS and will include:

- A description of the proposed size of the construction workforce and forecast of construction traffic volumes during construction and operation
- A description of how, at a conceptual level, the proposal will meet the transport related objectives of relevant strategic plans, including the current and future capability of local and regional road infrastructure
- A cumulative impact assessment of traffic from nearby developments
- Details surrounding construction vehicle routes and movements including light vehicle traffic, heavy vehicle traffic, OSOM vehicle traffic and OSOM high-risk loads
- Details of any proposed road upgrades on the New England Highway (if required) to provide safe access to the proposal site
- Identification of ancillary infrastructure, such as Electricity Transmission Lines, that are crossing or near the state-classified road network or rail infrastructure within TfNSW remit
- Details of the internal road layout network, access and egress, pedestrian movements, and parking in accordance with Australian Standards.

Consultation will be carried out with TfNSW, relevant local councils, EnergyCo and other key stakeholders to inform the traffic and transport impact assessment.

The Traffic and Transport Impact Assessment will be prepared in accordance with all relevant guidelines, including:

- Guide to Traffic Management (Austroads, 2020)
- Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings (Austroads, 2019)
- TfNSW Guide to Transport Impact Assessment (TfNSW, 2024)

6.3 Noise and Vibration

6.3.1 Existing Environment

Given the proposal area's rural setting, the ambient noise environment is likely to be low and characterised by surrounding agricultural activities as well as road traffic along Lindsays Gap Road and the New England Highway.

Sixteen potential sensitive receivers were identified within four kilometres of the proposal area (refer Figure 1-2) Based on desktop searches, these comprise private dwellings and sheds.

6.3.2 Summary of Potential Environmental Impacts

Construction

Potential noise impacts are likely to relate to construction traffic and the operation of plant and equipment, including construction vehicles, cranes, and hand tools during construction. The extent of impact would vary according to the relationship of the construction works to the sensitive receiver location, and the nature of construction work at various stages of the construction process.

Construction work would mostly occur within the recommended standard hours for construction works being:

- Monday to Friday from 7am to 6pm
- Saturday from 8am to 1pm
- No work will occur on Sundays or public holidays.

Operation

The proposal would be capable of operating 24 hours per day, seven days per week, although in practice the proposal would operate on an intermittent basis. Operational noise would be associated with the inverters, transformers and the operation of the heating, ventilation and air conditioning (HVAC) installed on the BESS.

6.3.3 Proposed investigation and assessment

*A **detailed** level of assessment is proposed for noise and vibration in recognition of the potential impacts to nearby sensitive receivers.*

A qualitative Noise and Vibration Impact Assessment will be carried out as part of the EIS to assess both the construction and operational impacts. This will involve:

- Identification of the existing background noise levels, the types of construction activities likely to generate high noise and vibration levels, and the likely affected receivers
- Identification of potential operational noise and vibration impacts, with consideration of existing and future known land uses
- Assess construction noise impacts in accordance with the NSW Government Interim Construction Noise Guideline (ICNG)
- Assess operational noise impacts in accordance with the EPA's Noise Policy for Industry 2017 (NPfI)
- Assess traffic noise consistent with the EPA's Road Noise Policy (RNP)
- Strategies for noise mitigation and management during construction and operation.

The Noise and Vibration Impact Assessment will be prepared in accordance with all relevant guidelines, including:

- *Noise Policy for Industry* (Environmental Protection Authority, 2017)
- *Interim Construction Noise Guideline* (Department of Environment, Climate Change and Water, 2009)
- *NSW Road Noise Policy Guideline* (Department of Environment, Climate Change and Water, 2011)
- *Assessing vibration: A technical guideline* (Department of Environment, Climate Change and Water, 2006).

6.4 Biodiversity

6.4.1 Existing environment

A desktop assessment of biodiversity values within the proposal area was undertaken to inform the Scoping Report. This assessment included:

- Undertaking database searches from BioNet Atlas of NSW Wildlife (BioNet) (managed by DPE) and Protected Matters Search Tool (PMST) (managed by DCCEEW)
- Reviewing existing State Vegetation Type Mapping (SVTM) for the proposal area
- Determining a preliminary likelihood for threatened species to occur based on the biodiversity values mapped and historical observations for species.

The desktop assessments from BioNet and PMST indicates that there are 20 species listed as threatened under the EPBC Act that have a moderate or higher likelihood of occurring in the proposal site.

Field surveys were conducted by Arcadis' ecologists between 31 March and 3 April 2025. A Study area, covering approximately 490 hectares was surveyed. The 'Study area' is defined as the maximum proposed disturbance footprint of the BESS and supporting infrastructure (including a buffer area around all infrastructure), as well areas being considered as potential site access locations at the time the surveys being conducted (Figure 6-1).

The field investigations identified that the majority of the proposal site contains Category-1 (exempt) land, and exotic grassland. Some areas are recently sowed paddocks with *Avena sp.* (Oat) crops, while other areas are dominated by the fodder crop *Medicago sativa* (Lucerne), as well as two species of priority weeds: BlackBerry (*Rubus fruticosus spp. Agg*) and Sweet Briar (*Rosa rubiginosa*).

Native vegetation across the proposal site is generally restricted to areas along Wiles Gully, which have not been previously cleared, or patches of remnant trees across grazing paddocks. The following Plant Community Types (PCTs) were ground-truthed to occur in the proposal site:

- PCT 599 – Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
- PCT 433 – White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, BBS Bioregion

Additionally, native grasses *Bothriochloa macra* (Redleg Grass), *Sporobolus crebra*, and *Chloris truncata* (Windmill Grass), are present in the south-east corner of the proposal area.

During field surveys, White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland threatened ecological community (TEC), an EPBC Act listed community was found to be present within the proposal area. This community met the key diagnostic characteristics and minimum condition threshold to be considered a Matter of National Environmental Significance (MNES).

An overview of the PCTs and TECs within the proposal site is shown in Figure 6-1.

6.4.2 Potential impacts

Construction

Construction of the proposal would occur on land that is mostly cleared and generally consisting of derived grassland and native pasture. Vegetation removal may be required to accommodate the proposal. Potential construction impacts to biodiversity may include:

- Clearance of mature vegetation, grassland and nature pasture (native and exotic)
- Introduction and spread of noxious weeds and other invasive species
- Injury/mortality of fauna species during clearance.

Operation

Once the proposal is operational, there is unlikely to be any further impacts to biodiversity. There is a low possibility of fauna mortalities or injuries resulting from collisions with proposal infrastructure.

6.4.3 Proposed investigation and assessment

*A **detailed** level of assessment is proposed for biodiversity in recognition of potential impacts to threatened ecological communities within the study area.*

Under Part 4.7 of the EP&A Act SSD, the proposal requires that a Biodiversity Development Assessment Report (BDAR) be prepared to assess the impacts from removal of any vegetation identified as a TEC. The following government guidelines will be considered as relevant to inform the preparation of the BDAR:

- Commonwealth EPBC 1.1 Significant Impact Guidelines – Matters of National Environmental Significance (Commonwealth of Australia, 2013)
- Commonwealth Department of the Environment and Energy – Nationally Threatened Ecological Communities and Threatened Species Guidelines (various)
- Commonwealth Department of the Environment and Energy – Survey Guidelines for Nationally Threatened Species (various)
- Biodiversity Assessment Method (DPIE Environment, Energy and Science, 2020)
- NSW Biodiversity Offsets Scheme (Office of Environment and Heritage, 2017b)
- Threatened species survey and assessment guidelines at https://www.environment.nsw.gov.au/topics/animalsand-plants/threatened-species/about-threatened-species/surveys-and-assessments (various)
- Framework for Biodiversity Assessment (NSW Office of Environment and Heritage, 2014a) (although now superseded, relevant aspects may still be considered for the Environmental Impact Statement).

The BDAR will be based on a review of database searches, regional biodiversity mapping and any relevant existing site-specific reports, as well as site inspections and detailed targeted field surveys, as required. The assessment will be carried out for any threatened species, populations and ecological communities considered likely to be present on the proposal site.

The biodiversity assessment will include the following:

- Investigations to guide the design to avoid impacts on TECs and any other threatened species (or their habitat), as far as practicable
- Identification and description of the flora and fauna species, habitat, populations and ecological communities that occur, or are likely to occur
- An assessment of any direct and indirect impacts of the proposal on flora and fauna species, populations, ecological communities and their habitats, and Groundwater Dependent Ecosystems (GDEs)

- Assessment of the significance of the impacts of the proposal on species, ecological communities and populations, and GDEs listed under the Commonwealth EPBC Act, the BC Act and the Fisheries Management Act 1994 (FM Act) that occur or are considered likely to occur
- Identification of mitigation and offset measures, determined in accordance with the BAM and the EPBC Act Environmental Offsets Policy, if necessary.

Due to the presence of MNES at the proposal site, an EPBC referral will be prepared and submitted to the Commonwealth to confirm whether the proposal is a controlled action.

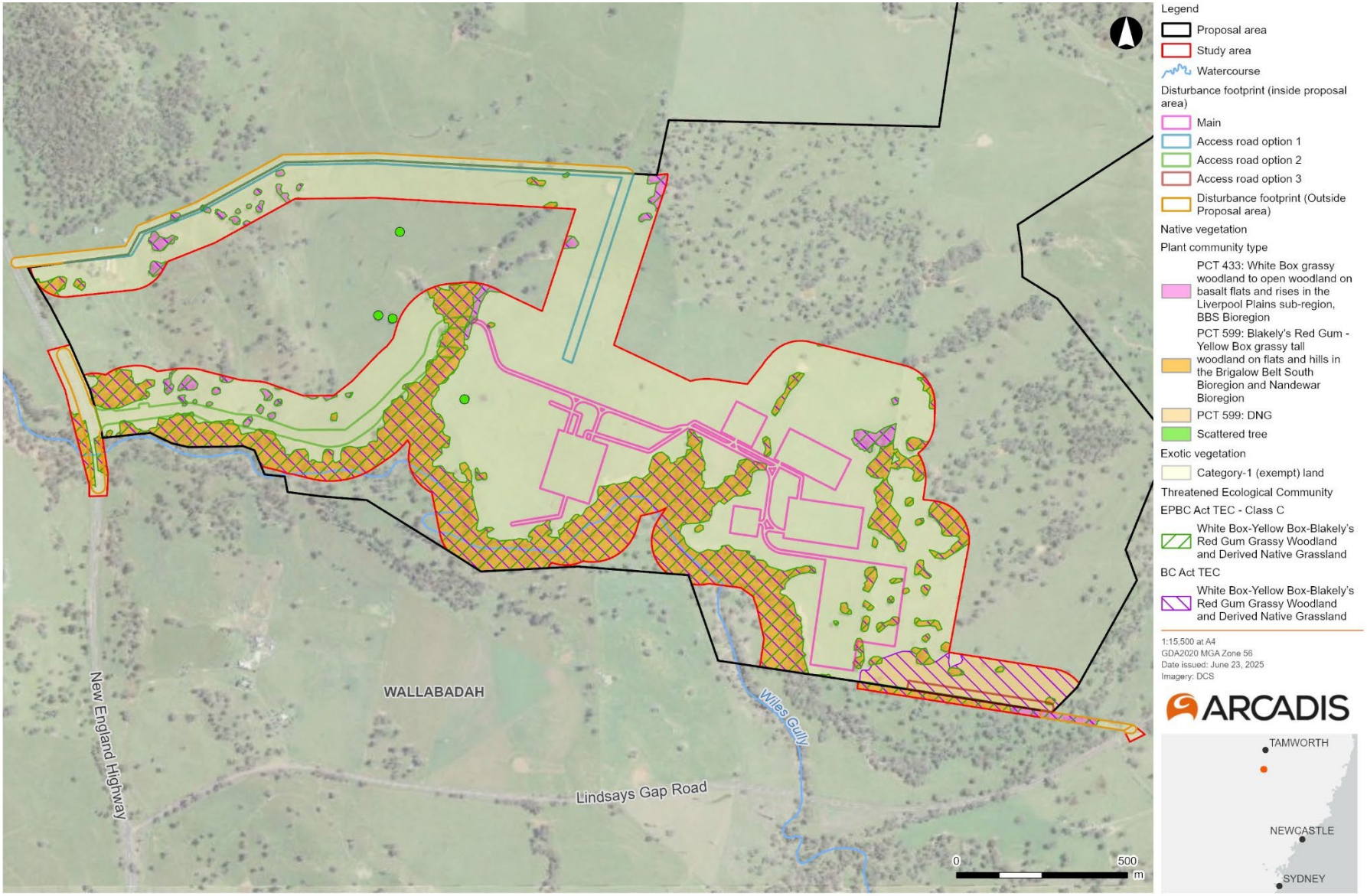


Figure 6-1 Preliminary mapping of PCTs and TECs within the study area

6.5 Aboriginal Heritage

6.5.1 Existing Environment

An extensive search of the Aboriginal Heritage Information System (AHIMS) database was undertaken on 09 May 2025 to identify known areas of Aboriginal significance in proximity to the proposal area.

The search identified 25 Aboriginal sites recorded within a 10 kilometre buffer of the proposal area (Figure 6-2). No Aboriginal sites were identified within the proposal area, and the nearest known Aboriginal archaeological site is located approximately three kilometres south of the proposed area. A review of these archaeological sites indicates that the dominant features are artefacts, grinding grooves, modified trees (carved or scarred) and stone quarries.

Current aerial imagery indicates that portions of the proposal site and its immediate surroundings have been cleared for agricultural and pastoral purposes. These findings were further confirmed during the site reconnaissance conducted from 31 March to 3 April 2025. This clearing has likely caused land disturbance to the soil profile and thus reduces the likelihood that Aboriginal sites or artefacts will be present within these areas of the proposal area. However, both aerial imagery and on-site observations indicate that other parts of the proposal site remain largely undisturbed and vegetated. This is particularly relevant where there is the presence of waterbodies, such as Wiles Gully that transects the south-west corner of the proposal area. Traditionally, waterways served as a gathering place for Aboriginal communities, suggesting a possibility of artefacts being found in these areas, and increasing the proposal site's archaeological potential.

Searches of the registers maintained by the National Native Title Tribunal indicate there is an active Native Title application for the Gomeroi People present across the proposal area (Tribunal No. NC2011/006). Consultation with the applicant will be undertaken as part of the EIS.

An Aboriginal heritage survey would be completed as part of the EIS, to identify any potential archaeological deposits that may contain Aboriginal objects. With appropriate management and implementation of mitigation measures, potential areas of constraint may be avoided.

6.5.2 Summary of Potential Environmental Impacts

Construction

Construction activities, such as vegetation clearing, establishment of hardstand areas, earthworks and levelling may lead to impacts and disturbances to Aboriginal heritage items. Overall, the potential for encountering Aboriginal archaeological sites within the proposal site is considered moderate (NGH 2024), however this would be verified during the EIS through site walkovers and consultation with Registered Aboriginal Parties (RAPs).

Operation

During operation, ongoing impacts to Aboriginal heritage are unlikely as ground disturbance would be restricted to the construction phase of the proposal.

6.5.3 Proposed investigation and assessment

*A **detailed** level of assessment is proposed for Aboriginal heritage as there is potential for Aboriginal cultural heritage sites to occur within the proposal area.*

An Aboriginal Cultural Heritage Assessment Report (ACHAR) will be prepared as part of the EIS and will include:

- Consultation and collaboration with Registered Aboriginal Parties, including a site walk over to ground truth identified Aboriginal heritage items and to identify any additional items or sites of Aboriginal cultural significance.
- Identification of the potential to disturb Aboriginal heritage during construction and operation
- Discussions with Knowledge Holders to identify potential harm to intangible Aboriginal cultural heritage values
- Identification of appropriate measures to avoid, minimise and/or mitigate potential impacts to Aboriginal heritage

The ACHAR will be prepared in accordance with all relevant guidelines, including:

- Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (Department of Environment, Climate Change and Water, 2010)
- Guide to investigating, assessing, and reporting on Aboriginal Cultural Heritage in New South Wales (Office of Environment and Heritage 2011)
- Aboriginal Cultural Heritage Consultation Requirements for Proponents (Department of Environment, Climate Change and Water 2010).

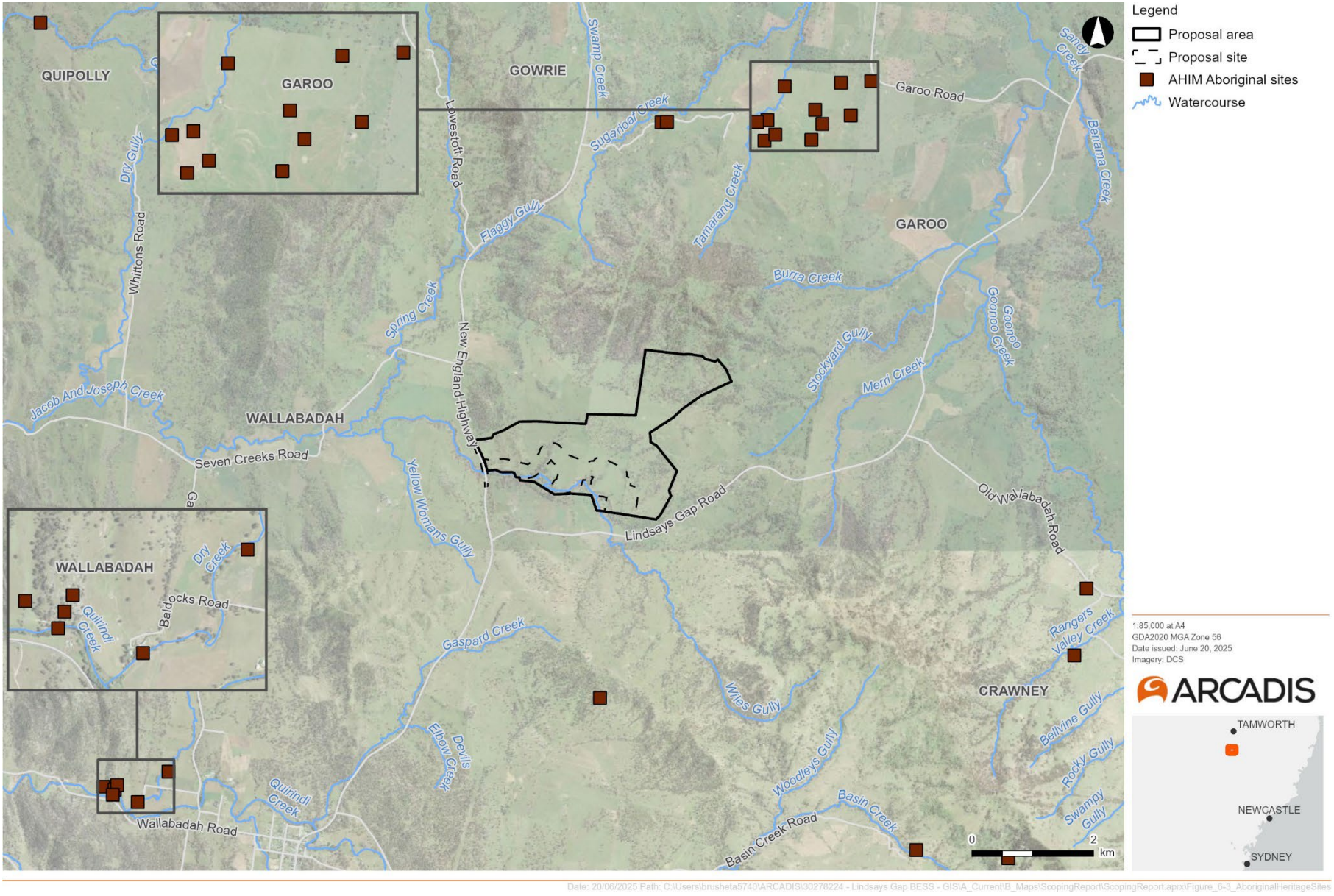


Figure 6-2 Location of AHIMs sites surrounding the proposal area

6.6 Non-Aboriginal Heritage

6.6.1 Existing Environment

A review of the Commonwealth Australian Heritage Database, the NSW State Heritage Inventory Transport and Sydney Waters' Section 170 Heritage and Conservation Registers found no national or state listed sites within, or in proximity, to the proposal site or surrounds.

Under the Liverpool Plains Shire LEP 2011, there are six locally listed heritage items within a 10 kilometre radius of the proposal site (Table 6-1, Figure 6-3).

Table 6-1 Locally listed heritage items within 10 kilometre radius of the proposal site

Heritage Item	Listing Number	Distance from proposal site
Wallabadah Station homestead	I078	5.5 kilometres
Wallabadah Station woolshed	I079	6.9 kilometres
St Anne's Catholic Church	I076	7.4 kilometres
Marshall MacMahon Hotel	I075	7.4 kilometres
Anglican Church of the Ascension	I074	7.5 kilometres
Wallabadah Cemetery and Common	I077	8.0 kilometres

6.6.2 Summary of Potential Environmental Impacts

Construction

Impacts to listed non-Aboriginal heritage sites are not anticipated due to the distance of the listed sites from the proposal site (Table 6-1) and the nature of the construction activities occurring largely on pre-disturbed agricultural land. There is a low likelihood that items of archaeological potential would be impacted during the construction phases of the proposal, however this would be verified during the EIS through further investigation and consultation.

Operation

During operation, ongoing impacts to non-Aboriginal heritage are unlikely as ground disturbance would be restricted to the construction phase of the proposal.

6.6.3 Proposed investigation and assessment

*A **standard** level of assessment is proposed for Non-Aboriginal heritage as there is a low likelihood for items of Non-Aboriginal heritage significance to occur within the proposal area.*

An assessment of potential impact to non-Aboriginal heritage from the construction and operation of the proposal will be carried out as part of the EIS. The assessment will consider the entire proposal area, and will include:

- Identification of listed items and areas of heritage significance near the proposal
- Assessment of potential direct and indirect impacts to listed heritage items
- Field surveys and preliminary heritage assessments of items with potential heritage significance (if required)
- Identification of appropriate measures to avoid, minimise and/or mitigate potential impacts to non-Aboriginal heritage

The assessment of potential impact to non-Aboriginal heritage will be prepared in accordance with all relevant guidelines, including:

- Commonwealth EPBC 1.1 Significant Impact Guidelines – Matters of National Environmental Significance (Commonwealth of Australia, 2013)
- Guidelines for preparing a Statement of Heritage Impact (DPE, 2023)
- NSW Heritage Manual (NSW Heritage Office and Department of Urban Affairs and Planning, 1996)
- Assessing Significance for Historical Archaeological Sites and Relics (NSW Heritage Branch, Department of Planning, 2009)
- Guidelines for the Management of Human Skeletal Remains under the *Heritage Act 1977* (NSW Heritage Office, 1998).

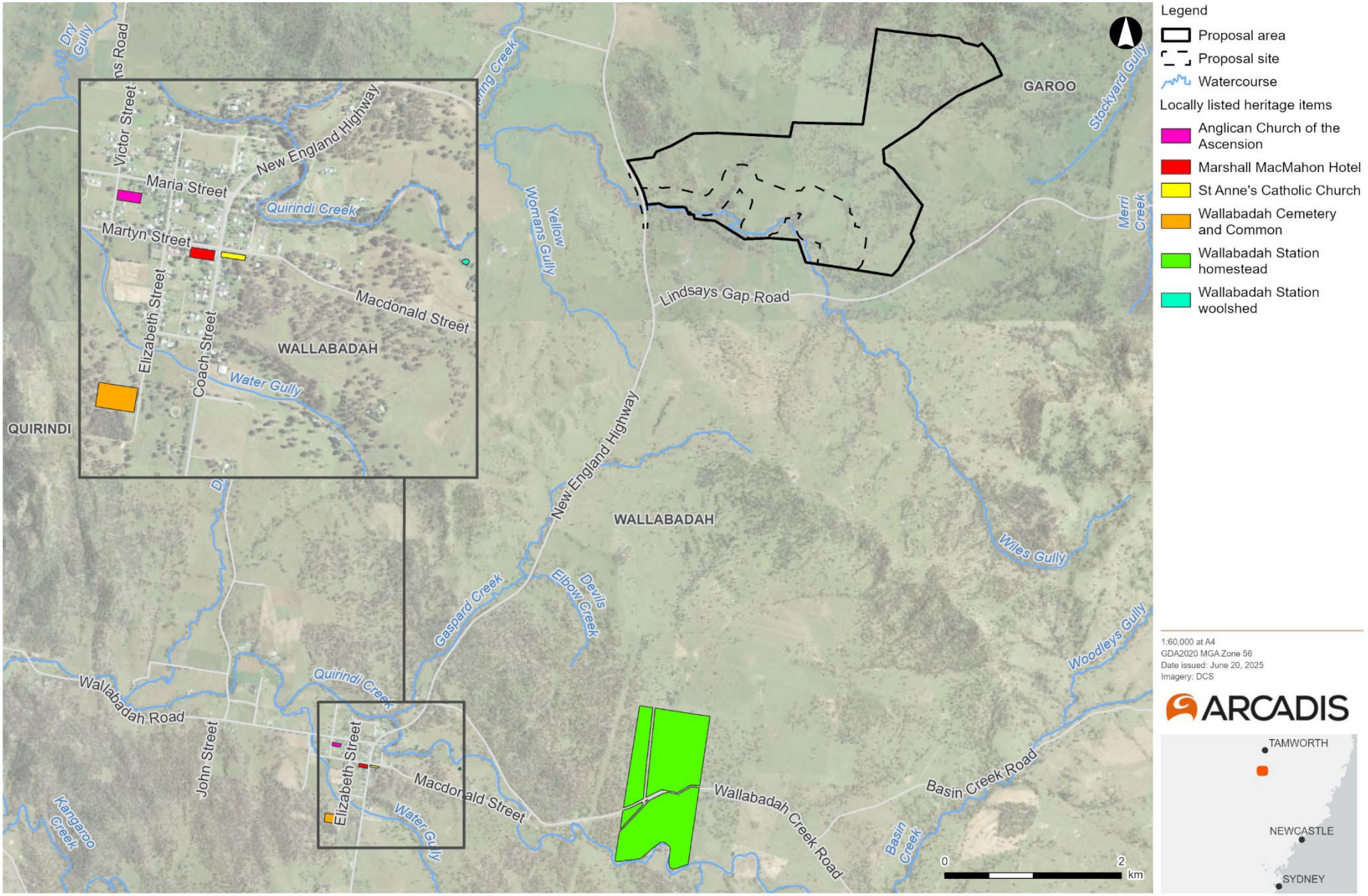


Figure 6-3 Location of non-Aboriginal heritage sites from the proposal area

6.7 Hazards and Risk

6.7.1 Existing environment

The proposal site is located in an agricultural area and near to existing electrical infrastructure. The proposal area is mapped as Category 3 Vegetation (medium risk) bushfire prone land (eSpatial viewer, 2025) (Figure 6-4).

6.7.2 Potential impacts

Construction

The following hazards and risks have the potential to occur during construction of the proposal:

- Accidental release of chemicals, fuels and materials associated with their onsite storage, use and transport, and the resultant impacts on construction workers and the environment.
- Disturbance of contaminated soil
- Hot works, such as welding, igniting surrounding vegetation and causing a bushfire.
- Neighbouring properties may be impacted by hazards and risks from the proposal, should the hazard spread from the proposal area.

Operation

While rare, the installation, commissioning and operation of a Lithium-ion BESS can present increased hazards and risks associated with overheating, fire, hazardous chemicals and gas emissions.

The design and installation of the battery system would be undertaken in accordance with relevant Australian standards and guidelines and would be operated in accordance with the manufacturers requirements. Appropriate fire suppression apparatus and installations would be incorporated into the design.

The BESS infrastructure involves electricity powerlines, substations, transformers and other electrical sources such as common electrical appliances and wiring, which all emit electric and magnetic fields (EMF). The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) considers that for substations and transformers, the magnetic fields at distances of five to ten metres away are generally indistinguishable from typical background levels in the home.

Given the proposal is located within medium risk bushfire prone land, there is a risk of fire propagating from the proposal. Based on the preliminary environmental assessment undertaken for the proposal, the risk is considered manageable with appropriate mitigation measures (NGH, 2024). The risk of fire propagation will be managed through the design of the BESS and establishment of an Asset Protection Zone (APZ).

6.7.3 Proposed investigation and assessment

*A **detailed** level of assessment is proposed for Hazards and Risk to assess the potential risks associated with the BESS.*

The SEPP (Resilience and Hazards) 2021 and The Department of Planning (2011) guideline *"Applying SEPP 33"* provide provisions for assessing potentially hazardous and offensive developments. In accordance with both, it is required that any development application to carry out development for the purpose of a potentially hazardous industry must prepare a preliminary hazard analysis (PHA).

Preliminary Hazard Analysis

The EIS for the proposal will include the preparation of a PHA which qualitatively discusses the potential operational risks of the proposal with regards to the potential risk to people, property and the biophysical environment that may occur as a result of the accidental release of potential hazardous material and energy.

The PHA would be consistent with the *Multilevel Risk Assessment Guideline* (DPIE, 2011a) and the *Hazardous Industry Planning Advisory Paper No.6 – Hazard Analysis* (DPIE, 2011c) and will also consider current standards and codes and verify separation distances to on-site and off-site receptors to prevent fire propagation and compliance with *Hazardous Industry Advisory Paper No. 4, Risk Criteria for Land Use Safety Planning* (DPIE, 2011b).

Dangerous goods

Lithium-ion batteries (a Class 9 dangerous good) are the preferred battery type for the proposal, and therefore, if selected, would be stored on-site. There is no threshold quantity for the storage of Class 9 Dangerous Goods in the *Applying SEPP 33 Guideline*. If flow batteries are selected, electrolyte storage tanks containing Class 8 corrosive liquids would be stored on-site. The threshold inventory for Class 8 Packing Group II DGs is 25 tonnes in the Applying SEPP 33 Guidelines.

Preliminary risk screening would be undertaken in accordance with the *SEPP (Resilience and Hazards) 2021*.

Health risks

Health risks associated with electromagnetic fields (EMF) from grid connection infrastructure would be assessed against the *International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields*.

Bushfire

A separate Bushfire Risk Assessment will be prepared for the EIS. This assessment will be prepared with reference to *Planning for Bushfire Protection 2019* (NSW RFS, 2019) and the National Construction Code (NCC). The assessment would include an assessment of hazardous vegetation formations within 140 metres of the development, the effective slope of the land surrounding the Project and fire weather (i.e. fire danger index (FDI)) relevant to the proposal.

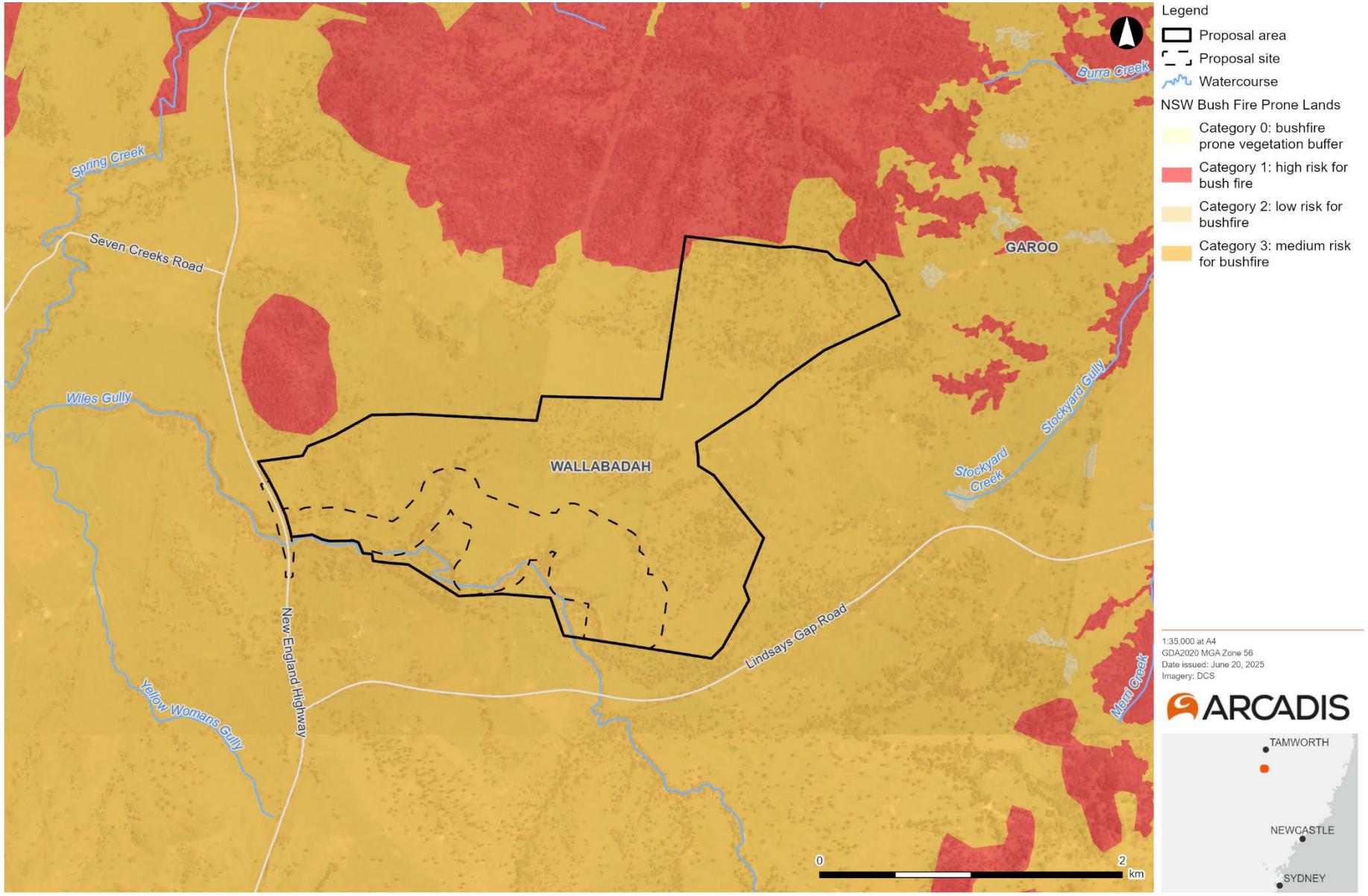


Figure 6-4 Bushfire Prone Land

6.8 Landscape and Visual

6.8.1 Existing Environment

The existing landscape character of the proposal site is rural in nature. The closest residential land zone is located seven kilometres south-west of the proposal site in Wallabadah (Figure 1-1).

The surrounding rural landscape of the proposal site is predominantly cleared farmland and patches of vegetation with undulating hills, gullies and creek lines. A portion of the landscape has been heavily modified through historical vegetation clearing, pasture improvement, livestock grazing and cropping. However, patches of native woodland vegetation exist throughout the proposal area, particularly surrounding Wiles Gully and where there are creek lines and ephemeral drainage channels. These trees and the topography of the proposal area provide visual screening and largely reduce the impacts to sensitive receivers and road users south and west of proposal area.

6.8.2 Summary of Potential Environmental Impacts

Construction

Visual amenity impacts are expected to be most significant during construction of the proposal. Impacts may relate to site establishment works, construction vehicle movements and related traffic impacts, and the presence and use of construction equipment.

Road users of New England Highway and Lindsays Gap Road would experience visual impacts, however these are expected to be temporary and minor in nature as road users drive past the proposal site.

Operation

The proposal site, specifically the proposed access road, may be visible from New England Highway. This highway setting is characterised by rural landscape and driveways to private properties. Views of the proposal site from road users would be brief and transient in nature, therefore resulting in low sensitivity.

There is potential that the sensitive receiver south of the proposal site (Figure 1-2) would be able to see the Transgrid switching station and transmission lines connecting to the existing Tamworth-Muswellbrook (Line 88). As the Tamworth-Muswellbrook (Line 88) transmission towers already exist in the landscape, this impact is considered low.

The proposal would represent a minor change in the agricultural landscape character and visual amenity of the area. Landscaping and screening vegetation, if required, would be identified to soften potential impacts and considered during the development of the EIS

6.8.3 Proposed investigation and assessment

*A **detailed** level of assessment is proposed for Landscape and Visual Amenity.*

A landscape character and visual assessment would be produced as part of the EIS in accordance with the *Technical Supplement for Landscape and Visual Impact Assessment* (DPE, 2022a) and *Guideline for Landscape Character and Visual Impact Assessment, Environmental impact assessment practice note EIA-N04* (TfNSW 2020), as appropriate.

This assessment will include:

- A high-level description of the visual character and qualities of the proposal area
- Identification of the types of visual impacts which may occur due to construction and operation

- Identification of appropriate mitigation and management strategies.

6.9 Land Use

6.9.1 Existing Environment

The proposal area is privately owned property and is land zoned RU1 Primary Production (Figure 6-5). The land within the proposal area has historically been used for agricultural purposes including livestock grazing and cropping. Aerial imagery and observations made during the site reconnaissance between 31 March and 3 April 2025 indicate that the prosed site is primarily cleared land used as paddocks for cattle. There is used land and patches of vegetated land along the southern boundary of the proposal area.

Land and soil capability mapping from DPHIs eSPADE database indicates the proposal site includes Class 4 (Moderate to severe limitations for some land uses that need to be consciously managed to prevent soil and land degradation), Class 5 (Severe limitations for high impact land management uses such as cropping, and is generally more suitable for grazing), and Class 6 (Very severe limitations) in (Figure 6-5).

6.9.2 Potential Environmental Impacts

Construction

Construction of the proposal involves disturbance to the existing land use types and changing their land use from agricultural to energy. Impacts of construction on land use are expected to be minimal as the disturbance footprint has been designed to be restricted to a small portion of the overall proposal area and agricultural land uses can continue in the areas surrounding the proposal. Therefore, the land not involved in the proposal site can continue to be used as agricultural land and would not be impacted by construction.

Operation

During operation, land within the disturbance footprint would continue to be used for energy purposed and would not return to being agricultural land. No additional impacts to land use are expected to occur during operation of the proposed project once construction is completed.

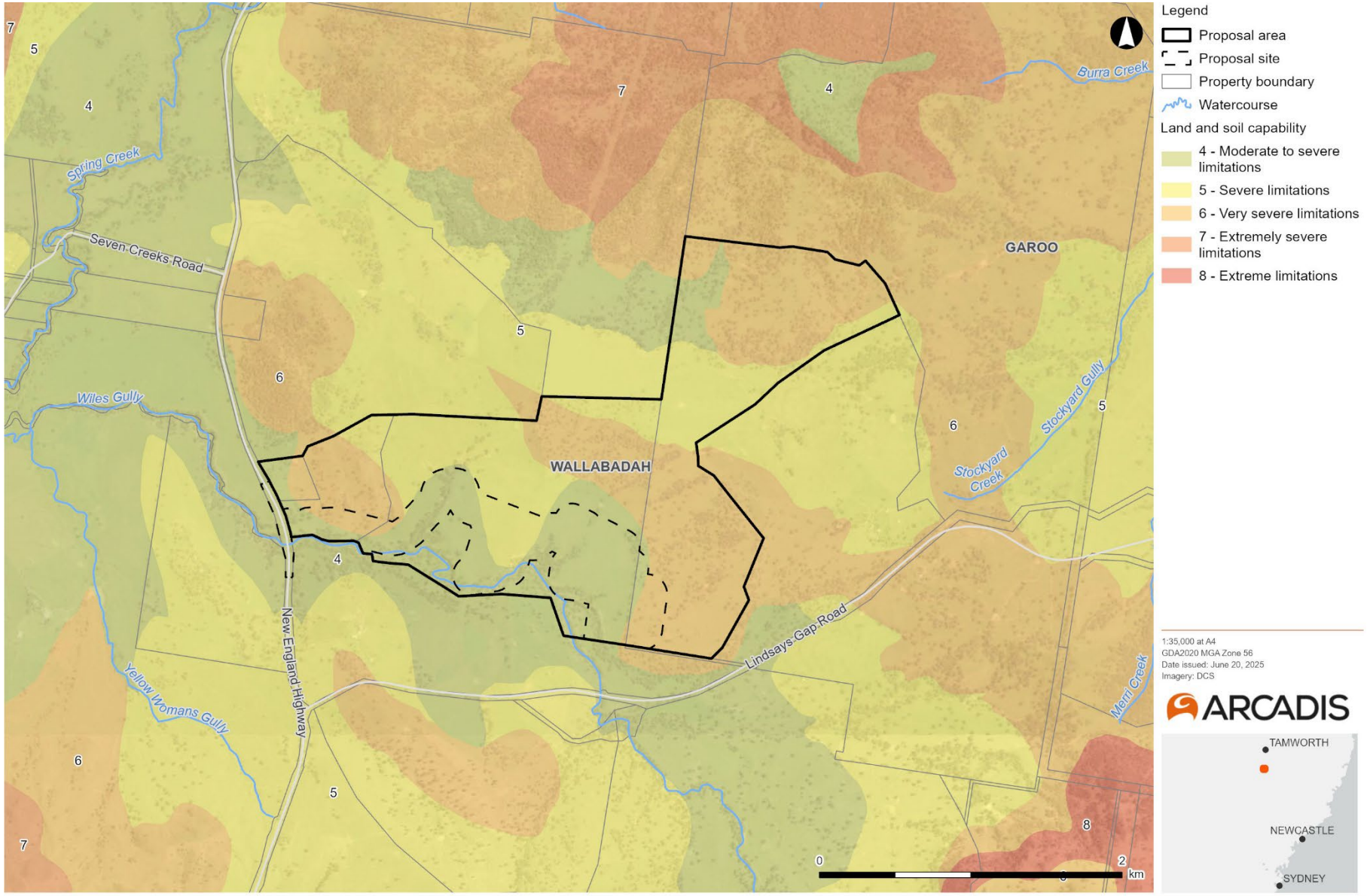


Figure 6-5 Land and soil capability mapping of the proposal site

6.9.3 Proposed investigation and assessment

*A **standard** level of assessment is proposed for Property and Land Use is proposed to assess the impact of the proposal.*

A property and land use assessment will be carried out as part of the EIS. The assessment will involve:

- Review of key planning policy, strategy and relevant controls and identification of strategic planning context and future land use priorities
- Identification if potential direct impacts during construction and operation to land use and property, including on agricultural resources and production of the land and its surrounds
- Identification of the compatibility of the proposal with the surrounding land uses
- Land Use Conflict Risk Assessment in accordance with the Department of Primary Industries *Land Use Conflict Risk Assessment Guide.*

6.10 Soil and Contamination

6.10.1 Existing Environment

The soil on-site is expected to be highly disturbed in nature due to the areas' history of livestock grazing, however, appears to be generally stable due to the existing grass ground cover.

A search of the NSW EPA contaminated land records on 14 March 2025 identified no contaminated sites within the vicinity of the proposal area and broader Liverpool Plains Shire Council LGA. There are seven sites listed on the National Pollution Inventory (NPI) within the Liverpool Plains Shire Council LGA, however the closest listed site is located approximately 25 kilometres west of the proposal site. There is no mapped Naturally Occurring Asbestos (NOA) across the Involved Lands. Given the distance between the above locations and the proposal site, impacts from these contaminated sites are considered highly unlikely. There are no mapped saline soils or acid sulfate soils in the proposal area.

Although no contaminated sites are mapped in or adjacent to the proposal site, agricultural practices such as the use of pesticides in pest plant spraying and cattle/sheep dips, and chemical and fuel storage may have affected soils within the proposal site. This will be verified as part of the EIS, and if present, may require additional remediation and/or contamination controls.

6.10.2 Potential Environmental Impacts

Construction

Construction would result in exposure of the natural ground surface and subsurface through the removal of vegetation and earthworks which may increase the likelihood for soil erosion to occur. During the excavations for the BESS there is a possibility of unearthing contaminated material. It is considered unlikely that acid sulfate soils would be encountered during construction. Impacts related to contamination would be verified during the EIS and are considered unlikely to be significant.

Operation

There is limited potential for impacts to soils during operation of the proposal, as there would be no ongoing ground disturbance. Operation of the proposal has the potential for spills and leaks from operating machinery resulting in contamination of soil and groundwater if not contained.

6.10.3 Proposed investigation and assessment

*A **standard** level of assessment is proposed for contamination to assess the potential impacts associated with the proposal.*

A Preliminary Site Investigation (PSI) will be conducted as part of the EIS to assess the potential contamination impacts associated with construction and operation of the proposed project. The assessment will involve:

- A desktop review of available data and existing reports relating to potential contamination of the proposal area
- Description of the project site conditions, as they relate to contamination
- As assessment of potential contamination impacts to sensitive receivers, which could include environmental and human health receptors
- Identification of mitigation measures, including whether any additional site investigations are required

The PSI and subsequent assessments, where required, will be prepared in accordance with the relevant guidelines, including:

- Acid Sulfate Soils Assessment Guidelines (Acid Sulfate Soils Management Advisory Committee, 1998)
- National Environment Protection (Assessment of Site contamination) Measure (National Environment Protection Council, 2011)
- Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (Environment Protection Authority, 2015).

6.11 Water Quality, Hydrology and Flooding

6.11.1 Existing Environment

The proposal site is located at an elevation of between around 600 metres Australian Height Datum (AHD) and 700 metres AHD, with a gradient sloping towards the south-west of the proposal. Wiles Gully travels in a westward direction along the southern boundary of the proposal site and is characterised by slow flowing water even after large quantities of rainfall.

The proposal site is in close proximity to several water sources. The closest waterway to the proposal is Wiles Gully which transects the south-west corner of the proposal area. Wiles Gully is a perennial first-order stream according to Strahler Stream Order, that travels in a westward direction and connects to Jacob and Joseph Creek. The gully is characterised by a gravel bed with portions of rocky substrate and steep banks on either side. Based on observations from field investigations conducted in April 2025, Wiles Gully is a slow flowing water body, even after large quantities of rain in previous weeks. Additionally, there are approximately five artificial farm dams across the proposal area that are typical of those used for livestock grazing. On the eastern boundary of the proposal area within Lot 31, there is natural watercourses and topography that indicates historically water had flowed across site.

Desktop studies have identified there are no aquatic groundwater dependent ecosystems (GDEs) located within the proposal site (BOM Groundwater Dependent Ecosystems Atlas, 2025). The closest is Quirindi Creek, located seven kilometres south. There are however identified terrestrial GDEs mapped across the proposal area (Figure 6-6).

6.11.2 Potential impacts

Due to limited publicly available data about flooding in Liverpool Plains Shire LGA, potential impacts of the proposal have been extrapolated from observations made on site in April 2025.

Construction

Excavation and site levelling works for the construction of the BESS are expected to be minimal given the low relief of the proposal site. As such, potential impacts to groundwater and hydrology are expected to be low. Construction has the potential to impact surface water quality of Wiles Gully through the pollution of runoff contaminated with sediment and/or fuels and other hazardous material. Stormwater and erosion and sediment runoff controls will be implemented to mitigate impacts to water quality during construction.

Operation

Given the elevation of the proposal site above Wiles Gully and absence of small water bodies within the proposal location of the batteries and associated infrastructure, the impacts from flooding are not anticipated. Impacts to water quality during operation are also not anticipated as the substation and BESS infrastructure would be installed with appropriate management strategies to contain any accidental leaks and contaminated runoff.

6.11.3 Proposed investigation and assessment

*A **standard** level of assessment is proposed for water quality, hydrology and flooding.*

An assessment of the potential impacts on water quality, hydrology and flooding during construction and operation will be carried out as part of the EIS. This will involve the following:

- Identification of water quality, hydrology and flooding impacts that could occur during construction and operation
- Identification of impacts to waterfront land, such as Wiles Gully during construction and operation
- Description of the waste usage during construction and operation
- Identification of appropriate mitigation and management strategies.

The water quality, hydrology and flooding assessment will be prepared in accordance with all relevant guidelines, including:

- Managing Urban Stormwater: Soils and Construction – Volume 1 (Landcom, 2004)
- Australian and New Zealand guidelines for fresh and marine water quality (ANZECC & ARMCANZ, 2000)
- Guidelines for Groundwater Protection in Australia (Commonwealth of Australia, 2013)

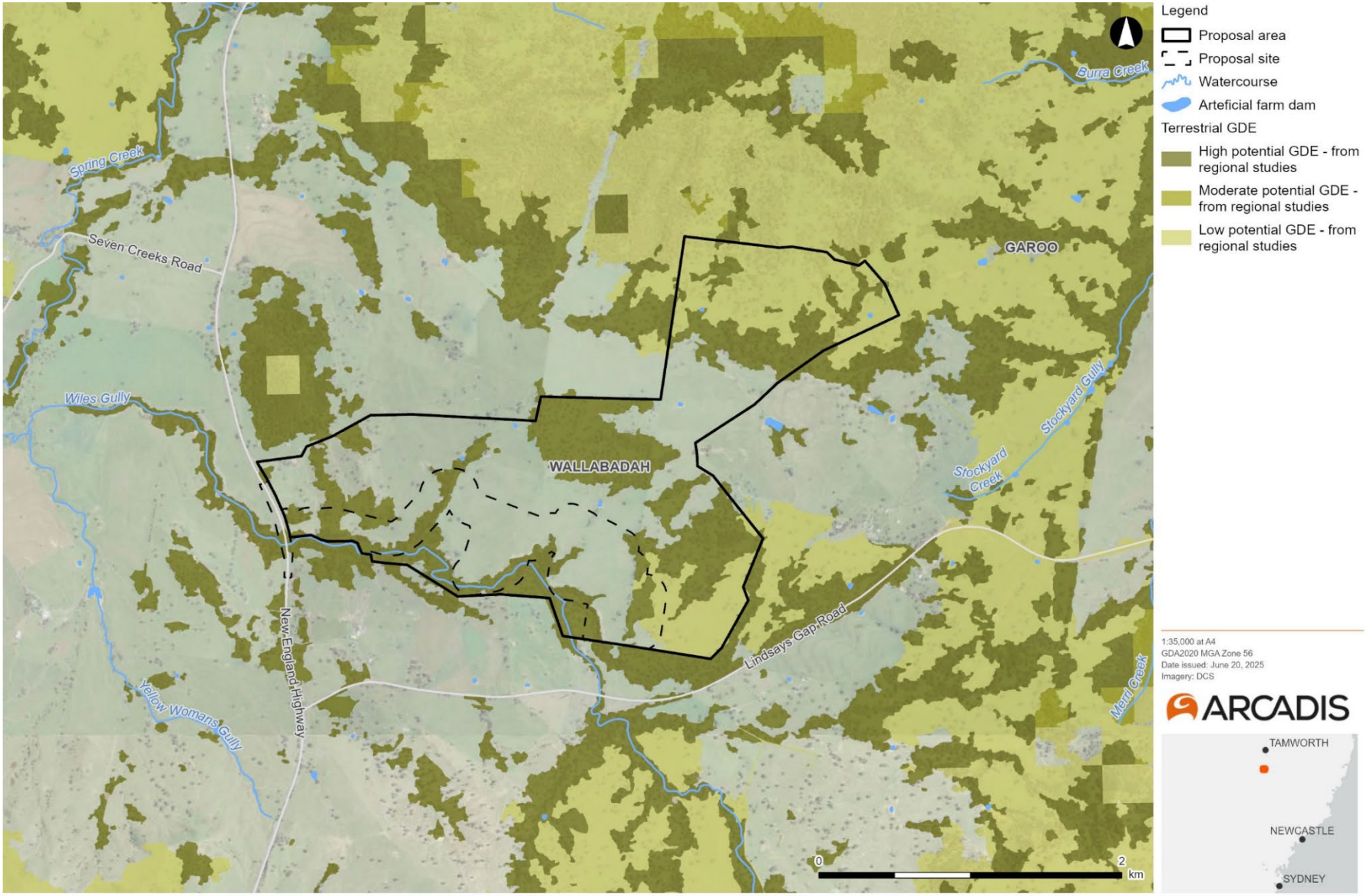


Figure 6-6 Water quality, hydrology and flooding

6.12 Cumulative impacts

The *Cumulative Impact Assessment Guidelines (CIA Guidelines) for State Significant Projects* (DPE, 2022b) provides a framework for assessing and managing project-level cumulative impacts. A Cumulative Impact Assessment will be undertaken in accordance with the CIA Guidelines as part of the EIS.

6.12.1 Scope of the assessment

In accordance with the CIA Guidelines (DPE, 2022b), the proposal has considered past, present and reasonably foreseeable future SSD projects, and only included the types of development specified in Section 3.4 of the CIA Guidelines.

The CIA will focus on the construction and operational impacts of the proposal in conjunction with other nearby projects, including traffic routes, noise and visual amenity, and social impacts such as workforce availability, workers accommodation and construction fatigue.

6.12.2 Study area

The initial CIA study area encompassed a 30 kilometre radius of the proposal area; however, cumulative impacts exist at different scales. The study area for traffic related cumulative impacts will consider surrounding developments with potentially overlapping construction periods that would utilise the New England Highway within the vicinity of the proposal. Social and economic cumulative impacts will focus on developments that rely on the workforce and accommodation within the Liverpool Plains Shire Council LGA and surrounding LGAs.

A study area of 2-3 kilometre radius of the proposal area will be adopted to assess the potential noise and visual amenity cumulative impacts associated with nearby projects, while other aspects such as ecology, heritage and hydrology will be limited to within the proposal area.

6.12.3 Time period

The proposal is anticipated to commence construction in 2027, with operation to commence from 2028 (refer to Chapter 3). The potential cumulative impacts associated with the staging of the proposal are outlined in Table 6-2.

Table 6-2 Cumulative impacts and timeframes

Proposal phase	Estimated timeframe	Likely scale of impact	Duration of impact	Potential cumulative impacts
Assessment	2025-2027	Minor	Temporary	• Social and economic
Approval	2027	Minor	Temporary	• Social and economic
Construction	2027 - 2028	Moderate	Temporary	• Social and economic • Visual amenity • Noise • Traffic and transport
Operation	2028-2053	Minor	Ongoing during operations	• Visual amenity
Decommissioning	Post 2053	Moderate	Temporary	• Social and economic • Visual amenity • Noise • Traffic and transport

6.12.4 Projects to assess

An initial search of the DPHI Major Projects Register for the Liverpool Plains Shire LGA for projects seeking approval or approved in the last 18 months was conducted to identify potential sources of cumulative impacts with the proposal. A search was also conducted of the development applicates register of the Liverpool Plains Shire Council. Projects in the vicinity of the proposal that have the potential to cause cumulative impacts to have been summarised in Table 6-3.

6.12.5 Assessment approach

The CIA carried out as part of the EIS would consider the following projects, based on their expected overlap in construction periods and their distance from the proposal site:

- Wallabadah BESS
- New England REZ transmission project
- Garoo Solar Farm and BESS

A summary of the cumulative impacts to be assessed during the EIS, in accordance with the DPHI CIA guidelines is summarise in Table 6-4.

6.12.6 Key uncertainties

The key uncertainties associated with the CIA are the timeframes of the nearby SSDs, and the potential for overlap of the construction phases. To ensure a well-rounded approach to the cumulative impacts of the proposal, the CIA will assume all the projects could be in construction simultaneously.

Table 6-3 Projects with potential to cause cumulative impacts

Project	Description	Proximity to proposal site	Status	Potential cumulative impact
Wallabadah Battery Energy Storage System (SSD-078391212)	A 400MW/800MW hours (MW hours) in the LGA of Tamworth Regional Council. SEARs were issued in December 2024, and the project is in the process of preparing an EIS. Construction is expected to commence in Q3 2026, with operations expected to commence mid-2028.	Within 1 kilometre	Preparing EIS	• Hazards and risk • Traffic and transport • Noise • Visual amenity • Social and economic
New England REZ Transmission Project	Development of new transmission lines between Bayswater Power Station Substation and the New England REZ, new energy hubs within the New England REZ, and ancillary infrastructure. The project aims to be operational by 2033.	Revised transmission corridor will come within 5 kilometres.	Preparing EIS	• Traffic and transport • Noise • Social and economic
Garoo Solar Farm and BESS (SSD-79747209)	A 155 MW Solar Farm and 360 MW / 1,440 MWh BESS. SEARs were issued in March 2025, and the project is in the process of preparing an EIS. Construction is expected to commence in Q4 2026, with operations commencing in 2028.	Within 6 kilometres	Preparing EIS	• Traffic and transport • Noise • Visual amenity • Social and economic
Middlebrook Solar Farm (SSD-10455)	A 320 MW solar farm with BESS of up to 780MWh AC and associated infrastructure, within the Tamworth Regional Council LGA. The EIS was submitted in June 2023 and Development Consent was granted in November 2024. Construction is expected to take 21-30 months.	Within 20 kilometres	Approved	• Social and economic
Lambruk Solar Project (SSD-67436209)	A PV solar facility with a capacity of approximately 500 megawatt (MW) (direct current [DC]) and 300 MW (alternating current [AC]) and a BESS with an indicative capacity of up to 300 MW / 1,200 megawatt hour (MWh).	Within 30 kilometres	Preparing EIS	• Social and economic
Hills of Gold Wind Farm (SSD-9679)	70 wind turbines, BESS and grid connection, within the Liverpool Plains Shire LGA. The EIS was submitted in November 2020 and Development Consent was granted in September 2024. Construction is expected to take 18-24 months.	Within 30 kilometres	Approved	• Social and economic

Table 6-4 Cumulative impact assessment scoping summary table

Project	Potential cumulative impacts				
	Traffic and transport	Visual amenity	Noise	Social and economic	Hazards and risk
Wallabadah BESS	***Standard Assessment*** Potential overlap in traffic and transport impacts between this project and the proposal. Further assessment required.	***Standard Assessment*** Potential overlap in visual amenity impacts between this project and the proposal. Further assessment required.	***Standard Assessment*** Potential overlap in noise impacts between this project and the proposal. Further assessment required.	***Standard Assessment*** Potential risk of cumulative social impacts between this project and the proposal. Further assessment required.	***Standard Assessment*** Potential risk of cumulative hazard and risk impacts between this project and the proposal. Further assessment required.
New England REZ	***Standard Assessment*** Potential overlap in traffic and transport impacts between this project and the proposal. Further assessment required.	***No assessment required*** No overlap in visual amenity impacts between this project and the proposal.	***No assessment required*** No overlap in noise impacts between this project and the proposal.	***Standard Assessment*** Potential risk of cumulative social impacts between this project and the proposal. Further assessment required.	***No assessment required*** No overlap in hazard and risk impacts between this project and the proposal.
Garoo Solar Farm and BESS	***Standard Assessment*** Potential overlap in traffic and transport impacts between this project and the proposal. Further assessment required.	***No assessment required*** No overlap in visual amenity impacts between this project and the proposal.	***No assessment required*** No overlap in noise impacts between this project and the proposal.	***Standard Assessment*** Potential risk of cumulative social impacts between this project and the proposal. Further assessment required.	***No assessment required*** No overlap in hazard and risk impacts between this project and the proposal

6.13 Other Impacts

This section provides an overview of other environmental matters for those environmental aspects that, based on existing information and description of the proposal, would require limited or no further assessment in the EIS (Table 6-5).

Table 6-5 Other impacts

Environmental matter	Existing environment	Potential impacts	Proposed investigation and assessment
Social and Economic	The proposal area is situated rurally within the Liverpool Plains Shire LGA. Wallabadah, the closest residential town, is located seven kilometres south-west of the proposal area, and Tamworth is located 42 kilometres to the north. According to 2021 Census data (BAS, 2021), Wallabadah has a population of 382, with a median age of 56. The major industries of employment in Wallabadah and surrounding regional towns within the Liverpool Plains Shire LGA are beef cattle farming and grain-sheep or grain-beef cattle farming. A Social Impact Assessment Scoping Worksheet has been prepared in accordance with the Social Impact Assessment Guideline and is included in Appendix A.	Potential socio-economic impacts would be most significant during construction of the proposal. This may have positive benefits including local employment opportunities, and economic benefits for businesses stemming from employment and purchase of construction supplies. Negative impacts may include temporary traffic impacts to users of the local road network, dust and noise for local receivers, visual impacts relating to changes in the rural landscape, and potential cumulative impacts with the construction of neighbouring BESS facilities. Sensitive receivers within a four kilometre radius of the proposal have been identified and are shown in Figure 1-2. Once operational, the BESS would largely be operated remotely, however there are potential employment opportunities for the local workforce. The proposal also provides a range of long-term economic benefits contributing to a more resilient, efficient, and sustainable energy system.	*A **standard** level of assessment is proposed to assess the social and economic impacts of the proposal during the EIS.* A social impact assessment will be carried out as part of the EIS in accordance with the Social Impact Assessment Guideline (DPIE, 2023). This will involve a description of the existing socio-economic profile for the communities and businesses surrounding the proposal, and assessment of the potential impacts of the proposal on the socio-economic values of the study area. Additionally, the assessment will include the identification of appropriate management and mitigation measures including measures to enhance the proposal's benefits and to avoid, manage or mitigate its potential impacts. Consideration of a voluntary planning agreement, community benefit sharing scheme or negotiated agreement with landowners and / or the Liverpool Plains Shire Council will be undertaken through preparation of the EIS.

Environmental matter	Existing environment	Potential impacts	Proposed investigation and assessment
Air Quality	A review of the Energy National Pollutant Inventory (Department of Environment and Energy) was undertaken to identify types and number of emissions within Liverpool Plains Shire Council for the 2022-2023 reporting year. Air quality in the area is expected to be characteristic of a typical industrial area and affected by the agriculture services and road network emissions.	Construction activities may act as a source of dust locally from movement of construction vehicles and equipment on unsealed surfaces, vegetation clearing, and ground disturbance through excavations and earthworks. However, dust impacts are considered minor and temporary in nature and therefore unlikely to be significant given the current local ambient air quality. Operation of the proposal is not expected to impact air quality.	*A **standard** level of assessment is proposed to assess the air quality impacts of the proposal during the EIS.* A qualitative desktop assessment of air quality impacts will be undertaken as part of the EIS. The identification of feasible and reasonable measures to mitigate impacts would be included.
Waste Management	N/A	The following waste streams could potentially be generated by construction of the proposal: • Spoil material from general earthworks and excavation activities • Sediment laden and/or potentially contaminated wastewater, sewage and greywater from dust suppression, washdown activities and staff amenities • General construction waste (including concrete, scrap metal, plasterboard, cable and packaging materials) from general construction activities • Adhesives, lubricants, waste fuel and oil, engine coolant, batteries, hoses and tyres from the maintenance of construction plant, vehicles and equipment • Putrescibles, paper, carboard, plastics, glass and printer cartridges from activities at construction compounds and site office(s) • Green waste from vegetation clearance and grubbing.	*A **standard** level of assessment is proposed to assess the waste impacts of the proposal during the EIS.* A waste management and resource use assessment will be carried out as part of the EIS that will consider the relevant government guidelines. The assessment would include: • Identification of the waste streams likely to be generated during construction and operation of the proposal • Identification of the expected resources required for construction and operation • Strategies for minimising the export of excavated materials of-site, maximising reuse opportunities and minimising the volume of excavated material disposal to landfill • Strategies for reducing waste such as the use of recycled materials, bulk delivery of goods to minimise packaging and arrangements

Environmental matter	Existing environment	Potential impacts	Proposed investigation and assessment
		Quantities of waste generated by construction of the proposal would be investigated as part of the design development of the proposal. Waste impacts would be adequately managed with the introduction of standard management measures and preparation of Waste Management Plan. Waste production during operation of the proposal is expected to be minimal and associated with ongoing maintenance of the BESS.	with suppliers to return any unused construction materials. • Identification of authorised waste management companies within the local area to conduct assessment of waste management practices.

7 CONCLUSION

ACCIONA Energía is seeking development consent for the construction, operation and maintenance of a BESS of approximately 450 MW with a storage duration of approximately four hours (1.800MWh) within the Liverpool Plains Shire Council LGA. The proposal is considered to support the NSW Government's electricity strategy for a reliable, affordable and sustainable electricity future that supports a growing economy.

The key environmental issues identified for the proposal include:

- Traffic, Transport and Access
- Noise and Vibration
- Biodiversity
- Aboriginal Heritage
- Non-Aboriginal Heritage
- Hazards and Risk (including bushfire)
- Landscape and Visual
- Land Use
- Soil and Contamination
- Water Quality, Hydrology and Flooding
- Cumulative Impacts

The EIS will include the following in accordance with Schedule 1 of the EP&A Regulations:

- A detailed description of the proposal including its components, construction activities and potential staging
- A comprehensive assessment of the potential impacts on the key issues including a description of the existing environment, assessment of potential direct and indirect and construction, operation and staging impacts
- Description of measures to be implemented to avoid, minimise, manage, mitigate, offset and/or monitor the potential impacts
- Identify and address issues raised by stakeholders.

Additionally, due to the presence of MNES at the proposal site, an EPBC referral will be prepared and submitted to the Commonwealth to confirm whether the proposal is a controlled action.

The Proponent is seeking SSD approval for the proposal under Part 4, Division 4.7 of the EP&A Act. The SEARs are required to enable this assessment.

8 REFERENCES

- Australian Bureau of Statistics (ABS), Census Data (2021). Accessed online April 2025
- Australian Energy Market Operator (AEMO) (2024): *2024 Integrated System Plan for the National Electricity Market*. Accessed online April 2025
- Bureau of Meteorology (BOM) Groundwater Dependent Ecosystems Atlas (2025). Accessed online May 2025
- Department of Climate Change, Energy, the Environment and Water (2021): *Australia's whole-of-economy Long-Term Emissions Reduction Plan.* Accessed online April 2025
- Department of Industry, Science, Energy and Resources (2021): *Low Emissions Technology Statement 2021*
- Department of Panning (2011): *"Applying SEPP 33"*
- DPE (2018): *NSW Transmission Infrastructure Strategy*
- DPE (2022a): *Technical Supplement for Landscape and Visual Impact Assessment*
- DPE (2022b): *Cumulative Impact Assessment Guidelines (CIA Guidelines) for State Significant Projects*
- DPHI (2024a): *Benefit Sharing Guideline*
- DPHI (2024b): *Renewable Energy Planning Framework*
- DPIE (2011a): *Multilevel Risk Assessment Guideline*
- DPIE (2011b): *Hazardous Industry Advisory Paper No. 4, Risk Criteria for Land Use Safety Planning*
- DPIE (2011c): *Hazardous Industry Planning Advisory Paper No.6 – Hazard Analysis*
- DPIE (2019): *NSW Electricity Strategy*
- DPIE (2020): *The Electricity Infrastructure Roadmap*
- DPIE (2022a): *New England North West Regional Plan 2041*
- DPIE (2022b): *State Significant Development Guidelines – Preparing a Scoping Report*
- EPA (2011): *NSW Road Noise Policy*
- EPA (2017): *NSW Noise Policy for Industry*
- EPA Contaminated Land Records (2024): Accessed online April 2025
- Liverpool Plains Shire Council (2020): *Local Strategic Planning Statement 2040*
- NSW Office of Environment and Heritage (2016): *NSW Climate Change Policy Framework*
- NSW Office of Environment and Heritage (2019): *Aboriginal Heritage Information Management System (AHIMS)*
- NSW Royal Fire Service (2019): *Planning for Bushfire Protection 2019*
- Transport for NSW (TfNSW) (2020): *Guideline for Landscape Character and Visual Impact Assessment, Environmental impact assessment practice note EIA-N04*

APPENDIX A SCOPING SUMMARY TABLE

As required by the DPIE *State significant development guidelines – preparing a scoping report* (DPIE, 2022b), a scoping summary table for the proposal is included as Table A1. The table groups the matters requiring further assessment in the EIS by the level of assessment required.

Definitions for levels of assessment are summarised below:

- **Detailed:** The proposal may result in significant impacts on the matter, including cumulative impacts. The assessment of the impacts of the proposal on the matter will require detailed studies and investigations to be carried out by technical specialists.
- **Standard:** The proposal is unlikely to result in significant impacts on the matter, including cumulative impacts. While the assessment of the impacts of the proposal on the matter will involve technical specialists, these impacts are likely to be well understood, relatively easy to predict using standard methods and capable of being mitigated to comply with relevant standards or performance measures.
- **Matters requiring no further assessment in the EIS:** The proposal will have no impact on the matter, or the impacts of the project on the matter will be so small that they are not worth considering.

Table A1: Scoping summary table

Level of assessment	Matter	Cumulative impact assessment (Y/N)	Engagement	Relevant government plans, policies and guidelines	Scoping report reference
Detailed	Traffic, transport and access	Yes	Specific – Liverpool Plains Shire Council and TfNSW.	• *Guide to Traffic Management* (Austroads, 2020) • *Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings* (Austroads, 2019) • *TfNSW Guide to Transport Impact Assessment* (TfNSW, 2024)	Section 6.2
Detailed	Noise and vibration	Yes	General	• *Noise Policy for Industry* (Environmental Protection Authority, 2017) • *Interim Construction Noise Guideline* (Department of Environment, Climate Change and Water, 2009) • *NSW Road Noise Policy Guideline* (Department of Environment, Climate Change and Water, 2011) • *Assessing vibration: A technical guideline* (Department of Environment, Climate Change and Water, 2006)	Section 6.3
Detailed	Biodiversity	No	General	• *Commonwealth EPBC 1.1 Significant Impact Guidelines – Matters of National Environmental Significance* (Commonwealth of Australia, 2013) • *Commonwealth Department of the Environment and Energy – Nationally Threatened Ecological Communities and Threatened Species Guidelines (various)* • *Commonwealth Department of the Environment and Energy – Survey Guidelines for Nationally Threatened Species (various)* • *Biodiversity Assessment Method* (DPIE Environment, Energy and Science, 2020) • *NSW Biodiversity Offsets Scheme* (Office of Environment and Heritage, 2017b) • *Threatened species survey and assessment guidelines at https://www.environment.nsw.gov.au/topics/ animalsand-plants/threatened-species/about-threatened-species/surveys-and-assessments (various)* • *Framework for Biodiversity Assessment* (NSW Office of Environment and Heritage, 2014a) (although now superseded, relevant aspects may still be considered for the Environmental Impact Statement).	Section 6.4

Level of assessment	Matter	Cumulative impact assessment (Y/N)	Engagement	Relevant government plans, policies and guidelines	Scoping report reference
Detailed	Aboriginal heritage	No	Specific – NSWALC, Nungaroo Local Aboriginal Land Council and RAPs.	• *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (Department of Environment, Climate Change and Water, 2010) • *Guide to investigating, assessing, and reporting on Aboriginal Cultural Heritage in New South Wales* (Office of Environment and Heritage 2011) • *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (Department of Environment, Climate Change and Water 2010)	Section 6.5
Standard	Non-Aboriginal heritage	No	General	• *Commonwealth EPBC 1.1 Significant Impact Guidelines – Matters of National Environmental Significance* (Commonwealth of Australia, 2013) • *Guidelines for preparing a Statement of Heritage Impact* (DPE, 2023) • *NSW Heritage Manual* (NSW Heritage Office and Department of Urban Affairs and Planning, 1996) • *Assessing Significance for Historical Archaeological Sites and Relics* (NSW Heritage Branch, Department of Planning, 2009) • *Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977* (NSW Heritage Office, 1998)	Section 6.6
Detailed	Hazards and risk	Yes	General	• *Assessment Guideline: Multi-Level Risk Assessment* (Department of Planning and Infrastructure, 2011) • *Hazardous and Offensive Development Application Guidelines: Applying SEPP 33* (DoP, 2011) • *Hazardous Industry Planning Advisory Paper No.6 – Hazard Analysis* (DPIE, 2011) and an assessment of the associated risks • *Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields* (1998) • *Planning for Bushfire Protection 2019* (NSW RFS, 2019)	Section 6.7
Detailed	Landscape and visual	No	General	• *Guideline for Landscape Character and Visual Impact Assessment, Environmental impact assessment practice note EIA-N04* (TfNSW 2020)	Section 6.8
Standard	Land use	No	General	• *Land Use Conflict Risk Assessment Guide* (DPI 2011)	Section 6.9

Level of assessment	Matter	Cumulative impact assessment (Y/N)	Engagement	Relevant government plans, policies and guidelines	Scoping report reference
Standard	Soil and contamination	No	General	• *Acid Sulfate Soils Assessment Guidelines* (Acid Sulfate Soils Management Advisory Committee, 1998) • *National Environment Protection (Assessment of Site contamination) Measure* (National Environment Protection Council, 2011) • *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997* (Environment Protection Authority, 2015).	Section 6.10
Standard	Water quality, hydrology and flooding	No	General	• *Managing Urban Stormwater: Soils and Construction – Volume 1* (Landcom, 2004) • *Australian and New Zealand guidelines for fresh and marine water quality* (ANZECC & ARMCANZ, 2000) • *Guidelines for Groundwater Protection in Australia* (Commonwealth of Australia, 2013)	Section 6.11
Detailed	Cumulative impacts	N/A	General	• *Cumulative Impact Assessment Guidelines for State Significant Projects 2022* (DPE, 2022b)	Section 6.12
Standard	Social and economic	Yes	Specific – Neighbours and project neighbourhood.	• *Social Impact Assessment Guideline* (NSW Department of Planning, Industry and Environment, 2021) • *International principles for Social Impact Assessment* (International Association for Impact Assessment, 2003)	Section 6.13
Standard	Air quality	No	General	• *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (EPA, 2016)	Section 6.13
Standard	Waste management	No	General	• *Waste Classification Guidelines* (NSW EPA, 2014) • *NSW Waste Avoidance and Resource Recovery Strategy 2014-21* (NSW EPA, 2014)	Section 6.13

APPENDIX B SOCIAL IMPACT ASSESSMENT SCOPING WORKSHEET

Social Impact Assessment (SIA) Worksheet

Project name: Lindsays Gap BESS

Date: 25/06/2025

CATEGORIES OF SOCIAL IMPACTS	POTENTIAL IMPACTS ON PEOPLE		CUMULATIVE IMPACTS		ELEMENTS OF IMPACTS - Based on preliminary investigation					ASSESSMENT LEVEL FOR EACH IMPACT				SIA METHODS	PROJECT REFINEMENT	MITIGATION / ENHANCEMENT MEASURES
					Will the project activity (without mitigation or enhancement) cause a material social impact in						What methods and data sources will be used to investigate this					
what **social impact categories** could be affected by the project activities	What impacts are likely, and what concerns/aspirations have people expressed about the impact? Summarise how each relevant stakeholder group might experience the impact. NB. Where there are multiple stakeholder groups affected differently by an impact, or more than one impact from the activity, please add an additional row.	Is the impact expected to be **positive or negative**	Will this impact combine with others from this project (think about when and where), and/or with impacts from other projects (cumulative)?	If yes, identify which other impacts and/or projects	**extent** i.e. number of people potentially affected?	**duration** of expected impacts? (i.e. construction vs operational phase)	**intensity** of expected impacts i.e. scale or degree of change?	**sensitivity** or vulnerability of people potentially affected?	**level of concern/interest** of people potentially affected?	Level of assessment for each social impact	Secondary data	Primary Data - Consultation	Primary Data - Research	What methods will be used to investigate this impact?	Has the project been refined in response to preliminary impact evaluation or stakeholder feedback?	What **mitigation / enhancement measures** are being considered?
way of life	Impact to people's daily routines (in particular neighbouring landowners) caused by construction activities such as construction noise, increased traffic movements, visual changes and potential cumulative impacts from concurrent developments.	Negative	Yes	Wallabadah Battery Energy Storage System (SSD-078391212) Garoo Solar Farm and BESS (SSD-79747209)	No	No	Yes	No	No	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required		No	Changes to local amenity during construction are expected to be relatively localised and would be assessed in the EIS through noise and vibration, traffic, and landscape and visual assessments. These studies are all expected to recommend appropriate mitigation impacts to local communities' way of life. The Construction Environment Management Plan (CEMP) would include a communication management plan to manage impacts to local communities.
way of life	Potential for shortage of housing exacerbated by the requirement to house workers working on construction projects.	Negative	Yes	Wallabadah Battery Energy Storage System (SSD-078391212) Garoo Solar Farm and BESS (SSD-79747209)	Unknown	No	No	No	Yes	Standard assessment of the impact	Required	Targeted consultation	Potentially targeted research		No	Local employment will be encouraged to improve local productivity outcomes and may assist to reduce housing stress.
way of life	Potential for local and regional businesses procurement opportunities during construction. Local businesses may benefit from construction workers spending money at local businesses, such as food outlets located in nearby suburbs.	Positive	Yes	Wallabadah Battery Energy Storage System (SSD-078391212) Garoo Solar Farm and BESS (SSD-79747209)	Unknown	No	No	No	No	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required		No	Impact will be assessed at a high level in an SIA if required. Local communities may be interested in local business opportunities.
way of life	Increased demand for skilled and unskilled workforce during construction and operation of the project, which may lead to increased temporary employment opportunities for local and regional workforce during construction	Positive	Yes	Wallabadah Battery Energy Storage System (SSD-078391212) Garoo Solar Farm and BESS (SSD-79747209)	Unknown	No	No	No	No	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required		No	Impact will be assessed at a high level in an SIA if required. Local communities may be interested in local employment opportunities.
access	During construction, construction vehicles would be generated and increase the volume of traffic in the area/on the road. Increased construction traffic and temporary changes to local access may lead to minor delays. Operational traffic movements are anticipated to be limited and thus operational traffic impacts are considered neutral.	Negative	Yes	Wallabadah Battery Energy Storage System (SSD-078391212) Garoo Solar Farm and BESS (SSD-79747209)	Unknown	No	No	No	No	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required		No	Changes to access and connectivity will be the subject of the Traffic Impact Assessment. This study would recommend appropriate mitigation measures to manage impacts to traffic concerns.
culture	The development involves transitioning the land use from agricultural purposes to renewable energy production. This shift may conflict with local perceptions of the land's value, as well as community beliefs regarding its appropriate use.	Negative	Yes	Wallabadah Battery Energy Storage System (SSD-078391212) Garoo Solar Farm and BESS (SSD-79747209)	Unknown	Yes	Yes	Yes	Yes	Detailed assessment of the impact	Required	Broad consultation	Targeted research		No	Impact will be assessed at a high level in an SIA if required. Community consultation and the EIS exhibition period will provide the community the opportunity to express their concerns for landuse and be further considered where relevant.
health and wellbeing	Changes in acoustic environment and visual amenity during construction and operation may impact on the health and wellbeing of neighbouring landowners.	Negative	Unknown	Wallabadah Battery Energy Storage System (SSD-078391212) Garoo Solar Farm and BESS (SSD-79747209)	Unknown	Unknown	Unknown	Yes	Yes	Detailed assessment of the impact	Required	Broad consultation	Targeted research		No	The Environment Management Strategy (EMS) for construction and operation would include a communication management plan to manage impacts to local communities. Design considerations and mitigation such as screening vegetation to be considered during the development of the EIS.
surroundings	There will be visual changes for some adjoining and close neighbours who are likely to be concerned that the project will create impact visual amenity.	Negative	Yes	Wallabadah Battery Energy Storage System (SSD-078391212) Garoo Solar Farm and BESS (SSD-79747209)	Unknown	Unknown	Unknown	No	Yes	Detailed assessment of the impact	Required	Broad consultation	Targeted research		Yes	Changes to local amenity during operation are expected to be relatively localised and would be assessed in the EIS by landscape and visual assessment.
surroundings	Possible that some neighbours may be able to hear some construction and operational noise. An assessment of construction and operational noise will be undertaken as part the EIS.	Negative	Yes	Wallabadah Battery Energy Storage System (SSD-078391212) Garoo Solar Farm and BESS (SSD-79747209)	Unknown	Unknown	Unknown	Unknown	Yes	Detailed assessment of the impact	Required	Broad consultation	Targeted research		No	The project will be subject to noise and vibration assessment to identify impacts to neighbouring properties. Measures to reduce noise impacts will be identified in the EIS
surroundings	Possible that nearby sensitive receivers may be exposed to additional dust during the construction of the development due to construction activities and increase in vehicles accessing the site.	Negative	Yes	Wallabadah Battery Energy Storage System (SSD-078391212) Garoo Solar Farm and BESS (SSD-79747209)	Unknown	Yes	Unknown	Unknown	Yes	Detailed assessment of the impact	Required	Broad consultation	Targeted research		No	The project will be subject to air quality assessment to identify impacts to sensitive receivers. Measures to reduce dust and air quality impacts will be identified in the EIS
surroundings	Given the historical agricultural land use of the site, impacts to services that ecosystems provide are unlikely.	Neutral	Yes	Wallabadah Battery Energy Storage System (SSD-078391212) Garoo Solar Farm and BESS (SSD-79747209)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			N/A	The development is being designed to avoid and minimise impacts to ecosystem services. Impacts to surroundings will be assessed as part of the EIS within the BDAR and landscape and visual impact assessment, and each have subsequent mitigation recommendations.
livelihoods	The development provides new employment and business opportunities for locals directly through employment and procurement of the project or indirectly through associated workers staying in accommodation in nearby towns and making purchases at local shops.	Positive	Yes	Wallabadah Battery Energy Storage System (SSD-078391212) Garoo Solar Farm and BESS (SSD-79747209)	Unknown	Yes	No	No	No	Standard assessment of the impact	Required	Targeted consultation	Potentially targeted research		No	Impact will be assessed at a high level in an SIA if required. Local communities may be interested in local employment opportunities.
decision-making systems	Agency and community consultation has commenced as part of the Scoping Report and will continue through the EIS and subsequent planning stages including an exhibition period of 28 days where community have the opportunity to comment on the project.	Positive	No	Not required	Unknown	No	No	No	Unknown	Detailed assessment of the impact	Required	Broad consultation	Targeted research	N/A	N/A	Ongoing consultation with key stakeholders and public exhibition of the project will enhance the ability for agency and communities to be involved in the decision-making of the project.

APPENDIX C COMMUNITY AND STAKEHOLDER INFORMATION

BATTERY ENERGY STORAGE SYSTEMS

A reliable and secure power supply is vital for our everyday lives. Battery Energy Storage Systems (or 'BESS') are becoming increasingly common in Australia as a safe and effective way to support renewable energy generation and to reduce outages. A BESS is a collection of thousands of small batteries, typically made of lithium-ion cells.

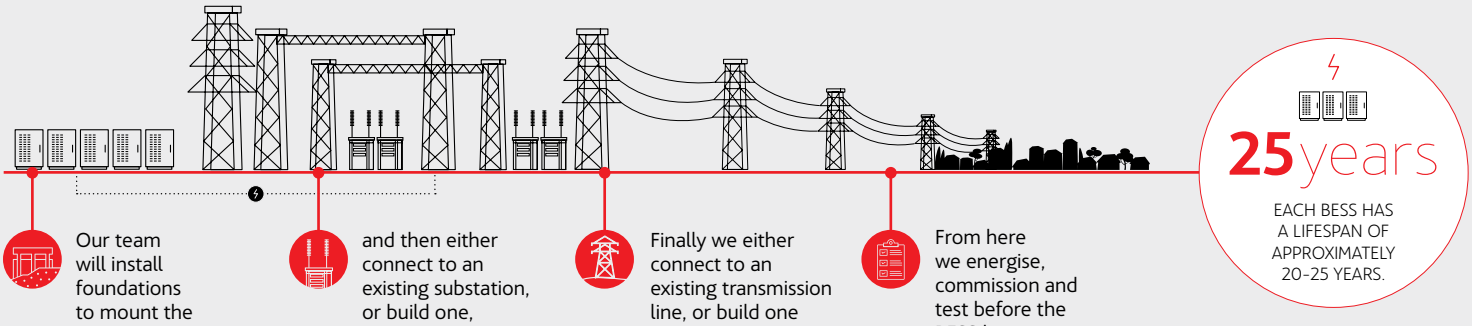
These batteries are connected to the electricity grid and can store the excess energy generated from renewables like wind and solar farms. They can also be recharged by the grid itself.

Storing energy to meet demand

The transition to renewable energy comes with the challenge of balancing supply and demand. Solar energy is generated when the sun shines, but demand often peaks in the evening when we use more appliances. Similarly, wind energy can be produced at any time, including when demand is low, like at night. This mismatch can be resolved with batteries, which store surplus energy during low-demand periods and release it when demand rises.

Building a BESS

To build a BESS, we will install an underground transmission network connecting the BESS to a central substation:



Our team will install foundations to mount the batteries and inverters

and then either connect to an existing substation, or build one, and install the transformers

Finally we either connect to an existing transmission line, or build one to connect the batteries to the grid

From here we energise, commission and test before the BESS becomes operational.

25 years

EACH BESS HAS A LIFESPAN OF APPROXIMATELY 20-25 YEARS.

WHAT ARE THE BENEFITS OF A BESS?

- **Keeps the electricity grid stable and reduces power outages**
- **Can store cheap excess power and distribute during peak demand times**
- **Reliable, affordable and on demand power supply**

Battery storage safety

Battery storage systems are safe and well-regulated in Australia. Vast technological improvements in recent years and the increasing number of BESS systems in Australia have significantly boosted industry safety knowledge and practices.

At ACCIONA Energía, we are committed to the safe and secure operation of all our renewable energy assets. Our projects only use equipment from certified battery suppliers who comply with all Australian safety standards and include components that have preventative and protective features to minimise fire risk.

Planning ahead

Our fire risk management begins well before construction starts on any BESS project. During project development, we work with fire specialists to reduce risks, implementing a range of preventative measures:

- Development of a comprehensive fire safety study to identify how we can further minimise the risk of fire occurring or spreading within and outside the facility
- Design of the battery facility to ensure adequate spacing between battery units
- Inclusion and maintenance of an appropriate fire break between the battery and the facility perimeter

We also work with local and state fire and emergency services to develop comprehensive emergency response plans and deliver on-site emergency response training for our staff.

Built-in safety measures

Each BESS unit has a Battery Management System that continuously and automatically monitors battery performance and health, including the voltage and temperature of each individual battery cell.
The system can automatically and instantaneously shut down and isolate a cell or the entire battery pack if it detects a voltage discrepancy or an abnormal temperature reading.

In the unlikely event of a fire:

- A built in fire suppression agent will be automatically released within the battery container if smoke or carbon monoxide is detected.
- Sprinklers will activate automatically and flood the battery container with water to reduce its temperature.
- Thermal insulation will help to minimise the chance of fire escaping the container.

All ACCIONA Energía's facilities are continuously monitored 24/7 by our local and global control centres and can be remotely shut down if required.

Contact Us

We hope you found this information useful.

To find out more about ACCIONA Energía and our projects, visit our community hub at

www.community.acciona.com.au

or call our community information hotline on **1800 283 550**

Acciona Energia
Level 38, 360 Elizabeth Street
Melbourne VIC 3000
Australia
Tel: +1800 283 550
acciona.com.au

The Residents
[INSERT ADDRESS]
[INSERT ADDRESS]
Wallabadah NSW 2343

19 March 2025

Dear Residents,

Re: Proposed Lindsays Gap Battery Energy Storage System (BESS) Project

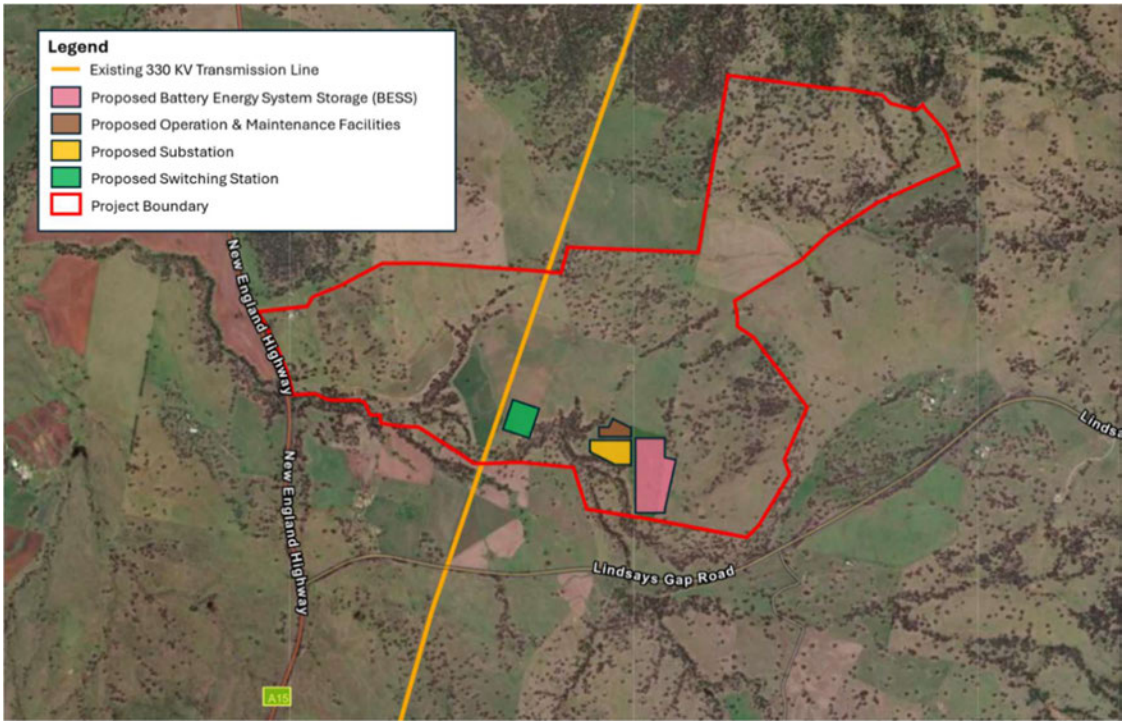
I am writing to you as we are currently exploring the development of the Lindsays Gap Battery Energy Storage System (BESS) Project in your local area.

This letter provides you with some preliminary information about the proposed Project, information about ACCIONA Energía, and an offer to meet with you to discuss the Project further.

Proposed Lindsays Gap Battery Energy Storage System (BESS) Project

We are currently exploring the feasibility of developing, constructing, and operating a large-scale battery project called the Lindsays Gap Battery Energy Storage System (BESS). The proposed project location is around 40 km south of Tamworth, near the north-east intersection of Lindsays Gap Road and the New England Highway, around 8 km north of Wallabadah. A map of the proposed Project location is provided in Figure 1.

Figure 1: Proposed Project Location



The proposed Project is expected to have a capacity of up to 450 Megawatts (MW) and 1800 Megawatt-hours (MWh) of storage and to connect to the 330 KV transmission line between Tamworth and Muswellbrook, which is operated by TransGrid.

The BESS, including ancillary infrastructure, requires a total land area of approximately 15 hectares (ha).

ACCIONA Energía

ACCIONA Energía is the world's largest 100% renewable energy company without a fossil fuel legacy and has been operating in Australia for over two decades and over 30 years worldwide.

In Australia, we not only develop but also build, own, and operate renewable energy assets. This unique approach demonstrates our long-term commitment to the regions where we work. We collaborate with landowners and regional communities to produce renewable energy, create jobs, and deliver a positive social impact.

With a track record of successful projects across Australia and dedicated local teams, we deliver the best renewable energy projects in the country. Our projects and associated investments contribute directly to establishing Australia's low-carbon economy, providing future job growth alongside social and economic benefits to regional and rural Australians.

ACCIONA Energía is in the process of developing a number of Battery Energy Storage System (BESS) Projects across Australia, including the Karara BESS and Aldoga BESS in Queensland, and the Waubra BESS in Victoria.

Included with this letter is a factsheet with general information on Battery Energy Storage Systems (BESS).

Offer to Meet

As a resident of the local area, we would appreciate the opportunity to meet with you to introduce you to our team and the Project. We are also keen to start receiving feedback on the proposed Project from people living in the local area.

This early engagement will help us understand any key questions, interests, and concerns the community may have, as well as what further information may be required.

Early engagement also gives us the opportunity to incorporate local knowledge and feedback into our conceptual designs and lets us know how to tailor our engagement with the community moving forward.

We are available to meet in person, online, or on the phone. Alternatively, we can provide information to you via email.

We are planning to hold some Community Information Sessions in the coming months, but due to your proximity to the proposed Project, we wanted to offer you the opportunity to meet with us before information is shared more widely.

If you would like to meet with us or have any questions, please don’t hesitate to contact us using the details below.

Yours sincerely,

Louise Johnson

Louise Johnson
Community and Stakeholder Engagement Lead (NSW)
[redacted]

NEW ENERGY FOR A BETTER PLANET

LINDSAYS GAP BESS

ACCIONA Energía is currently exploring the feasibility of developing, constructing, and operating a large-scale battery project called the Lindsays Gap Battery Energy Storage System (BESS). The proposed project location is around 40 km south of Tamworth, near the intersection of Lindsays Gap Road and the New England Highway, around 8 km north of Wallabadah.

The proposed Project is expected to have a capacity of up to 450 Megawatts (MW) and 1800 Megawatt-hours (MWh) of storage. The project is proposed to connect to the existing 330 KV transmission line between Tamworth and Muswellbrook.

ACCIONA Energía will be holding Drop-In sessions in Wallabadah to hear from the local community and share information about the proposed project.

DROP-IN SESSIONS

Come along to a drop-in session at the Wallabadah Hall to meet the ACCIONA Energía team and have a chat about the proposed project. Drop by at any time during the sessions to ask questions and provide feedback.

Wallabadah Hall
37 Martyn Street, Wallabadah NSW 2343

Date: Thursday, 26 June 2025
Time: 10:00am - 1:00pm
3:00pm - 7:00pm

Date: Friday, 27 June 2025
Time: 8:00am – 11:00am

Community information hotline: 1800 283 550

Email: lindsaysgap@acciona.com

LINDSAYS GAP BATTERY ENERGY STORAGE SYSTEM (BESS)

DROP-IN SESSIONS

Come along to meet the team and find out more about the proposed Lindsays Gap BESS project.

Wallabadah Hall

26 & 27 June 2025

community.acciona.com.au/lindsays-gap-bess

Lindsays Gap Battery Energy Storage System

LOCATION
Near Wallabadah, NSW

CAPACITY
450MW
1800 Megawatt-hours (MWh) of storage

CONNECTION
330KV
transmission line between Muswellbrook and Tamworth

JOBS
150-200
during construction, up to 10-12 ongoing full-time roles

INVESTMENT
$450million

CONSTRUCTION PERIOD
2028 to late 2029

About the project

ACCIONA Energía is currently exploring the feasibility of developing, constructing, and operating a large-scale battery project called the Lindsays Gap Battery Energy Storage System (BESS). The proposed Project is expected to have a capacity of up to 450 Megawatts (MW) , 1800 Megawatt-hours (MWh) of storage, and connect to the existing 330 KV transmission line between Tamworth and Muswellbrook. Once developed, the BESS will play a critical role in improving network stability.

Leaders in renewable energy

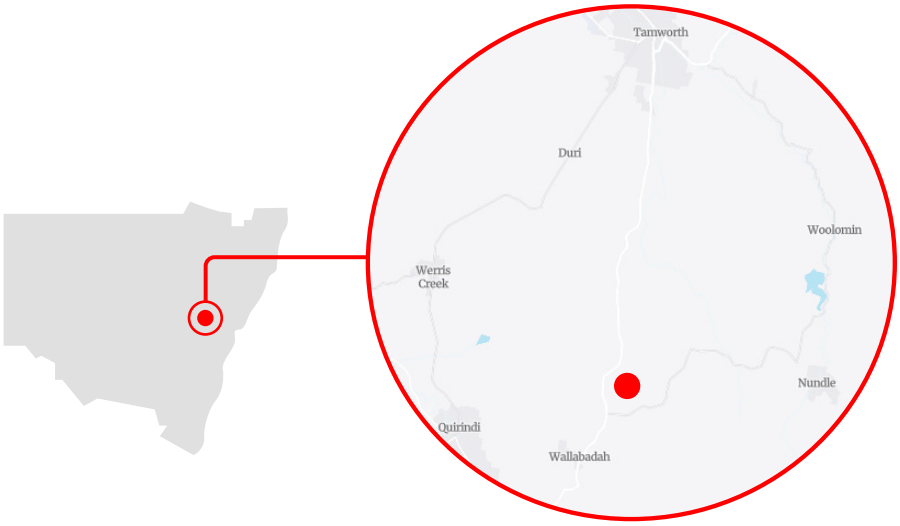
ACCIONA Energía, the world's largest renewable energy company without a fossil fuel legacy, develops, builds and owns renewable energy assets in Australia. We collaborate with communities to produce sustainable energy, create jobs, and contribute to establishing Australia's low-carbon economy.

Connection to country

In the spirit of reconciliation, ACCIONA Energía acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander people.

Location

The proposed project location is more than 40 km south of Tamworth on the New England Highway, around 8 km north of Wallabadah, to the north of the intersection of Lindsays Gap Road and the New England Highway, and north of Wiles Gully. The battery, including ancillary infrastructure, requires a total land area of approximately 15 hectares (ha).



Community benefits

JOBS AND TRAINING

ACCIONA Energía is creating up to 200 construction jobs on the project, as well as offering pathways to gain experience working on a major project. In the operations phase, we'll need a team of staff to maintain and operate the project over its multi-decade lifespan.

PROCUREMENT AND SUPPLIER OPPORTUNITIES

ACCIONA Energía commits to sourcing as much work and supply as possible from local businesses, ensuring the growth and development opportunities benefit local communities first. From earthworks to catering, we want to work with local people to supply our projects.

DEDICATED COMMUNITY BENEFITS FUND

We will establish a community benefit-sharing program that will invest in community organisations and others to deliver programs for the wider community. From legacy projects or grants schemes these investments will be developed to support the local community.

SCHOLARSHIP PROGRAM

A scholarship program will be open to local students to provide support to further their education at University or TAFE.

This program will run throughout the life of the project.

Anticipated timeline

The proposed Lindsays Gap Battery Energy Storage System (BESS) is considered a State Significant Development under the NSW Environmental Planning and Assessment Act 1979. ACCIONA Energía expected to lodge a Scoping Report and receive the Planning Secretary's Environmental Assessment Requirements (SEARs) from the NSW Government in 2025. It is expected that the Environmental Impact Statement (EIS) will then be lodged in 2026 with construction to commence in 2028, pending approval timeframes.

Feasibility and Investigations
2024-2025

Request SEARs
Mid 2025

Prepare EIS
2025-2026

Project Approval
2027

Financial Investment Decision
2027

Construction commencement
2028

Contact us

LOUISE JOHNSON
Community And Stakeholder Engagement Lead
louise.johnson@acciona.com
0460 773 411

Post: PO Box 24110, Melbourne VIC 3001
Community information hotline: 1800 283 550
Email: lindsaysgap@acciona.com
Community Hub: community.acciona.com.au/lindsays-gap-bess

Visit our Community Hub to join our mailing list!

ACCIONA Energía is committed to engaging with the local community surrounding the Lindsays Gap Battery Energy Storage System. We acknowledge the value of your feedback and questions. You can contact us via our free call community hotline, email, our online Community Hub or by post.

Existing 330kV Transmission Line

Project Boundary

Proposed Infrastructure:

Access Tracks

Potential Intersection Upgrade

33kV Underground Reticulation 330kV

Transmission Line

BESS Yard

Operation and Maintenance Facility

Substation

Switching Station

Car Park and Compound (Temporary)

Laydown and Batchplant (Temporary)

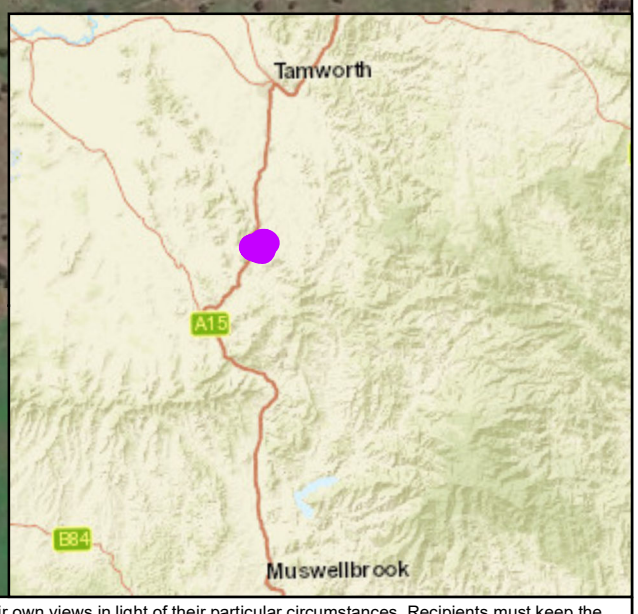
Washdown (Temporary)

TAMWORTH REGIONAL COUNCIL

LIVERPOOL PLAINS SHIRE COUNCIL

NEW ENGLAND HIGHWAY

LINDSAYS GAP ROAD



ACCIONA Energy
Level 8, 11 Eastern Road,
South Melbourne, Victoria, 3205
Phone: +61 3 9027 1000

LINDSAYS GAP BESS FACILITY

INDICATIVE INFRASTRUCTURE LAYOUT

Please note that information provided is subject to change following consultation, design refinement and additional studies.

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APPENDIX D BIODIVERSITY TECHNICAL MEMORANDUM

Lindsays Gap Battery Energy Storage System – Biodiversity Technical Memorandum

Introduction

Background

ACCIONA Energy Australia Global Pty Ltd (ACCIONA Energia) are the largest 100% renewable energy company with no fossil legacy in the world. ACCIONA Energia has 13,500MW in operation globally, and has invested A$1.5 billion in Australian renewable projects to date. ACCIONA Energia's 'build, own and operate' model sets them apart from their competitors, as they work closely with landowners and the broader community to deliver integrated solutions.

The Lindsays Gap BESS Project (the proposal) involves a 450 MW Battery Energy Storage System (BESS) with a storage duration of approximately four hours, and an associated substation and transmission line. The Project is proposed to intersect into the Tamworth-Muswellbrook (Line 88) 330kV line.

The proposal is located at 11090 New England Highway, Wallabadah, approximately 42 kilometres south of Tamworth and seven kilometres northeast of the township of Wallabadah, within the Liverpool Plains Shire Council Local Government Area (LGA). The proposal area is a single land holding spanning across four lots that have historically been used for livestock grazing, cropping and pasture improvement. Within the proposal area, the proposal would utilise the southern portion of land parcel.

This report has been prepared to identify biodiversity constraints within the portion of the proposal area that may be utilised to establish the BESS and supporting infrastructure. A Study area, covering approximately 490 hectares, has been identified, which includes the currently proposed disturbance footprint of the BESS and supporting infrastructure plus a buffer distance around all infrastructure, as well as areas that are being considered for the placement of access infrastructure for the proposal.

Figure 1 shows the proposal area, the current main disturbance footprint, and the Study area that has been considered for the purpose of identifying biodiversity constraints for the proposal.

Purpose

In order to identify preliminary biodiversity constraints for the proposal, ecological surveys were carried out within the Study area. The primary objective of the surveys was to ground-truth biodiversity values within the Study area, with particular focus on threatened flora, fauna and ecological communities listed under *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The collected information has been used to identify constraints for consideration in design development (with the aim of avoiding and minimising biodiversity impacts to the greatest extent possible) as well to identify the need for a referral to the Commonwealth Minister of the Environment.

The following tasks have also been undertaken to provide preliminary information regarding the likely species survey requirements under state legislation (BC Act):

- Ground-truthed Plant Community Types (PCTs) and habitat information gained from survey of the Study area has also been imported into the BAM Calculator (BAM-C) to determine what the likely species (candidate species) survey requirements are likely to comprise for the proposal.
- A high-level understanding of the survey methodologies for threatened flora and fauna species as required under the Biodiversity Assessment Method 2020 (BAM 2020).

Referral under the EPBC Act

The Commonwealth EPBC Act protects a suite of threatened species, listed migratory species and ecological communities that are of national conservation significance, known as Matters of National Environmental Significance (MNES). Any significant impacts on MNES require approval of the Australian Minister for the Environment.

A Referral under the EPBC Act should be considered when a significant impact on MNES is identified as having the potential to occur. The Minister will need to decide whether the proposal will be a ‘controlled action’ under the EPBC Act after 20 business days, in which case the proposal can only be undertaken with the Ministers approval. The approval process includes further assessment and may take up to nine months depending on the level of assessment required.

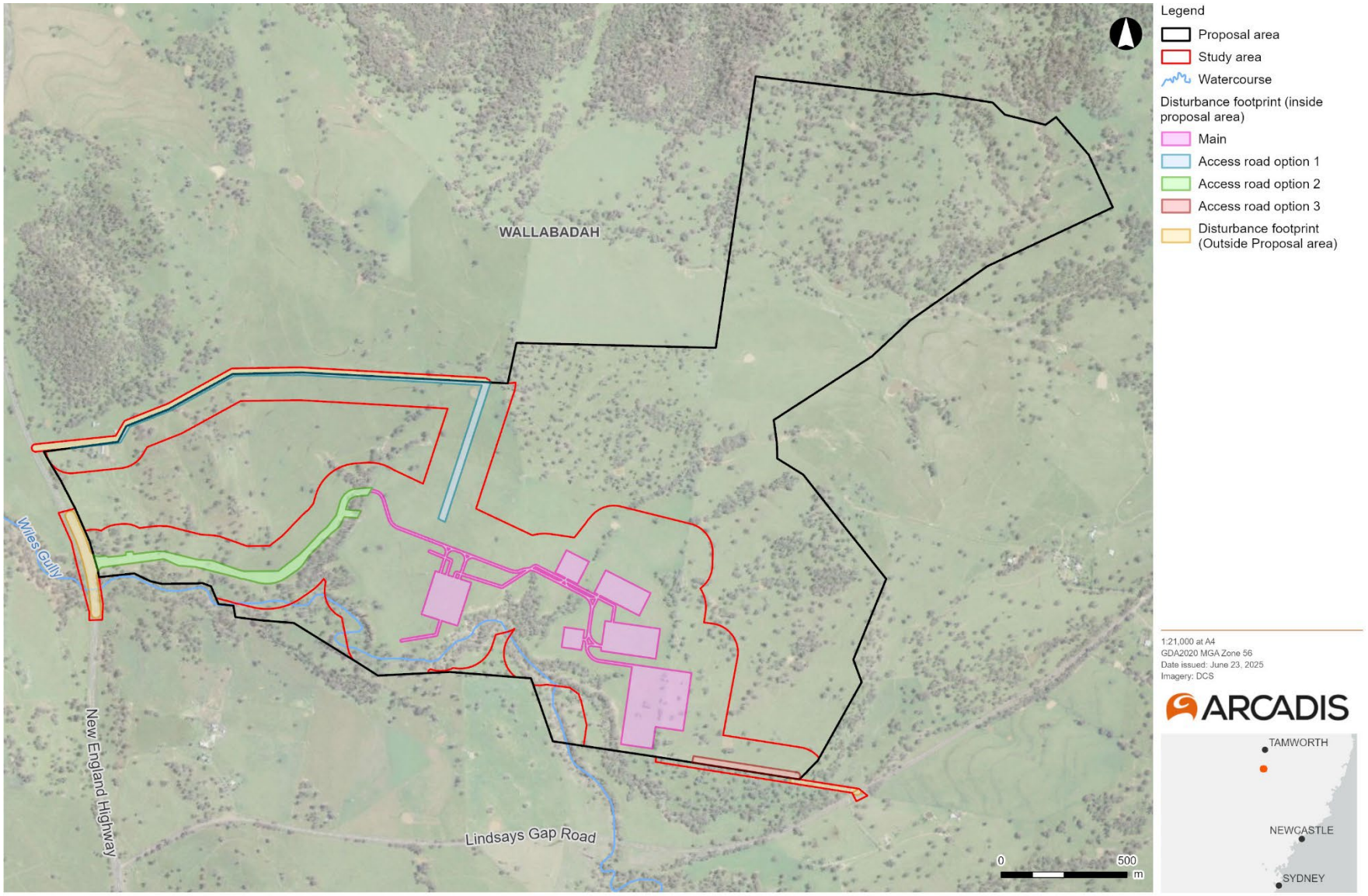

Figure 1 Study area, Proposal area, and disturbance footprints for the proposal

Methodology

Desktop assessment

A desktop assessment of biodiversity values within the Study area was undertaken to inform the field investigations and this report. This investigation involved:

- Undertaking database searches (BioNet, PMST),
- Reviewing existing State Vegetation Type Mapping (SVTM) for the Study area
- Determining a preliminary likelihood for threatened species to occur based on the biodiversity values mapped and historical observations for species.
- Reviewing Biodiversity Assessment Method Calculator – Important Habitat Mapping

Investigations found that the Study area was predominately mapped by the SVTM (NSW DCCEEW, 2023) data set.

Field investigations

To further inform the need for a proposal referral, identification of key biodiversity constraints within the Study Area, and inform the future Biodiversity Development Assessment Report (BDAR), field investigations in the Study area were conducted by Arcadis ecologists Kate Mauger and Emily Cleghorn over four days, between the 31 March and 3 April 2025.

The field investigations were undertaken across the Study area focusing on ground-truthing biodiversity values identified during desktop investigation, particularly those associated with MNES and areas where impacts are proposed according to the preliminary development footprint for the proposal. The survey tasks undertaken included:

- Traversing the Study area in a vehicle and on foot identifying and mapping the vegetation and habitat values present
- Completing 12 20m x 20m vegetation plots in accordance with the BAM (2020) as well as rapid assessment points to support vegetation ground-truthing, mapping and obtaining Vegetation Integrity (VI) scores.

Locations of data points are shown in Figure 2.

Limitations

The findings provided in this report are based on what was observed by the attending ecologists on the week of the surveys. Surveys were limited to a four-day survey, and targeted flora and fauna surveys were not undertaken.

Areas outside of the Study area were not ground-truthed due to access restrictions.

The seasonality of the survey did not coincide with the recommended seasonal survey window for some threatened species (as described in the Threatened Biodiversity Data Collection), which are known from the locality. This limits the chance of a positive identification, particularly for threatened flora as no flowering material is available.

Full suite of BAM plots (required as per the BAM) have not been completed thus far, these will be completed as part of the detailed vegetation surveys as part of the BDAR survey campaign. Thus, Vegetation Integrity scores are preliminary in nature and based on the limited BAM plots conducted within the associated vegetation zones.

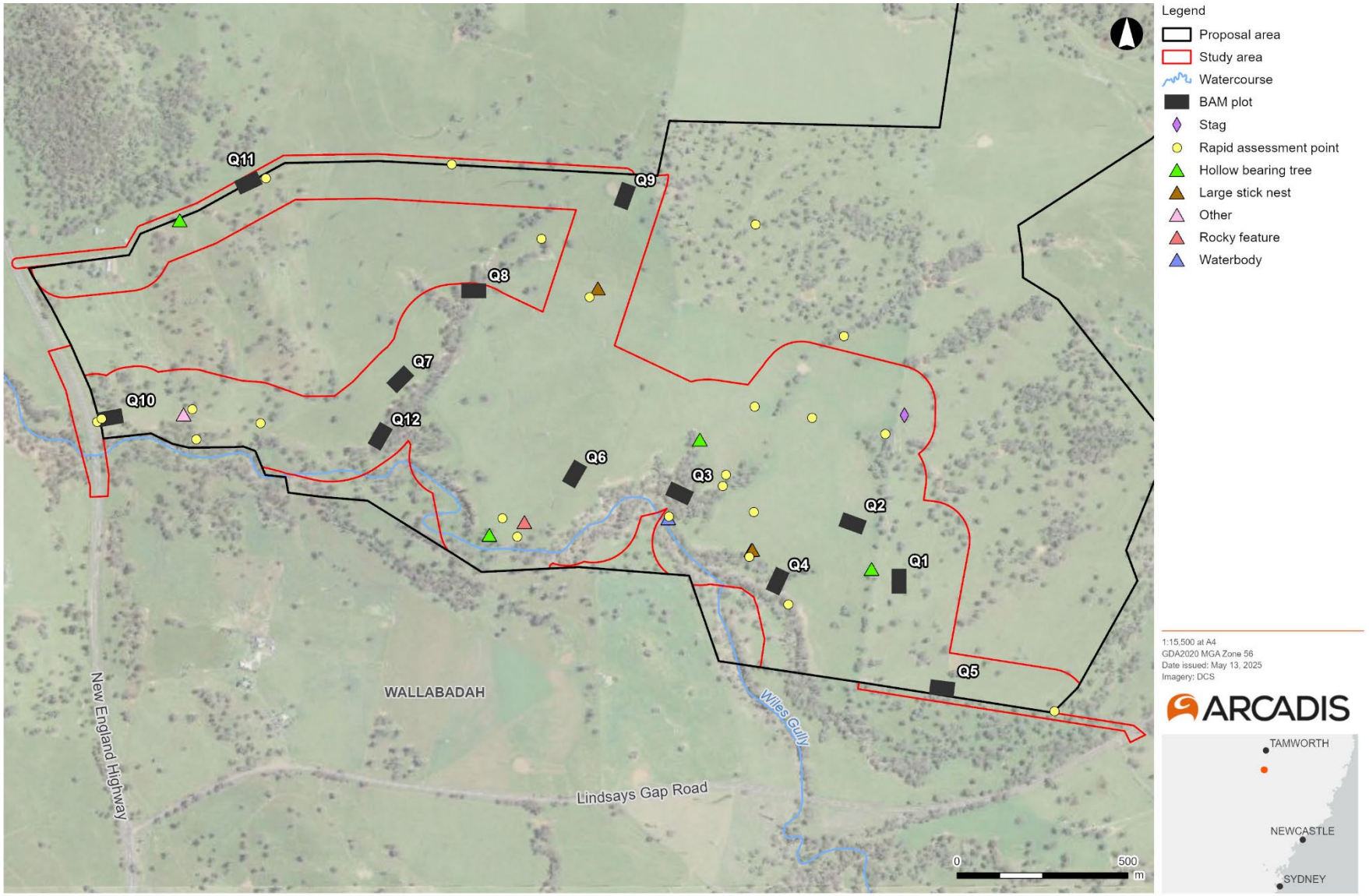

Figure 2 Survey effort for preliminary biodiversity surveys

Existing environment

Site description

The Study area is located in approximately 42 kilometres south of Tamworth, in the Liverpool Plains LGA, and is located within the Nandewar Interim Biogeographic Regionalisation for Australia (IBRA) region, and the Peel IBRA subregion.

The Study area is 490 hectares of predominantly land used for agriculture (grazing and cropping), with patches of native vegetation, mostly restricted to creek lines and ephemeral drainage channels. The majority of the surrounding land is subject to similar livestock grazing practices to the Study area, with patches of remnant native vegetation existing along creek lines, and in escarpment areas within the locality. The nearest conservation zoned land is Wallabadah Nature Reserve, approximately 16 kilometres south east of the Study area.

The Study area is mapped as the Nundle Hills Mitchell Landscape comprising rounded steep hills on faulted steep dipping Devonian-Carboniferous felspathic sandstone, mudstone and conglomerate (DCCEEW, 2016).

One mapped watercourse occurs in the Study area, Wiles Gully, along the southern boundary which is mapped as Key Fish Habitat (KFH) under the *Fisheries Management Act 2015*. This watercourse is also mapped habitat for the endangered (BC Ac) Southern Purple Spotted Gudgeon (*Mogurnda adspersa*). Five farm dams are located throughout the Study area.

Majority of the Study area is mapped as Category-1 (exempt) land under Section 60H of the *Local Land Services Act 2013*. This is restricted to already cleared areas which have a historical land use of cropping and grazing.

Native vegetation

Woodland vegetation

The total area of native vegetation across the Study area is approximately 52.91 hectares. Native vegetation across the Study area was generally restricted to areas along Wiles Gully which have not been previously cleared, or patches of remnant trees across grazing paddocks. The remnant vegetation along Wiles Gully was found to be moderate condition, with large remnant trees and moderate diversity in the grasses and forbs found. The following PCTs were ground-truthed to occur in the Study area:

- PCT 599 – Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
- PCT 433 – White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, BBS Bioregion

PCT 599 was found along Wiles Gully and ephemeral drainage channels across the Study area and is the most abundant PCT. This community is co-dominated by *Eucalyptus albens* (White Box), *Angophora floribunda* (Rough-barked Apple), *E. melliodora* (Yellow Box) and instances of *E. blakelyi* (Blakley's Red Gum) found directly adjacent to watercourses. Sporadic instances of *Brachychiton populneus* subsp. *populneus* (Kurrajong) also occur. The mid stratum is naturally sparse in this community, which is consistent in the Study area, with common species being *Bursaria spinosa*, *Daviesia ulicifolia*, and *Cassinia quinquefaria* when present. The ground stratum is moderately dense with some weed incursion occurring due to the proximity of the grazing paddocks. Common native species include *Bothriochloa macra*, *Sporobolus crebra*, *Glycine tabacina*, *Hypericum gramineum*, *Wahlenbergia* sp., and *Chrysocephalum apiculatum*.

PCT 499 is dominated by *Eucalyptus albens,* with *Brachychiton populneus* subsp*. populneus,* and was found in the higher elevations of the Study area. The mid stratum was absent due to the historical clearing and current grazing practices. The ground stratum was mostly exotic species such as *Trifolium arvense*, *Vulpia* sp., *Cirsium vulgare*, *Digitaria sanguinalis*, *Eleusine tristachya* and *Cyperus brevifolius*.

Plate 1 Grassy woodland vegetation in the Study area, PCT 599 (left) and PCT 433 (right)

Derived Natural Grasslands in the Study area

BAM plots were completed in the cleared areas across the Study area that have proposed infrastructure. Due to the presence of the native grasses *Bothriochloa macra* (Redleg Grass), *Sporobolus crebra*, and *Chloris truncata* (Windmill Grass), the south-east corner of the Study area has Vegetation Integrity (VI) score that exceed the offsetting threshold, as outlined in Section 9.2.1 of the BAM. As the offsetting threshold has been exceeded, these areas are considered native vegetation and are a Derived Native Grassland (DNG) of PCT 599. These areas had a high cover of native forbs such as *Wahlenbergia* sp., *Hypericum gramineum*, *Calotis* sp., *Vittadinia* sp., and *Chrysocephalum apiculatum*. Majority of the coverage was native, however other common species were exotic and included *Sida rhombifolia*, *Trifolium arvense*, *Xanthium spinosum*, and *Vulpia* sp.

Plate 2 DNG located in the south-east of the Study area

Scattered trees

As per Appendix B of the BAM, assessment of impacts for scattered trees can be made using the scattered trees module where:

- The impacts of clearing or development proposals are for vegetation that meets the definition of scattered trees (see Appendix B.1 of the BAM 2020), and,
- The scattered tree is not a threatened species itself, nor does it have any record of a threatened flora or fauna species incidentally using it, and
- The impact is unlikely to be serious or irreversible.

Four trees in the Proposal area meet the above criteria including the definition of a ‘scattered tree’, with one occurring in the Study area (Figure 3).

Category-1 land

The majority of the Study area that contains proposed infrastructure (i.e. the current disturbance footprint) is considered Category-1 (exempt) land, and an exotic grassland. Some areas are recently sowed paddocks with *Avena* sp. (Oat) crops, while other areas are dominated by the fodder crop *Medicago sativa* (Lucerne).

Instances of priority weeds under the *North West Regional Strategic Weed Management Plan 2023-2027* were recorded in the Study area:

- Blackberry (*Rubus fruticosus spp. agg.*)
- Sweet Briar (*Rosa rubiginosa*)


Plate 3 Category-1 land in the Study area including sowed crops (left), and exotic grasslands for grazing (right)

Vegetation Integrity scores

The vegetation in the Study area has been divided into vegetation zones, based on the Vegetation Integrity (VI) scores. A breakdown of the diagnostic species and the total areas of the vegetation zones has been included in Table 1.

Table 1 Vegetation types within the Study area, diagnostic species and VI Score

Plant Community Type	Vegetation zone	Diagnostic species	VI score
PCT 433 – White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, BBS Bioregion	PCT 433 (woodland)*	*Eucalyptus albens, Brachychiton populneus subsp. populneus*	N/A^
PCT 599 – Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion	PCT 599 (woodland – avoided)	*Eucalyptus melliodora, Eucalyptus albens, Eucalyptus blakelyi and Angophora floribunda*	49.1
	PCT 599 (woodland – road option 2)		53.9
PCT 599 – Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and	PCT 599 (DNG – road option 3)	Absence of canopy species, but dominated by native ground cover species particularly*: Bothriochloa macra, Sporobolus crebra, Rytidosperma sp., Chrysocephalum apiculatum, Hypericum gramineum,*	32.6

Plant Community Type	Vegetation zone	Diagnostic species	VI score
Nandewar Bioregion (Derived Native Grassland)		*Wahlenbergia sp.*, and *Glycine tabacina*	
Category-1 land	Cat-1 (main area)	No native canopy cover and dominated by exotic species such as: *Medicago sativa*, cropped oats *(Avena* sp.*), Vulpia* sp.*, Trifolium arvense, Eleusine tristachya, Circium vulgare*, and *Xanthosia spinosum*	2
	Cat-1 (road option 1)		11.3
	Cat-1 (road option 2)		9.4

**Vegetation zones are elaborated on in the impact section of this report, for the various impact options.*
^Was not sampled via a BAM plot during these surveys. This vegetation zone will be sampled during detailed surveys as part of the BDAR.

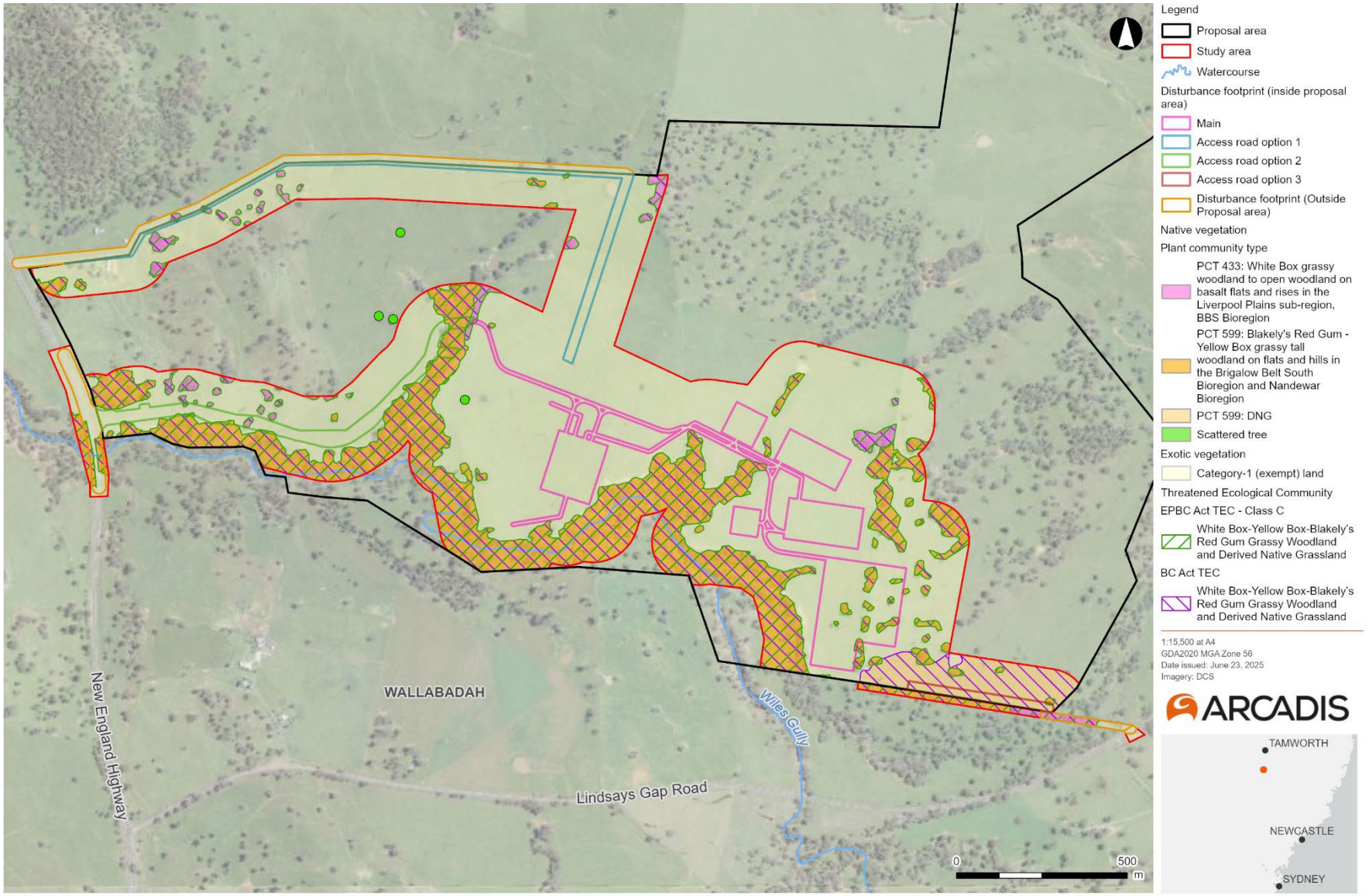

Figure 3 PCTs, BC Act and EPBC Act TECs, and Category-1 land within the Study area

Matters of National Environmental Significance

Threatened ecological communities

The EPBC Protected Matters Search Tool (DAWE 2022) indicated that four EPBC Act listed ecological communities had the potential to occur within 10 kilometres of the Study area (Table 2). To determine their occurrence in the Study area, the native vegetation present was assessed against published descriptions and condition thresholds for these communities.

Table 2. EPBC Act listed ecological communities and their likelihood of occurrence on site

Threatened ecological community	EPBC Act status	Likelihood of occurrence
Weeping Myall Woodlands	Endangered	Does not occur
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Does not occur
New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands	Critically Endangered	Does not occur
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	**Occurs**

One EPBC Act listed community was found to be present within the Study area during field surveys, based on the criteria below.

White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (EPBC Act)

White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland was found to be associated with PCT 433 and PCT 599 and occurs in approximately 46.66 hectares of the Study area. The key diagnostic characteristics and condition thresholds, and the proposals consistency for this TEC are outlined below in Table 3 and Table 4, respectively. Table 5 summarises the PCT's and vegetation zones identified and the associated TECs based on the characteristics in Table 3 and Table 4.

A patch can only be considered a MNES if it meets both the key diagnostic characteristics and at least the minimum condition thresholds.

Table 3 Key diagnostic characteristics for White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC (TSSC, 2023)

Key diagnostic characteristics	Proposal consistency
Occurs in the Brigalow Belt South, Murray Darling Depression, Nandewar, New England Tableland, NSW North Coast, NSW South Western Slopes, Riverina, South Eastern Queensland, South East Corner, South East Coastal Plain, South Eastern Highlands, Southern Volcanic Plain, Sydney Basin and Victorian Midlands	**CONSISTENT** The proposal is located in the Nandewar IBRA bioregion
It has, or previously had, an overstorey dominated or co-dominated by:	**CONSISTENT**

Key diagnostic characteristics	Proposal consistency
• *Eucalyptus albens* (white box) and/or *E. melliodora* (yellow box) and/or *E. blakelyi* (Blakely's red gum) (applicable across the entire range of the ecological community); or, • in the Nandewar bioregion (IBRA, DoE 2012), any of the above three species and/or *E. microcarpa* (western grey box) and/or *E. moluccana* (grey box/coastal grey box)	The patches of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland are co-dominated *E. albens, E. melliodora* and *E. blakelyi*
It has a predominantly native ground layer^	**PARTIALLY CONSISTENT** Patches sampled from the following plots have a native ground layer that is >50% coverage – Q4, Q5, Q8, Q9, Q10, Q11 and Q12.
Tussocks grasses are conspicuous in the ground layer (except in some situations, such as dense groves of shrubs or regenerating trees), usually with several native species from some the following genera: *Austrostipa, Bothriochloa, Chloris, Cymbopogon, Dichanthium, Microlaena, Poa, Themeda, Rytidosperma* or *Sorghum*.	**CONSISTENT** The patches of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland contain tussock grasses such as *Bothriochloa macra*, *Chloris truncata*, *Rytidosperma* sp.
Amongst the grass tussocks and sometimes in swathes, a range of broad-leaved forbs and petaloid monocots (e.g. lilies *sens. lat*.) may be a major component of the plant diversity.	**CONSISTENT** The patches of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland contain numerous forbs such as *Chrysocephalum apiculatum*, *Hypericum gramineum*, and *Glycine tabacina*.
While shrubs may be dominant locally within areas of the ecological community, areas of native vegetation with a more continuous shrub layer, in which the average shrub cover of the whole patch is greater than 30%, is considered to be a shrubby woodland and so is not part of the listed ecological community. In assessing this, the effects of disturbance need to be considered, for example where heavy grazing may result in high densities of shrubs during a recovery phase.	**CONSISTENT** Some shrubs are present in patches such as *Bursaria spinosa*, *Cassinia quinquefaria* and *Acacia* spp. however they do not constitute more than 30% coverage.

^At least 50% of the perennial vegetation cover in the ground layer is made up of native species

Table 4 Conditions thresholds for White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC (TSSC, 2023)

Condition class	Patch size[1]	Features present	Proposal consistency
Class A Good quality understorey and mature overstorey both present	0.1 hectare or larger	• The ground layer is predominantly native and • The understorey contains at least 12 native, non-grass species (such as forbs, shrubs, ferns and sedges) and • At least one of the understorey species should be a species recognised as 'important' (e.g. grazing-sensitive,	**INCONSISTENT** No plots recorded 12 native, non-grass species

Condition class	Patch size[1]	Features present	Proposal consistency
		regionally significant, listed threatened or uncommon species) and • The patch contains 10 or more mature trees per hectare consistent with the key diagnostics for the ecological community	
Class B Good quality understorey present. Characteristics trees may be absent	0.1 hectare or larger	• The ground layer is predominantly native and • The understorey contains at least 12 native, non-grass species (such as forbs, shrubs, ferns and sedges) and • At least one of the understorey species should be a species recognised as 'important' (e.g. grazing-sensitive, regionally significant, listed threatened or uncommon species)	**INCONSITENT** No plots recorded 12 native, non-grass species however two did record 11. It is possible that re-sampling may yield additional species.
Class C Allows for a lower diversity in the understorey in areas where there is regeneration and/or tree density may be relatively dense	2 hectares or larger	• The ground layer is predominantly native and • The patch contains 20 or more mature trees per hectare and/or • The patch contains natural regeneration of dominant overstorey eucalypts	**CONSISTENT** Woodland patches sampled (Q4, Q8, Q12) have predominantly native understories, contain 20 or more mature trees per hectare and have natural regeneration of dominant eucalypt species.

[1]A patch is defined as a continuous area that entirely consists of an ecological community. The patch is the larger of: an area that contains five or more trees in which the gap between the outer canopy of any tree and the outer canopy of the nearest tree is no greater than 75 m, or the area over which the ground layer is predominantly native (at least 50% of the perennial vegetation cover in the ground layer is made up of native species).

Table 5 – Plant Community Types and associated Threatened Ecological Communities (BC and EPBC Act)

Plant Community Type	Vegetation zone	Threatened Ecological Community (BC Act)	Threatened Ecological Community (EPBC Act)
PCT 433 – White Box grassy woodland to open woodland on basalt flats and rises in the Liverpool Plains sub-region, BBS Bioregion	PCT 433 (woodland)*	Yes - White Box-Yellow Box-Blakley's Red Gum Grassy Woodland and Derived Native Grassland	Yes - White Box-Yellow Box-Blakley's Red Gum Grassy Woodland and Derived Native Grassland – Class C
PCT 599 – Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion	PCT 599 (woodland – avoided)		
	PCT 599 (woodland – road option 2)		
PCT 599 – Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion (Derived Native Grassland)	PCT 599 (DNG – road option 3)	Yes - White Box-Yellow Box-Blakley's Red Gum Grassy Woodland and Derived Native Grassland	No – Does not meet condition thresholds outlined in table 3 and 4
Category-1 land	Cat-1 (main area)	NA	NA
	Cat-1 (road option 1)		
	Cat-1 (road option 2)		

TECs (EPBC) that did not occur in the Study area

The remaining TECs that were likely to occur in the Study area were not observed due to the following conditions:

- *Weeping Myall Woodlands* – requires a dominant canopy cover of *Acacia pendula* (Weeping Myall) which was not observed in the Study area
- *Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland* – requires the absence of a dominant canopy, with less than 10% projective crown cover. Where some areas of the Study area are grasslands with no canopy cover, the ground layer in these areas did not contain at least three of the indicator native species listed (TSSC, 2009).

- *New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands* – requires a dominant canopy cover of *Eucalyptus nova-anglica* (New England Peppermint) which was not observed in the Study area

Threatened flora

A total of 20 flora species listed as threatened under the EPBC Act were returned in database searches (BioNet; PMST) within 10 kilometres of the Study area, of which nine were determined to have a moderate or higher likelihood of occurrence in the Study area based on observation records or suitable habitat being observed during field survey. The results of investigation into likelihood of occurrence have been summarised in Table 6, with detailed assessment in Appendix A.

No threatened flora species have been identified within the Study area to date; however targeted surveys have not yet been conducted.

Table 6 EPBC Act listed flora species considered to have the potential to occur in the Study area, their likelihood of occurrence and estimated location/s and associated suitable habitat

Scientific name	Common name	BC Act and SAII	EPBC Act status	Likelihood of occurrence	Associated suitable habitat in the Study Area
Callistemon pungens	-	-	V	Potential to occur	PCT 599 (including DNG)
Dichanthium setosum	Bluegrass	V	V	Potential to occur	PCT 599 (including DNG)
Euphrasia arguta	-	CE Yes	CE	Potential to occur	PCT 599 (including DNG)
Homopholis belsonii	Belson's Panic	E	V	Potential to occur	PCT 599 (including DNG)
Picris evae	Hawkweed	V	V	Potential to occur	PCT 599 (including DNG)
Prasophyllum sp. Wybong (C.Phelps ORG 5269)	-	CE Yes	CE	Potential to occur	PCT 599 (including DNG)
Swainsona murrayana	Slender Darling-pea	V	V	Potential to occur	PCT 433
Thesium australe	Austral Toadflax	V	V	Potential to occur	PCT 599 (including DNG)
Tylophora linearis	-	V	E	Potential to occur	PCT 599 (woodland)

V = Vulnerable, E = Endangered, CE = Critically Endangered

Targeted threatened flora surveys would be required to determine the presence of these species in the Study area. These surveys would be conducted during the BDAR phase of the project, at the appropriate time of year, as per the Threatened Biodiversity Date Collection (TBDC), and in accordance with the relevant survey guidelines.

Threatened and migratory fauna

Database searches were undertaken to identify fauna species listed as migratory and/or threatened under the EPBC Act that occur within 10 kilometres of the Study area. Likelihood of occurrence assessments, detailed in Appendix B were undertaken to identify species considered likely to occur in the Study area.

No threatened fauna have been recorded in the Study area, however targeted surveys have not been completed, with only preliminary spotlighting surveys undertaken to date.

Threatened fauna

A total of 50 fauna species listed as threatened under the EPBC Act were returned in database searches (BioNet; PMST) within 10 kilometres of the Study area. Of which, 20 species were determined to have a moderate or higher likelihood of occurrence in the Study area based on previous observation records or suitable habitat being observed during field survey. The results of investigation into *likelihood of occurrence* have been included in Appendix B.

Twenty EPBC Act listed fauna species are considered to have the potential to occur in the Study area based on an assessment of observed suitable habitat or records within 10 kilometres of the Study area. Their likelihood of occurrence and estimated extent of suitable habitat is provided below in Table 7.

Table 7 EPBC Act listed fauna species considered to have the potential to occur in the Study area, their likelihood of occurrence and estimated location/s and associated suitable habitat

Common name	Scientific name	BC Act status	EPBC Act status	Likelihood of occurrence	Associated suitable habitat in the Study Area
Booroolong Frog	*Litoria booroolongensis*	E	E	Potential to occur	PCT 599 (woodland), PCT 433
Border Thick-tailed Gecko	*Uvidicolus sphyrurus*	V	V	Potential to occur	PCT 599 (woodland), PCT 433
Brown Treecreeper (south-eastern)	*Climacteris picumnus victoriae*	V	V	Potential to occur	PCT 599 (woodland), PCT 433
Corben's Long-eared Bat	*Nyctophilus corbeni*	V	V	Foraging habitat - Potential to occur	PCT 599 (woodland), PCT 433
Diamond Firetail	*Stagonopleura guttata*	V	V	Potential to occur	PCT 599 (woodland), PCT 433
Five-clawed Worm-skink	*Anomalopus mackayi*	E	V	Potential to occur	PCT 599 (all), PCT 433
Fork-tailed Swift	*Apus pacificus*	-	M	Foraging habitat - Potential to occur	PCT 599 (woodland), PCT 433
Grey-headed Flying-fox	*Pteropus poliocephalus*	V	V	Foraging habitat - Potential to occur	PCT 599 (woodland), PCT 433
Koala	*Phascolarctos cinereus*	E	E	Potential to occur	PCT 599 (woodland), PCT 433

Common name	Scientific name	BC Act status	EPBC Act status	Likelihood of occurrence	Associated suitable habitat in the Study Area
Large-eared Pied Bat	*Chalinolobus dwyeri*	E	E	Foraging habitat - Potential to occur	PCT 599 (woodland), PCT 433
Painted Honeyeater	*Grantiella picta*	V	V	Potential to occur	PCT 599 (woodland), PCT 433
Pink-tailed Worm-lizard	*Aprasia parapulchella*	V	V	Potential to occur	PCT 599 (all), PCT 433
Regent Honeyeater	*Anthochaera phrygia*	CE	CE	Potential to occur	PCT 599 (woodland), PCT 433
Sharp-tailed Sandpiper	*Calidris acuminata*	-	M	Foraging habitat - Potential to occur	PCT 599 (all), PCT 433
Southern Whiteface	*Aphelocephala leucopsis*	V	V	Potential to occur	PCT 599 (woodland), PCT 433
South-eastern Hooded Robin	*Melanodryas cucullata cucullata*	E	E	Potential to occur	PCT 599 (woodland), PCT 433
Spotted-tailed Quoll	*Dasyurus maculatus*	V	E	Potential to occur	PCT 599 (woodland), PCT 433
Superb Parrot	*Polytelis swainsonii*	V	V	Potential to occur	PCT 433
Swift Parrot	*Lathamus discolor*	E	CE	Foraging habitat - Potential to occur	PCT 599 (woodland), PCT 433
White-throated Needletail	*Hirundapus caudacutus*	V	V	Potential to occur	PCT 599 (woodland), PCT 433

V = Vulnerable, E = Endangered, CE = Critically Endangered, M = Migratory

Targeted threatened fauna surveys would be required to determine the presence of these species in the Study area. These surveys would be conducted during the BDAR phase of the project, at the appropriate time of year, as per the TBDC, and in accordance with the relevant survey guidelines.

Migratory species

A total of eight species listed as Migratory under the EPBC Act were returned in database searches (BioNet; PMST) within 10 kilometres of the Study area. Of which, three species was identified to have a moderate or higher likelihood of occurrence in the Study area based on previous observation records or suitable habitat being observed during field survey:

- Fork-tailed Swift (*Apus pacificus*)
- Sharp-tailed Sandpiper (*Calidris acuminata*)
- White-throated Needletail (*Hirundapus caudacutus).*

No migratory species have been identified within the Study area to date; however targeted surveys have not yet been conducted.

Fauna habitat

Habitat to terrestrial fauna is present in the grassy woodlands and Derived Native Grasslands (DNG) across the Study area. The grassy woodland areas along Wiles Gully contain numerous mature eucalypts, some bearing medium sized hollows. These areas also contain course woody debris (CWD) in the form of logs, branches and leaf litter.

Aquatic habitat in the Study area is present in Wiles Gully along the southern border. Two farm dams are located in the Study area however they provide minimal potential fauna habitat.

Grassy woodland habitat

This vegetation occurs as remnant patches and scattered remnant trees, mostly along Wiles Gully. It comprised approximately 45.89 hectares of the Study area. This habitat type supported a combination of *Eucalyptus albens* (White Box), *E. melliodora* (Yellow Box), *E. blakelyi* (Blakey's Red Gum) and *Angophora floribunda* (Rough-barked Apple). These areas support various size classes of trees ranging from approximately 5 centimetres to 100+ centimetres diameter at breast height (DBH). Additionally, these areas support large hollow-bearing trees. Logs, branches and leaf litter were frequently observed underneath trees as well. This habitat type provides potential roosting, foraging, breeding and dispersal habitat for a wide variety of native fauna including birds, possums, gliders, microbats, invertebrates and reptiles. Other fauna that would occupy areas of remnant treed vegetation include kangaroos and wallabies, which were frequently observed.

Derived Native Grassland

Derived grassland habitat in the Study area, approximately 6.21 hectares, provides potential foraging, breeding and dispersal habitat for various common native fauna, such as the Nankeen Kestrel (*Falco cenchroides*) and Eastern Grey Kangaroo (*Macropus giganteus*). These species were detected in the Study area during preliminary surveys and a full list of fauna species recorded during survey is included in Appendix D.

The grassland habitat is potential suitable habitat for Five-clawed Worm-skink (*Anomalopus mackayi*), Pink-tailed Worm-lizard (*Aprasia parapulchella*), and Sharp-tailed Sandpiper (*Calidris acuminata*), listed as Vulnerable and Migratory under the EPBC Act, which all utilise native grasslands with scattered or even buried rocks, and native grass species for foraging and dispersal. These areas are also potential foraging and dispersal habitat for majority of the identified threatened fauna species in Table 6.

Aquatic habitat

One mapped watercourse occurs in the Study area, Wiles Gully, along the southern boundary which is mapped as Key Fish Habitat (KFH) under the *Fisheries Management Act 2015*. This watercourse is also mapped habitat for the endangered (BC Ac) Southern Purple Spotted Gudgeon (*Mogurnda adspersa*).

The Study area contains approximately five artificial farm dams that are typical of those used for livestock grazing. Farm dams and drainage channels are situated on clay coils surrounded by natural grassland vegetation. These dams and channels lack instream structures or emergent vegetation, and riparian vegetation is limited to fringing natural grasslands, often showing signs of disturbance from stock. Minor evidence of erosion is apparent surrounding dams and water channels. These aquatic habitats may provide potential habitat for common terrestrial and aquatic species like macropods, amphibians, bird and bat species. These aquatic habitats are unlikely to support threatened species due to the lack of aquatic and emergent vegetation, and lack of structured riparian vegetation.

Future works

Design refinement and development of a Subject land

Following completion of vegetation ground-truthing and targeted surveys for threatened species, the proposal design will aim to be refined, considering both the construction and operational footprints, to avoid and minimise impacts to biodiversity. As a priority, the proposal will aim to be located in areas of non-native vegetation (i.e. category-1 land) to the greatest extent possible, and areas that do not support threatened entities, such as TECs or threatened species. Consideration would then be taken to avoid as much as feasible impacts to the following:

- SAII listed entities, including areas of potential habitat
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland - Critically Endangered Ecological Community under the EPBC Act and BC Act
- Native vegetation in good condition (i.e. with a high Vegetation Integrity score)
- Connectivity corridors.

Entities at risk of Serious and Irreversible Impacts

Threatened species

The BAM-C has identified three candidate species that are considered at risk of Serious and Irreversible Impact (SAII) and have potential to occur in the Study area:

- *Acacia atrox* (Myall Creek Wattle)
- *Euphrasia arguta*
- *Prasophyllum sp. Wybong*

The three flora species have associated PCTs within the Study area and therefore are considered to have potential to occur. These species will require targeted survey to assess their presence, and any impacts to these species by the proposal may constitute a SAII (Table 9).

Three threatened fauna species and one endangered fauna population are predicted to occur are at risk of SAII (Table 9).

Threatened ecological communities

One threatened ecological community with potential to occur in the Study area is listed as SAII – White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland. The TEC is listed as Critically Endangered under the BC Act and is associated with PCT 599 and PCT 433 in the Study area. Further assessment of the presence of this TEC is required, and should it occur any impacts to the community may constitute a SAII.

Survey requirements for the BDAR

A review of BAM-C was undertaken to anticipate future survey requirements for preparation of a BDAR to support the proposal Environmental Impact Statement (EIS). The ground-truthed PCTs were entered into BAM-C using vegetation plot data (where available) to understand the threatened species likely to require survey. The surveys anticipated to be completed as part of the BDAR are summarised below.

Native vegetation survey

A total of two PCTs have been mapped in the Study area and were sampled by 12 BAM vegetation plots following during preliminary surveys. Additional survey effort, including BAM vegetation plots, is required to map and sample the occurrence of PCTs across the site as well as their condition classes. The sampling requirements for native vegetation across the site, once vegetation zones have been stratified should meet the minimum requirements as set out in Table 8.

Table 8. Minimum number of plots required per zone area (BAM 2020)

Vegetation zone area (ha)	Minimum number of plots
<2	1 plot
>2-5	2 plots
>5-20	3 plots
>20-50	4 plots
>50-100	5 plots
>100-250	6 plots
>250-1000	7 plots; more plots may be needed if the condition of the vegetation is variable across the zone
>1000	8 plots; more plots may be needed if the condition of the vegetation is variable across the zone

Threatened species survey

Based on the ground-truthed data the following survey requirements are anticipated for threatened species listed under the BC Act in preparation of the BDAR.

A total of 33 species credit species or dual credit species are likely to require survey as part of BDAR preparation. Two dual credit species (Swift Parrot and Regent Honeyeater) do not require survey under the BAM as any impacts to mapped “Important Habitat” requires offsetting regardless of detection. Outside of areas mapped as “Important Habitat” these species are offset through ecosystem credits. Additionally, the Pink-tailed Worm Lizard does not require surveys as presence or absence is determined via an expert report.

This list has been produced through the BAM-C and reflects the species credit species and dual credit species listed under the BAM that have associated habitat (PCTs) that would be impacted by the current proposal design. The list of species including their BAM species status, survey requirements and associated habitat within the disturbance footprint is included in Table 9.

A Gantt chart has been provided to show the required survey months for candidate flora and fauna species in Table 10 and Table 11, respectively.

EPBC Referral

A Referral to the Commonwealth DCCEEW is recommended based on the proposals potential to impact on MNES.

Table 9. Species credit species and dual credit species likely to require survey in preparation of the BDAR

Scientific name	Common name	Candidate or dual	SAII	Survey requirements (TBDC)	Survey timing	Associated PCTs within the study area
Flora						
Acacia atrox	Myall Creek Wattle	Candidate	Yes	-	All year	PCT 599
Callistemon pungens	-	Candidate	-	-	Sept-Feb	PCT 599
Dichanthium setosum	Bluegrass	Candidate	-	Use seed-head to identify. Survey Nov-Mary, 3-4 weeks after effective rainfall	Nov-May	PCT 599, PCT 433
Digitaria porrecta	Finger Panic Grass	Candidate	-	Use flowers to identify. Survey mid-Jan to late Feb.	Jan-Feb	PCT 599, PCT 433
Euphrasia arguta	-	Candidate	Yes	Survey after rainfall or in areas with light enhancement (post fire, opening of canopy, on edges etc) to identify likely presence or absence.	Nov-March	PCT 599
Homopholis belsonii	Belson's Panic	Candidate	-	Use flowers to locate. Species grows under shrubs and trees and can be easily overlooked. May prefer slightly modified environments.	Dec-April	PCT 599, PCT 433
Picris evae	Hawkweed	Candidate	-	Use fruit and bracts to identify. Survey 2 months after soaking rain.	Nov-Feb	PCT 599
Prasophyllum sp. Wybong	-	Candidate	Yes	Use flowers to identify to species. Flowering usually occurring in early Oct. May require multiple surveys. Survey Sep, if not found survey again in Oct.	Sept-Oct	PCT 599, PCT 433
Swainsona murrayana	Slender Darling-pea	Candidate	-	Based on expert knowledge and observation	Sept	PCT 433

Scientific name	Common name	Candidate or dual	SAII	Survey requirements (TBDC)	Survey timing	Associated PCTs within the study area
Swainsona sericea	Silky Swainson-pea	Candidate	-	Survey months differ based on location. Survey Oct - Nov on Monaro. Survey Sep - Oct in the Riverina.	Sept-Nov	PCT 599
Thesium australe	Austral Toadflax	Candidate	-	Species can be easily overlooked when understorey height exceeds 30cm. When this is the case close inspection surveys (searching between grass tussocks) may be necessary to conclusively determine absence of this species.	Nov-Feb	PCT 599, PCT 433
Tylophora linearis	-	Candidate	-	Use flowers and fruit to locate and identify. Easily confused with other climbers when not in flower or fruit.	Oct-May	PCT 599 (woodland only)
Fauna						
Adelotus brevis	*Adelotus brevis* - endangered population Tusked Frog Population in the Nandewar and New England Tableland Bioregions	Candidate	Yes	Aural-visual surveys, at least four repeat surveys or 14 days of acoustic records of suitable habitat	Oct-Feb	PCT 599
Ninox connivens	Barking Owl	Candidate	-	Call play back or acoustic recording	All year	PCT 599, PCT 433
Litoria booroolongensis	Booroolong Frog	Candidate	-	Aural-visual surveys, at least four repeat surveys of suitable habitat	Oct-Dec	PCT 599, PCT 433
Uvidicolus sphyrurus	Border Thick-tailed Gecko	Candidate	-		Nov-March	PCT 599, PCT 433
Burhinus grallarius	Bush Stone Curlew	Candidate	-	Diurnal survey	All year	PCT 599, PCT 433

Scientific name	Common name	Candidate or dual	SAII	Survey requirements (TBDC)	Survey timing	Associated PCTs within the study area
Cercartetus nanus	Eastern Pygmy-possum	Candidate	-	Spotlighting transects	Oct-March	PCT 599, PCT 433
Phascolarctos cinereus	Koala	Candidate	-	SAT surveys	All year	PCT 599, PCT 433
Chalinolobus dwyeri	Large-eared Pied Bat	Candidate	Yes	Acoustic recorders	Dec-Jan	PCT 599, PCT 433
Hieraaetus morphnoides	Little Eagle	Candidate	-	Diurnal survey	Aug-Oct	PCT 599, PCT 433
Tyto novaehollandiae	Masked Owl	Candidate	-	Call play back or acoustic recording	All year	PCT 599, PCT 433
Hoplocephalus bitorquatus	Pale-headed Snake	Candidate	-	Spotlighting transects, 120 person-mins, four replicates and funnel traps	Nov-March	PCT 599, PCT 433
Aprasia parapulchella	Pink-tailed Worm-lizard	Candidate	-	No survey required. Species is assessed via an expert report	Expert report	PCT 599
Anthochaera phrygia	Regent Honeyeater	Dual	Yes	No survey required. Species assessed via Important Habitat Mapping	Important Habitat Mapping (IHM)	PCT 599, PCT 433
Aepyprymnus rufescens	Rufous Bettong	Candidate	-	Camera traps	All year	PCT 599
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	Dual	-	Diurnal surveys	April-Aug	PCT 599, PCT 433
Lophoictinia isura	Square-tailed Kite	Candidate	-	Diurnal surveys	Sept-Jan	PCT 599, PCT 433
Petaurus norfolcensis	Squirrel Glider	Candidate	-	Survey year round but sites with bipinnate *Acacia*, autumn winter flowering trees and shrubs such as *Eucalyptus robusta* and *Banksia* sp. (*integrifolia* etc.) should be subject to a more retracted survey period of between	All year	PCT 599, PCT 433

Scientific name	Common name	Candidate or dual	SAII	Survey requirements (TBDC)	Survey timing	Associated PCTs within the study area
				March-August. Relies on large old trees with hollows for breeding and nesting. These trees are also critical for movement and typically need to be closely connected (i.e. no more than 50 m apart).		
Polytelis swainsonii	Superb Parrot	Dual	-	Diurnal surveys	Sept-Nov	PCT 433
Lathamus discolor	Swift Parrot	Dual	Yes	No survey required. Species assessed via Important Habitat Mapping	IHM	PCT 599, PCT 433
Haliaeetus leucogaster	White-bellied Sea-Eagle	Dual	-	Diurnal surveys	July-Sept	PCT 599, PCT 433

Table 10 Gantt chart showing the required survey timeframes for candidate flora species (orange is required survey month, grey is outside survey period)

Species			Autumn		Winter			Spring			Summer			Aut-umn
Scientific name	**Common names**	**SAII**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
Acacia atrox	Myall Creek Wattle	Yes												
Callistemon pungens	-	-												
Dichanthium setosum	Bluegrass	-												
Digitaria porrecta	Finger Panic Grass	-												
Euphrasia arguta	-	Yes												
Homopholis belsonii	Belson's Panic	-												
Picris evae	Hawkweed	-												
Prasophyllum sp. Wybong	-	Yes												
Swainsona murrayana	Slender Darling-pea	-												
Swainsona sericea	Silky Swainson-pea	-												
Thesium australe	Austral Toadflax	-												
Tylophora linearis	-	-												

Table 11 Gantt chart showing the required survey timeframes for candidate fauna species (orange is required survey month, grey is outside survey period)

Species			Autum		Winter			Spring			Summer			Autumn
Scientific name	**Common names**	**SAII**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
Ninox connivens	Barking Owl	-												
Litoria booroolongensis	Booroolong Frog	-												
Uvidicolus sphyrurus	Border Thick-tailed Gecko	-												
Burhinus grallarius	Bush Stone-curlew	-												
Cercartetus nanus	Eastern Pygmy-possum	-												
Phascolarctos cinereus	Koala	-												
Chalinolobus dwyeri	Large-eared Pied Bat	**Yes**												
Hieraaetus morphnoides	Little Eagle	-												
Tyto novaehollandiae	Masked Owl	-												
Hoplocephalus bitorquatus	Pale-headed Snake	-												
Aprasia parapulchella	Pink-tailed Worm-lizard	-	**Expert report**											
Anthochaera phrygia	Regent Honeyeater	**Yes**	**IHM**											
Aepyprymnus rufescens	Rufous Bettong	-												
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	-												
Lophoictinia isura	Square-tailed Kite	-												
Petaurus norfolcensis	Squirrel Glider	-												
Polytelis swainsonii	Superb Parrot	--												
Lathamus discolor	Swift Parrot	**Yes**	**IHM**											
Adelotus brevis - endangered population	Tusked Frog: Nandewar and New England Tableland Bioregions	**Yes**												
Haliaeetus leucogaster	White-bellied Sea-Eagle	-												

References

- Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2023). Approved Conservation Advice White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland.
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- New South Wales Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW. (2023). NSW State Vegetation Type Map.
- NSW Threatened Species Scientific Committee (TSSC) (2020). Final determination for White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland - Critically Endangered Ecological Community listing.

Appendix A Likelihood of occurrence – flora

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Acacia atrox Myall Creek Wattle	BC Act: CE EPBC Act: Not listed BAM-C: Candidate	Myall Creek Wattle is known from two populations near Delungra and Gurley. Each population occupies less than 5 hectares. Individuals on Kirramingly Nature Reserve have been described as a separate subspecies Acacia atrox of which six small patches exist. The distribution, ecology and failure of each subspecies to form seed pods suggests the species was once very widely distributed in the region.	Myall Creek wattle grows in soils ranging from deep black clay over basalt to shallow red stony loams on the upper slope and crest of a low hill. The type subsp. occurs in a partly cleared paddock in box woodland with a native grassy understorey. A. a. planitiicola exists on a plain of basalt-derived cracking clay loam. This latter subsp is spread in six discrete patches which are not vegetatively connected now. Genetic analysis and phenotypic comparisons suggest the patches derived from two similar individuals. The type subspecies population currently comprises mostly young stems, with several individuals showing old growth characteristics indicating longevity of a stem may be many decades. A. a. planitiicola comprises about 250 stems, many of which are more tree-like than the current population of the type subsp. Little recruitment is apparent at this latter site, and most new stems arise where soil disturbance occurs above a root (e.g. kangaroo beds).Uniquely shaped hard galls, reminiscent of Hakea fruit, form in the thorns of both subspecies. The recent discovery on the wattle of a lepidopteran cocoon which was shaped identically to these galls suggests the	BAM-C	Moderate	PCT 599

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
			plant has an exceedingly long evolutionary history.			
Cadellia pentastylis Ooline	BC Act: V EPBC Act: V BAM-C: Not applicable	Occurs along the western edge of the North West Slopes from north of Gunnedah to west of Tenterfield. Also occurs in Queensland. The natural range of Ooline is from 24ºS to 30ºS in the 500 to 750 mm per annum rainfall belt.	Appears to flower spasmodically, during a general flowering period of October to January. Dispersal of fruit and seed is probably by “passive fall” or by birds. Seeds showed a high rate of infertility at all sites, although they have been successfully germinated and established after heat application. Forms a closed or open canopy mixing with eucalypt and cypress pine species. There appears to be a strong correlation between the presence of Ooline and low- to medium-nutrient soils of sandy clay or clayey consistencies, with a typical soil profile having a sandy loam surface layer, grading from a light clay to a medium clay with depth. Has the capacity to resprout from rootstock and coppice vigorously from stumps, a feature which may be critical for the species survival in a fire-prone environment. Populations	PMST	Low	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
			display a variety of age classes including large mature trees, suckering regrowth and seedlings. The total area occupied by Ooline is only about 1200 hectares, with remaining populations in NSW still threatened to various degrees by clearing for agriculture and grazing pressures.			
Callistemon pungens	BC Act: Not listed EPBC Act: V BAM-C: Candidate	In NSW, the species occurs from near Inverell to the eastern escarpment in New England National Park. It also occurs in the northern tablelands of south-eastern Queensland, mainly in the Stanthorpe area. Recorded in a number of national parks and nature reserves in NSW and Queensland including Warrabah, Kings Plains, Oxley Wild Rivers and Single National Parks and Severn River, Ironbark and Mann Rivers Nature Reserves. It is also known form Torrington State Recreation Area.	Habitats range from riparian areas dominated by Casuarina cunninghamiana subsp. cunninghamiana to woodland and rocky shrubland. Often in rocky watercourses, usually with sandy granite (occasionally basalt) creek beds Flowers over spring and summer, mostly in November.	BAM-C	Moderate	PCT 599

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Dichanthium setosum bluegrass	BC Act: V EPBC Act: V BAM-C: Candidate	Bluegrass occurs on the New England Tablelands, North West Slopes and Plains and the Central Western Slopes of NSW, extending to northern Queensland. It occurs widely on private property, including in the Inverell, Guyra, Armidale and Glen Innes areas.	Flowering time is mostly in summer. Associated with heavy basaltic black soils and red-brown loams with clay subsoil. Often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. (Often collected from disturbed open grassy woodlands on the northern tablelands, where the habitat has been variously grazed, nutrient-enriched and water-enriched). It is open to question whether the species tolerates or is promoted by a certain amount of disturbance, or whether this is indicative of the threatening processes behind its depleted habitat. Associated species include Eucalyptus albens, Eucalyptus melanophloia, Eucalyptus melliodora, Eucalyptus viminalis, Myoporum debile, Aristida ramosa, Themeda triandra, Poa sieberiana, Bothriochloa ambigua, Medicago minima, Leptorhynchos squamatus, Lomandra aff. longifolia, Ajuga australis, Calotis hispidula and Austrodanthonia, Dichopogon, Brachyscome, Vittadinia, Wahlenbergia and Psoralea species. Locally common or found as scattered clumps in broader populations. The extensive distribution and wide environmental tolerances make predictions about suitable habitat difficult.	PMST BAM-C	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Digitaria porrecta Finger Panic Grass	BC Act: E EPBC Act: Not listed BAM-C: Candidate	Finger Panic Grass occurs in NSW and Queensland. In NSW it is found on the North West Slopes and Plains, from near Moree south to Tambar Springs and from Tamworth to Coonabarabran. It largely occurs on private land.	In NSW, the most frequently recorded associated tree species are Eucalyptus albens and Acacia pendula. Common associated grasses and forbs in NSW sites include Austrostipa aristiglumis, Enteropogon acicularis, Cyperus bifax, Hibiscus trionum and Neptunia gracilis. Flowering season is summer or late summer from mid-January to late February, with seeds maturing and falling from the plant soon after. Native grassland, woodlands or open forest with a grassy understorey, on richer soils. Often found along roadsides and travelling stock routes where there is light grazing and occasional fire. Digitaria porrecta is a perennial tussock-forming grass that can vegetatively reproduce. Fire, livestock grazing and trampling, and physical disturbance of habitat by road and farm machinery are types of disturbances known to occur in Digitaria porrecta sites. Field observations indicate that the grass does continue to persist in such habitats but the effect of the disturbances on the long term capability of the species to maintain a viable population is unknown. The total number of Digitaria porrecta individuals in the wild is estimated at over 200 000 plants. Plants have been recorded as occurring occasionally and frequently in populations	BAM-C	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Eucalyptus nicholii Narrow-leaved Peppermint	BC Act: V EPBC Act: V BAM-C: Not applicable	This species is sparsely distributed but widespread on the New England Tablelands from Nundle to north of Tenterfield, being most common in central portions of its range. Foundry on private property and roadsides, and occasionally in conservation reserves. Planted as urban trees, windbreaks and corridors.	Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock. Seedling recruitment is common, even in disturbed soils, if protected from grazing and fire. Tends to grow on lower slopes in the landscape.	PMST	Low	PCT 599
Euphrasia arguta	BC Act: CE EPBC Act: CE BAM-C: Candidate	Euphrasia arguta was rediscovered in the Nundle area of the NSW north western slopes and tablelands in 2008. Prior to this, it had not been collected for 100 years. Historically, Euphrasia arguta has only been recorded from relatively few places within an area extending from Sydney to Bathurst and north to Walcha. The Royal Botanic Gardens Specimen Register records an additional location reported and vouchered in 2002 from near the Hastings River; and Euphrasia arguta was also recorded from the Barrington Tops in 2012.	Historic records of the species noted the following habitats: 'in the open forest country around Bathurst in sub humid places', 'on the grassy country near Bathurst', and 'in meadows near rivers'. Plants from the Nundle area have been reported from eucalypt forest with a mixed grass and shrub understorey; here, plants were most dense in an open disturbed area and along the roadside, indicating the species had regenerated following disturbance. The number of plants at a given site may vary over time depending on the season and disturbance history. Near Nundle, local populations had apparently declined at sites that had been disturbed twice within three years, in contrast with sites that were disturbed only once. Euphrasia arguta has an annual habit and has been observed to die off over the winter months, with active growth and flowering occurring between January and April. As with other species of Euphrasia, this	PMST BAM-C	Moderate	PCT 599

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
			species is semi-parasitic and attaches to the roots of other associated plants.			
Haloragis exalata subsp. *velutina* Tall Velvet Sea-berry	BC Act: V EPBC Act: V BAM-C: Not applicable	This subspecies of Tall Sea-berry occurs on the north coast of NSW and southeastern Queensland. It is plentiful in inaccessible areas of the upper Macleay River.	Grows in damp places near watercourses. This subspecies also occurs in woodland on the steep rocky slopes of gorges.	PMST	Low	None
Homopholis belsonii Belson's Panic	BC Act: E EPBC Act: V BAM-C: Candidate	It occurs on the northwest slopes and plains of NSW, mostly between Wee Waa, Goondiwindi and Glen Innes. It also occurs in QLD mainly in the Brigalow Belt South bioregion.	Habitat present in mapped PCTs:599, 433 Grows in dry woodland (e.g. Belah) often on poor soils, although sometimes found in basalt-enriched sites north of Warialda and in alluvial clay soils. Habitat and ecology appear to be poorly known	BAM-C	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Lepidium aschersonii Spiny Peppercress	BC Act: V EPBC Act: V BAM-C: Not applicable	Not widespread, occurring in the marginal central-western slopes and north-western plains regions of NSW (and potentially the south western plains). In the north of the State recent surveys have recorded a number of new sites including Brigalow Nature Reserve, Brigalow State Conservation Area,Leard State Conservation Area and Bobbiwaa State Conservation Area. Also known from the West Wyalong in the south of the State. Records from Barmedman and Temora areas are likely to be no longer present. Approximately 50% of the total Lepidium aschersonii recorded for Australia occurs in NSW.	Found on ridges of gilgai clays dominated by Brigalow (Acacia harpophylla), Belah (Casuarina cristata), Buloke (Allocasuarina luehmanii) and Grey Box (Eucalyptus microcarpa). In the south has been recorded growing in Bull Mallee (Eucalyptus behriana). Often the understorey is dominated by introduced plants. The species grows as a component of the ground flora, in grey loamy clays. Vegetation structure varies from open to dense, with sparse grassy understorey and occasional heavy litter. Flowers from spring to autumn. Plants in the Narrabri population have been observed producing abundant seed, and as the species is believed to be short-lived and large numbers of plants were present at the site, Lepidium aschersonii appears to be successfully reproducing. Populations have been known to immediately disappear following inundation by flooding, reappearing several seasons later. An apparent increase in numbers during drought conditions has also been observed. The species is reported to be salt tolerant and also grows well under dry conditions. Recorded population sizes vary from 18 to 5000+ plants. Plant numbers decrease with increasing overstorey density, and plants were not found where the Brigalow canopy cover exceeded about 60%. The species is	PMST	Low	None

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
			often described as a “weed” where it dominates paddocks.			
Lepidium monoplocoides Winged Pepper-cress	BC Act: E EPBC Act: E BAM-C: Not applicable	Widespread in the semi-arid western plains regions of NSW. Collected from widely scattered localities, with large numbers of historical records but few recent collections. There is a single collection from Broken Hill and only two collections since 1915, the most recent being 1950. Also previously recorded from Bourke, Cobar, Urana, Lake Cargelligo, Balranald, Wanganella and Deniliquin. Recorded more recently from the Hay Plain, south-eastern Riverina, and from near Pooncarie.	Occurs on seasonally moist to waterlogged sites, on heavy fertile soils, with a mean annual rainfall of around 300-500 mm. Predominant vegetation is usually an open woodland dominated by Allocasuarina luehmannii (Bulloak) and/or eucalypts, particularly Eucalyptus largiflorens (Black Box) or Eucalyptus populnea (Poplar Box). The field layer of the surrounding woodland is dominated by tussock grasses. Recorded in a wetland-grassland community comprising Eragrostis australasicus, Agrostis avenacea, Austrodanthonia duttoniana, Homopholis proluta, Myriophyllum crispatum, Utricularia dichotoma and Pycnosorus globosus, on waterlogged grey-brown clay. Also recorded from a Maireana pyramidata shrubland. Flowers from late winter to spring, or August to October. The	PMST	Low	None

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
			species is highly dependent on seasonal conditions. Occurs in periodically flooded and waterlogged habitats and does not tolerate grazing disturbance. The number of plants at each site varies greatly with seasonal conditions, but sites tend to be small in area with local concentrations of the plant. Has been recorded as uncommon to locally common with hundreds of plants at sites.			
Picris evae Hawkweed	BC Act: V EPBC Act: V BAM-C: Candidate	Known in NSW north from the Inverell area, in the north-western slopes and plains regions. It has been collected from Elsmore and Myall Creek (both near Inverell) as well as in Inverell, Oxley Park (Tamworth) and also from Dangar Falls in the Oxley Wild Rivers National Park in the northern tablelands of NSW. The species also occurs in the Darling Downs and Moreton regions of south-eastern Queensland.	Where collected, the species abundance has been rare, locally occasional and locally frequent. All recent collections appear to come from modified habitats such as weedy roadside vegetation and paddocks. Its main habitat is open Eucalypt forest including a canopy of Eucalyptus melliodora, E. crebra, E. populnea, E. albens, Angophora subvelutina, Allocasuarina torulosa, and/or Casuarina cunninghamiana with a Dichanthium grassy understory. Soils are black, dark grey or red-brown (specified as shallow, stony soil over basalt for one collection) and reddish clay-loam or medium clay soils. The flowering and fruiting period is mainly October to January, with a few plants collected in flower or fruit until May.	BAM-C	Moderate	PCT 599

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Pomaderris brunnea Rufous Pomaderris	BC Act: E EPBC Act: V BAM-C: Not applicable	Brown Pomaderris is found in a very limited area around the Colo, Nepean and Hawkesbury Rivers, including the Bargo area and near Camden. It also occurs near Walcha on the New England tablelands and in far eastern Gippsland in Victoria.	Brown Pomaderris grows in moist woodland or forest on clay and alluvial soils of flood plains and creek lines. Flowers appear in September and October. The species is expected to live for 10 - 20 years, while the minimum time to produce seed is estimated to be 4 - 6 years. The species has been found in association with Eucalyptus amplifolia, Angophora floribunda, Acacia parramattensis, Bursaria spinosa and Kunzea ambigua.	PMST	Low	None
Prasophyllum sp. Wybong	BC Act: Not listed EPBC Act: CE BAM-C: Candidate	Endemic to NSW, it is known from near Ilford, Premer, Muswellbrook, Wybong, Yeoval, Inverell, Tenterfield, Currabubula and the Pilliga area. Most populations are small, although the Wybong population contains by far the largest number of individuals.	A perennial orchid, appearing as a single leaf over winter and spring Flowers in spring and dies back to a dormant tuber over summer and autumn Known to occur in open eucalypt woodland and grassland	BAM-C	Moderate	PCT 599, 433
Swainsona murrayana Slender Darling-pea	BC Act: V EPBC Act: V BAM-C: Not applicable	Found throughout NSW, it has been recorded in the Jerilderie and Deniliquin areas of the southern riverine plain, the Hay plain as far north as Willandra National Park, near Broken Hill and in various localities between Dubbo and Moree.	The species has been collected from clay-based soils, ranging from grey, red and brown cracking clays to red-brown earths and loams. Grows in a variety of vegetation types including bladder saltbush, black box and grassland communities on level plains, floodplains and depressions and is often found with Maireana species. Plants have been found in remnant native grasslands or grassy woodlands that have been intermittently grazed or cultivated. Plants produce winter-spring growth, flower in spring to early summer and then die	PMST	Moderate	PCT 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
			back after flowering. They re-shoot readily and often carpet the landscape after good cool-season rains. The species may require some disturbance and has been known to occur in paddocks that have been moderately grazed or occasionally cultivated. Swainsona species contain a poisoning principle, swainsonine, which affects the nervous system and is toxic to stock.			
Swainsona sericea Silky Swainson-pea	BC Act: V EPBC Act: Not listed BAM-C: Candidate	Silky Swainson-pea has been recorded from the Northern Tablelands to the Southern Tablelands and further inland on the slopes and plains. There is one isolated record from the far north-west of NSW. Its stronghold is on the Monaro. Also found in South Australia, Victoria and Queensland.	Found in Natural Temperate Grassland and Snow Gum Eucalyptus pauciflora Woodland on the Monaro. Found in Box-Gum Woodland in the Southern Tablelands and South West Slopes. Sometimes found in association with cypress-pines Callitris spp. Habitat on plains unknown. Regenerates from seed after fire.	BAM-C	Moderate	PCT 599
Thesium australe Austral Toadflax	BC Act: V EPBC Act: V BAM-C: Candidate	Austral Toad-flax is found in very small populations scattered across eastern NSW, along the coast, and from the Northern to Southern Tablelands. It is also found in Tasmania and Queensland and in eastern Asia. Although originally described from material collected in the SW Sydney area, populations have not been seen in a long time. It may persist in some areas in the broader region.	Occurs in grassland on coastal headlands or grassland and grassy woodland away from the coast. Often found in association with Kangaroo Grass (Themeda australis).A root parasite that takes water and some nutrient from other plants, especially Kangaroo Grass.	PMST BAM-C	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Tylophora linearis	BC Act: V EPBC Act: E BAM-C: Candidate	Occurs from southern Queensland into central NSW, as far south near Temora with the majority ofrecords occurring in thecentral western region. Records from Goonoo, Pillaga West, Pillaga East,Bibblewindi, Cumbiland Eura State Forests, Coolbaggie NR, Goobang NP and Beni SCA. Also has been recorded Hiawatha State Forest near West Wyalong in the south and there are old records as far north as Crow Mountain near Barraba and near Glenmorgan in the western Darling Downs.	Grows in dry scrub and open forest. Recorded from low-altitude sedimentary flats in dry woodlands of Eucalyptus fibrosa, Eucalyptus sideroxylon, Eucalyptus albens, Callitris endlicheri, Callitris glaucophylla and Allocasuarina luehmannii. Also grows in association with Acacia hakeoides, Acacia lineata, Melaleuca uncinata, Myoporum species and Casuarina species. Flowers in spring, with flowers recorded in November or May and is suspected to be related to rainfall, with fruiting probably 2 to 3 months later. Altitudes are generally in the range of 300 - 400 m a.s.l.	BAM-C	Moderate	PCT 599

Appendix B Likelihood of occurrence – fauna

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Actitis hypoleucos Common Sandpiper	BC Act: EPBC Act: BAM-C: Not applicable	Found along all coastlines of Australia and in many areas inland, the Common Sandpiper is widespread in small numbers. The population when in Australia is concentrated in northern and western Australia (Blakers et al. 1984; Higgins & Davies 1996). Areas of national importance and maximum counts (Watkins 1993)	The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow, and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags (Geering et al. 2007; Higgins & Davies 1996).	Mig	Low	N/A
Adelotus brevis - endangered population Tusked Frog population in the Nandewar and New England Tableland Bioregions	BC Act: , EP EPBC Act: Not listed BAM-C: Candidate	The Tusked Frog is distributed along the eastern coast and adjacent ranges from central Queensland to southern NSW, extending inland to the New England Tableland (New England Bioregion) and North West Slopes (Nandewar Bioregion). Tusked Frogs have experienced large declines in in the New England and Nandewar Bioregions and are now very rare there, and the	Habitat present in mapped PCTs:599	BAM-C	Possible	PCT 599

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		population in these regions has been listed as an Endangered Population under the Biodiversity and Conservation Act. The species remains more common in lower elevation coastal areas.				
Aepyprymnus rufescens Rufous Bettong	BC Act: V EPBC Act: Not listed BAM-C: Candidate	The original range from Coen in north Queensland to central Victoria has been reduced to a patchy distribution from Cooktown, Queensland, to north-eastern NSW as far south as Mt Royal National Park. In NSW it has largely vanished from inland areas but there are sporadic, unconfirmed records from the Pilliga and Torrington districts.	Rufous Bettongs inhabit a variety of forests from tall, moist eucalypt forest to open woodland, with a tussock grass understorey. A dense cover of tall native grasses is the preferred shelter. They sleep during the day in cone-shaped nests constructed of grass in a shallow depression at the base of a tussock or fallen log. At night they feed on grasses, herbs, seeds, flowers, roots, tubers, fungi and occasionally insects.	BAM-C	Moderate	PCT 599
Anomalopus mackayi Five-clawed Worm-skink	BC Act: E EPBC Act: V BAM-C: Not applicable	Patchy distribution on the North West Slopes and Plains of north-east NSW and south-east Queensland, from the Ashford area west to Mungindi and Walgett in NSW and north to Dalby in Queensland.	Close to or on the lower slopes of slight rises in grassy White Box woodland on moist black soils, and River Red Gum-Coolibah-Bimble Box woodland on deep cracking loose clay soils. May also occur in grassland areas and open paddocks with scattered trees. Live in permanent deep tunnel-like burrows and deep soil cracks, coming close to the surface under fallen timber and litter, especially partially buried logs.	PMST	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Anthochaera phrygia Regent Honeyeater	BC Act: CE EPBC Act: CE BAM-C: Not applicable	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. Once recorded between Adelaide and the central coast of Queensland, its range has contracted dramatically in the last 30 years to between north-eastern Victoria and south-eastern Queensland. There are very few breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley, Mudgee/Wollar, Lower Hunter Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests.	The Regent Honeyeater is a flagship threatened woodland bird whose conservation will benefit a large suite of other threatened and declining woodland fauna. The species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. Every few years non-breeding flocks are seen foraging in flowering coastal Swamp Mahogany and Spotted Gum forests, particularly on the central coast and occasionally on the upper north coast. Birds are occasionally seen on the south coast. In the last 10 years Regent Honeyeaters have been recorded in urban areas around Albury where woodlands tree species such as Mugga Ironbark and Yellow Box were planted 20 years ago.The Regent Honeyeater is a generalist forager, although it feeds mainly on the nectar from a relatively small number of eucalypts that produce high volumes of nectar. Key eucalypt species include Mugga Ironbark, Yellow Box, White Box and Swamp Mahogany. Other tree species may be regionally important. For example the Lower Hunter Spotted Gum forests have recently been demonstrated to support regular breeding events. Flowering of associated species such as Thin-leaved Stringybark Eucalyptus eugenioides and other Stringybark species, and Broad-leaved Ironbark E. fibrosa can also contribute important nectar flows at times. Nectar and fruit from the mistletoes Amyema miquelii, A. pendula and A. cambagei are also utilised. When nectar is scarce lerp and honeydew can comprise a large proportion of the diet. Insects make up about 15% of the total diet and are important components of the diet of nestlings. Colour-banding of Regent Honeyeater has shown that the species can undertake large-scale nomadic movements in the order of hundreds of	PMST	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
			kilometres. However, the exact nature of these movements is still poorly understood. It is likely that movements are dependent on spatial and temporal flowering and other resource patterns. To successfully manage the recovery of this species a full understanding of the habitats used in the non-breeding season is critical. There are several known key breeding areas, four of them in NSW - Capertee Valley, Lower Hunter Valley, Mudgee/Wollar and Bundarra-Barraba regions. The species breeds between July and January in Box-Ironbark and other temperate woodlands and riparian gallery forest. Regent Honeyeaters usually nest in horizontal branches or forks in tall mature eucalypts and Sheoaks. Also nest in mistletoe haustoria. An open cup-shaped nest is constructed of bark, grass, twigs and wool by the female. Two or three eggs are laid and incubated by the female for 14 days. Nestlings are brooded and fed by both parents at an average rate of 23 times per hour and fledge after 16 days. Fledglings fed by both parents 29 times per hour.			
Aphelocephala leucopsis Southern Whiteface	BC Act: V EPBC Act: V BAM-C:	There is a broad hybrid zone between the two subspecies extending north from the western edge of the Nullarbor Plain. The	Habitat critical to the survival of the Southern Whiteface includes areas of: • relatively undisturbed open woodlands and shrublands with an understorey of grasses or	PMST	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
	Not applicable	northern boundary extends to about Carnarvon in the west, to the southern Northern Territory in central Australia, but is slightly further south in Queensland where the species is largely confined to the south-west of the Mitchell Grass Downs and along the southern state border (Schodde & Mason 1999).	shrubs, or both; • habitat with low tree densities and an herbaceous understory litter cover which provides essential foraging habitat; • living and dead trees with hollows and crevices which are essential for roosting and nesting.			
Aprasia parapulchella Pink-tailed Worm-lizard	BC Act: V EPBC Act: V BAM-C: Candidate	The Pink-tailed Legless Lizard is primarily known from the Central and Southern Tablelands and the South Western Slopes, with a confirmed outlier record on the Hay Plains north of Hay. There is a concentration of populations in the Canberra/Queanbeyan Region. Other populations have been recorded near Cooma, Yass, Bathurst, Albury and West Wyalong. This species is also found in the Australian Capital Territory.	Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by Kangaroo Grass (Themeda australis).Sites are typically well-drained, with rocky outcrops or scattered, partially-buried rocks. Commonly found beneath small, partially-embedded rocks and appear to spend considerable time in burrows below these rocks; the burrows have been constructed by and are often still inhabited by small black ants and termites. Feeds on the larvae and eggs of the ants with which it shares its burrows. It is thought that this species lays 2 eggs inside the ant nests during summer; the young first appear in March. Not all sites are rocky. For instance, on the Hay Plains the species has been recorded from a disturbed ants nest in chenopod shrubland and the West Wyalong population occurs in mallee woodland.	PMST BAM-C	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Apus pacificus Fork-tailed Swift	BC Act: EPBC Act: BAM-C: Not applicable	In NSW, the Fork-tailed Swift is recorded in all regions. Many records occur east of the Great Divide, however, a few populations have been found west of the Great Divide. These are widespread but scattered further west of the line joining Bourke and Dareton. Sightings have been recorded at Milparinka, the Bulloo River and Thurloo Downs (Higgins 1999).	The Fork-tailed Swift is almost exclusively aerial, flying from less then 1 m to at least 300 m above ground and probably much higher. In Australia, they mostly occur over inland plains but sometimes above foothills or in coastal areas. They often occur over cliffs and beaches and also over islands and sometimes well out to sea. They also occur over settled areas, including towns, urban areas and cities. They mostly occur over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh. They are also found at treeless grassland and sandplains covered with spinifex, open farmland and inland and coastal sand-dunes. The sometimes occur above rainforests, wet sclerophyll forest or open forest or plantations of pines (Higgins 1999)	Mig	Low	PCT 599, 433
Botaurus poiciloptilus Australasian Bittern	BC Act: E EPBC Act: E BAM-C: Not applicable	Australasian Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west.	Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (Typha spp.) and spikerushes (Eleocharis spp.).Hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails. Feeding platforms may be constructed over deeper water from reeds trampled by the bird; platforms are often littered with prey remains. Breeding occurs in summer from October to January; nests are built in secluded places in densely-vegetated wetlands on a platform of reeds; there are usually six olive-brown eggs to a clutch.	PMST	Low	PCT 599, 433
Burhinus grallarius Bush Stone-curlew	BC Act: E EPBC Act: Not listed BAM-C: Candidate	The Bush Stone-curlew is found throughout Australia except for the central southern coast and inland, the far south-east corner, and Tasmania. Only in northern Australia is it still	Inhabits open forests and woodlands with a sparse grassy groundlayer and fallen timber. Largely nocturnal, being especially active on moonlit nights. Feed on insects and small vertebrates, such as frogs, lizards and snakes. Nest on the ground in a scrape or small bare patch. Two eggs are laid in spring and early summer.	BAM-C	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		common however and in the south-east it is either rare or extinct throughout its former range.				
Calidris acuminata Sharp-tailed Sandpiper	BC Act: EPBC Act: V BAM-C: Not applicable	During the non-breeding season, approximately 91 percent of the East Asian – Australasian population occurs in Australia and New Zealand (Bamford et al. 2008). Sharp-tailed sandpipers occur within all states of Australia. They are found mostly in the south-east and are widespread in both inland and coastal locations. The species also occurs in both freshwater and saline habitats.	Mudflats, coastal and inland wetlands, and sewage ponds. After rainfall events, the species may also feed on areas of agricultural pasture (Higgins and Davies 1996; Weller et al. 2020). Sharp-tailed sandpipers are omnivorous. Their diet comprises mostly of seeds, worms, molluscs, crustaceans, and insects, which they prey on by pecking and jabbing their beak into muddy substrate (Higgins and Davies 1996). Roosting habitat On migration, the species forages and roosts on rocky and sandy beaches, freshwater habitats, and inland saltwater habitats (Higgins & Davies 1996). Breeding habitat The sharp-tailed sandpiper is migratory, breeding in northern Siberia and moving in flocks of less than a thousand individuals to non-breeding areas south of the Equator (Higgins & Davies 1996). Sharp-tailed sandpipers breed from June to August.	PMST, Mig	Low	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Calidris ferruginea Curlew Sandpiper	BC Act: CE EPBC Act: CE BAM-C: Not applicable	The Curlew Sandpiper is distributed around most of the Australian coastline (including Tasmania). It occurs along the entire coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray-Darling Basin. Inland records are probably mainly of birds pausing for a few days during migration The Curlew Sandpiper breeds in Siberia and migrates to Australia (as well as Africa and Asia) for the non-breeding period, arriving in Australia between August and November, and departing between March and mid-April.	It generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes inland. It forages in or at the edge of shallow water, occasionally on exposed algal mats or waterweed, or on banks of beach-cast seagrass or seaweed. It roosts on shingle, shell or sand beaches; spits or islets on the coast or in wetlands; or sometimes in salt marsh, among beach-cast seaweed, or on rocky shores. Curlew Sandpipers are omnivorous, feeding on worms, molluscs, crustaceans, insects and some seeds. Birds breed at 2 years of age and the oldest recorded bird is 19 years old. Most birds caught in Australia are between 3 and 5 years old.	PMST, Mig	Low	PCT 599, 433
Calidris melanotos Pectoral Sandpiper	BC Act: EPBC Act: BAM-C: Not applicable	The Pectoral Sandpiper is a regular, uncommon, non-breeding migrant from the Siberian and American Arctic. It is sighted mostly in South eastern Australia, in the Murray Darling Basin and western Victoria. The birds arrive mainly in coastal	On migration and in winter, the Pectoral Sandpiper is typically found in freshwater habitats usually coastal or near-coastal, but occasionally farther inland. This includes: coastal lagoons, estuaries, swamps, lakes, creeks, floodplains, and artificial wetlands. Wetlands often have open fringing mudflats, and low, emergent or fringing vegetation.	Mig	Low	PCT 599, 433 – around dams/riparian areas

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		areas and then disperse inland.				
Callocephalon fimbriatum Gang-gang Cockatoo	BC Act: E EPBC Act: E BAM-C: Not applicable	The Gang-gang Cockatoo is distributed from southern Victoria through south- and central-eastern New South Wales. In New South Wales, the Gang-gang Cockatoo is distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. It occurs regularly in the Australian Capital Territory. It is rare at the extremities of its range, with isolated records known from as far north as Coffs Harbour and as far west as Mudgee.	In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In autumn and winter, the species often moves to lower altitudes in drier more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas. May also occur in sub-alpine Snow Gum (Eucalyptus pauciflora) woodland and occasionally in temperate rainforests. Favours old growth forest and woodland attributes for nesting and roosting. Nests are located in hollows that are 7 cm in diameter or larger in eucalypts and 3 metres or more above the ground.	PMST	Low	PCT 599, 433
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo	BC Act: V EPBC Act: V BAM-C: Candidate	The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina.	Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (Allocasuarina littoralis) and Forest Sheoak (A. torulosa) are important foods. Inland populations feed on a wide range of sheoaks, including Drooping Sheoak, Allocasuaraina diminuta, and A. gymnathera. Belah is also utilised and may be a critical food source for some populations. In the Riverina, birds are associated with hills and rocky rises supporting Drooping Sheoak, but also recorded in open woodlands dominated by Belah (Casuarina cristata).Feeds almost exclusively on the seeds of several species of she-oak (Casuarina and	PMST BAM-C	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		An isolated population exists on Kangaroo Island, South Australia.	Allocasuarina species), shredding the cones with the massive bill. Dependent on large hollow-bearing eucalypts for nest sites. A single egg is laid between March and May.			
Cercartetus nanus Eastern Pygmy-possum	BC Act: V EPBC Act: Not listed BAM-C: Candidate	The Eastern Pygmy-possum is found in south-eastern Australia, from southern Queensland to eastern South Australia and in Tasmania. In NSW it extends from the coast inland as far as the Pilliga, Dubbo, Parkes and Wagga Wagga on the western slopes.	Found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest. They may occupy small patches of vegetation in fragmented landscapes and although the species prefers habitat with a rich shrub understory, they are known to occur in grassy woodlands and the presence of Eucalypts alone is sufficient to support populations in low densities. Feeds largely on nectar and pollen collected from banksias, eucalypts and bottlebrushes; an important pollinator of heathland plants such as banksias; soft fruits are eaten when flowers are unavailable. Also feeds on insects throughout the year; this feed source may be more important in habitats where flowers are less abundant such as wet forests. Shelters in tree hollows, rotten stumps, holes in the ground, abandoned bird-nests, Ringtail Possum (Pseudocheirus peregrinus) dreys or thickets of vegetation, (e.g. grass-tree skirts); nest-building appears to be restricted to breeding females; tree hollows are favoured but spherical nests have been found under the bark of eucalypts and in shredded bark in tree forks. Appear to be mainly solitary, each individual using several nests, with males having non-exclusive home-ranges of about 0.68 hectares and females about 0.35	BAM-C	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
			hectares. Young can be born whenever food sources are available, however most births occur between late spring and early autumn. Agile climbers, but can be caught on the ground in traps, pitfalls or postholes; generally nocturnal. Frequently spends time in torpor especially in winter, with body curled, ears folded and internal temperature close to the surroundings.			
Chalinolobus dwyeri Large-eared Pied Bat	BC Act: E EPBC Act: E BAM-C: Not applicable	Found mainly in areas with extensive cliffs and caves, from Rockhampton in Queensland south to Bungonia in the NSW Southern Highlands. It is generally rare with a very patchy distribution in NSW. There are scattered records from the New England Tablelands and North West Slopes.	Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (Petrochelidon ariel), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in caves, overhangs, mine adits and concrete structures such as derelict buildings. They remain loyal to the same cave over many years. Found in well-timbered areas containing gullies. The relatively short, broad wing combined with the low weight per unit area of wing indicates manoeuvrable flight. This species probably forages for small, flying insects below the forest canopy. Likely to hibernate through the coolest months. It is uncertain whether mating occurs early in winter or in spring.	PMST	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Climacteris picumnus victoriae Brown Treecreeper (south-eastern)	BC Act: V EPBC Act: V BAM-C: Not applicable	The Brown Treecreeper is endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges. The western boundary of the range of Climacteris picumnus victoriae runs approximately through Corowa, Wagga Wagga, Temora, Forbes, Dubbo and Inverell and along this line the subspecies intergrades with the arid zone subspecies of Brown Treecreeper Climacteris picumnus picumnus which then occupies the remaining parts of the state. The eastern subspecies lives in eastern NSW in eucalypt woodlands through central NSW and in coastal areas with drier open woodlands such as the Snowy River Valley, Cumberland Plains, Hunter Valley and parts of the Richmond and Clarence Valleys.	Found in eucalypt woodlands (including Box-Gum Woodland) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and River Red Gum (Eucalyptus camaldulensis) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses; usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging; also recorded, though less commonly, in similar woodland habitats on the coastal ranges and plains. Sedentary, considered to be resident in many locations throughout its range; present in all seasons or year-round at many sites; territorial year-round, though some birds may disperse locally after breeding. Gregarious and usually observed in pairs or small groups of 8 to 12 birds; terrestrial and arboreal in about equal proportions; active, noisy and conspicuous while foraging on trunks and branches of trees and amongst fallen timber; spend much more time foraging on the ground and fallen logs than other treecreepers. When foraging in trees and on the ground, they peck and probe for insects, mostly ants, amongst the litter, tussocks and fallen timber, and along trunks and lateral branches; up to 80% of the diet is comprised of ants; other invertebrates (including spiders, insects larvae, moths, beetles, flies, hemipteran bugs, cockroaches, termites and lacewings) make up the remaining percentage; nectar from Mugga Ironbark (Eucalyptus sideroxylon) and paperbarks, and sap from an unidentified eucalypt are also eaten, along with lizards and food scraps; young birds are fed ants, insect larvae, moths, craneflies, spiders and butterfly and moth larvae. Hollows in standing dead or live	PMST	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		The population density of this subspecies has been greatly reduced over much of its range, with major declines recorded in central NSW and the northern and southern tablelands. Declines have occurred in remnant vegetation fragments smaller than 300 hectares, that have been isolated or fragmented for more than 50 years.	trees and tree stumps are essential for nesting. The species breeds in pairs or co-operatively in territories which range in size from 1.1 to 10.7 ha (mean = 4.4 ha). Each group is composed of a breeding pair with retained male offspring and, rarely, retained female offspring. Often in pairs or cooperatively breeding groups of two to five birds.			

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Dasyurus maculatus Spotted-tailed Quoll	BC Act: V EPBC Act: E BAM-C: Not applicable	The range of the Spotted-tailed Quoll has contracted considerably since European settlement. It is now found in eastern NSW, eastern Victoria, south-east andnorth-eastern Queensland, and Tasmania. Only in Tasmania is it still considered relatively common.	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Quolls use hollow-bearing trees, fallen logs, other animal burrows, small caves and rock outcrops as den sites. Mostly nocturnal, although will hunt during the day; spend most of the time on the ground, although also an excellent climber and will hunt possums and gliders in tree hollows and prey on roosting birds. Use communal 'latrine sites', often on flat rocks among boulder fields, rocky cliff-faces or along rocky stream beds or banks. Such sites may be visited by multiple individuals and can be recognised by the accumulation of the sometimes characteristic 'twisty-shaped' faeces deposited by animals. A generalist predator with a preference for medium-sized (500g-5kg) mammals. Consumes a variety of prey, including gliders, possums, small wallabies, rats, birds, bandicoots, rabbits, reptiles and insects. Also eats carrion and takes domestic fowl. Females occupy home ranges of 200-500 hectares, while males occupy very large home ranges from 500 to over 4000 hectares. Are known to traverse their home ranges along densely vegetated creeklines.Average litter size is five; both sexes mature at about one year of age. Life expectancy in the wild is about 3-4 years.	2 29/11/2020	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Erythrotriorchis radiatus Red Goshawk	BC Act: E EPBC Act: E BAM-C: Not applicable	This unique Australian endemic raptor is distributed sparsely through northern and eastern Australia, from the western Kimberley Division of northern Western Australia to north-eastern Queensland and south to far north-eastern NSW, and with scattered records in central Australia. The species is very rare in NSW, extending south to about 30°S, with most records north of this, in the Clarence River Catchment, and a few around the lower Richmond and Tweed Rivers. Formerly, it was at least occasionally reported as far south as Port Stephens.	Red Goshawks inhabit open woodland and forest, preferring a mosaic of vegetation types, a large population of birds as a source of food, and permanent water, and are often found in riparian habitats along or near watercourses or wetlands. In NSW, preferred habitats include mixed subtropical rainforest, Melaleuca swamp forest and riparian Eucalyptus forest of coastal rivers.Adults appear to occupy territories throughout the year and breeding territories are traditionally used from year to year. Adults have large home-ranges, estimated in the Northern Territory to be as great as about 120 km2 for females and 200 km2 for males.Red Goshawks mainly eat medium to large birds, including species as large as Australian Brush-turkeys, Kookaburras, Tawny Frogmouths, Sulphur-crested Cockatoos and Rainbow Lorikeets, but they also take mammals, reptiles and insects.Red Goshawks usually hunt from concealed or, less often, exposed perches, but also fly close above or through forest or woodland searching for prey. They often hunt from perches early in the morning and late in the day and tend to hunt more on the wing at other times of the day.The breeding behaviour of Red Goshawks is not well known. Breeding is likely to be in spring and summer in southern Queensland and NSW. The birds lay clutches of 1-2 eggs between July and September, in a stick nest in a tall tree (>20 m tall) within 1 km of a watercourse or wetland. Young fledge around November and December.In winter in eastern Australia, the birds appear to move from nesting sites in the ranges to coastal plains, where they are associated with permanent wetlands.The age at which Red Goshawks first breed is not known, nor is the life expectancy. Young remain with their parents for at least 70-80 days after they leave the nest and may remain with their parents for 4-5 months.	PMST	Low	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Falco hypoleucos Grey Falcon	BC Act: V EPBC Act: V BAM-C: Not applicable	The Grey Falcon is sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. The breeding range has contracted since the 1950s with most breeding now confined to arid parts of the range. There are possibly less than 5000 individuals left. Population trends are unclear, though it is believed to be extinct in areas with more than 500mm rainfall in NSW.	Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast.Also occurs near wetlands where surface water attracts prey.Preys primarily on birds, especially parrots and pigeons, using high-speed chases and stoops; reptiles and mammals are also taken.Like other falcons it utilises old nests of other birds of prey and ravens, usually high in a living eucalypt near water or a watercourse; peak laying season is in late winter and early spring; two or three eggs are laid.	PMST	Low	PCT 599, 433
Gallinago hardwickii Latham's Snipe	BC Act: V EPBC Act: V BAM-C: Not applicable	Latham's Snipe is a non-breeding migrant to the south east of Australia including Tasmania, passing through the north and New Guinea on passage. Latham's Snipe breed in Japan and on the east Asian mainland.	Latham's Snipe are seen in small groups or singly in freshwater wetlands on or near the coast, generally among dense cover. They are found in any vegetation around wetlands, in sedges, grasses, lignum, reeds and rushes and also in saltmarsh and creek edges on migration. They also use crops and pasture.	PMST, Mig	Low	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Grantiella picta *Painted* Honeyeater	BC Act: V EPBC Act: V BAM-C: Not applicable	The Painted Honeyeater is nomadic and occurs at low densities throughout its range. The greatest concentrations of the bird and almost all breeding occurs on the inland slopes of the Great Dividing Range in NSW, Victoria and southern Queensland. During the winter it is more likely to be found in the north of its distribution.	Inhabits Boree/ Weeping Myall (Acacia pendula), Brigalow (A. harpophylla) and Box-Gum Woodlands and Box-Ironbark Forests.A specialist feeder on the fruits of mistletoes growing on woodland eucalypts and acacias. Prefers mistletoes of the genus Amyema.Insects and nectar from mistletoe or eucalypts are occasionally eaten.Nest from spring to autumn in a small, delicate nest hanging within the outer canopy of drooping eucalypts, she-oak, paperbark or mistletoe branches.	PMST	Moderate	PCT 599, 433
Haliaeetus leucogaster White-bellied Sea-Eagle	BC Act: V EPBC Act: Not listed BAM-C: Candidate	The White-bellied Sea-eagle is distributed around the Australian coastline, including Tasmania, and well inland along rivers and wetlands of the Murray Darling Basin. In New South Wales it is widespread along the east coast, and along all major inland rivers and waterways.	Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea.Occurs at sites near the sea or sea-shore, such as around bays and inlets, beaches, reefs, lagoons, estuaries and mangroves; and at, or in the vicinity of freshwater swamps, lakes, reservoirs, billabongs and saltmarsh. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, and forest (including rainforest). Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat. Nest trees are typically large emergent eucalypts and often have emergent dead branches or large dead trees nearby which are used as ‘guard roosts’. Nests are large structures built from sticks and lined with leaves or grass. Feed mainly on fish and freshwater turtles, but also waterbirds, reptiles, mammals and carrion.Hunts its prey from a perch or whilst in flight (by circling slowly, or by sailing along 10–20 m above the shore). Prey is usually carried to a feeding platform or (if small) consumed in flight, but some items are	BAM-C	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
			eaten on the ground.May be solitary, or live in pairs or small family groups consisting of a pair of adults and dependent young. Typically lays two eggs between June and September with young birds remaining in the nest for 65-70 days.;8|			
Hieraaetus morphnoides Little Eagle	BC Act: V EPBC Act: Not listed BAM-C: Candidate	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW.	Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used.Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter.Lays two or three eggs during spring, and young fledge in early summer.Preys on birds, reptiles and mammals, occasionally adding large insects and carrion.	BAM-C	Moderate	PCT 599, 433
Hirundapus caudacutus White-throated Needletail	BC Act: V EPBC Act: V BAM-C: Not applicable	Migratory and usually seen in eastern Australia from October to April. Breeds in forests in south-eastern Siberia, Mongolia, the Korean Penninsula and northern Japan June-August. Most often seen in eastern Australia before	Habitat present in mapped PCTs:599, 433	PMST, Mig	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		storms, low pressure troughs and approaching cold fronts and occasionally bushfire. These conditions are often used by insects to swarm (eg termites and ants) or tend to lift insects away from the surface which favours sighting of White-throated Needletails as they feed. More common in coastal areas, less so inland.				
Hoplocephalus bitorquatus Pale-headed Snake	BC Act: V EPBC Act: Not listed BAM-C: Candidate	A patchy distribution from north-east Queensland to the north-eastern quarter of NSW. In NSW it has historically been recorded from as far west as Mungindi and Quambone on the Darling Riverine Plains, across the north west slopes, and from the north coast from Queensland to Sydney.A small number of historical records are known for the New England Tablelands from Glenn Innes andTenterfield; however, the majority of records appear to be from sites of relatively lower elevation. Although the	The Pale-headed Snake is a highly cryptic species that can spend weeks at a time hidden in tree hollows.Found mainly in dry eucalypt forests and woodlands, cypress forest and occasionally in rainforest or moist eucalypt forest.In drier environments, it appears to favour habitats close to riparian areas.Shelter during the day between loose bark and tree-trunks, or in hollow trunks and limbs of dead trees.The diet of the Pale-headed Snake consists largely of tree frogs, although ground-dwelling frogs, lizards and small mammals are also taken.The Pale-headed Snake is relatively unusual amongst elapid snakes in that it is well adapted to climbing trees.	BAM-C	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		Pale-headed snake distribution is very cryptic, it now appears to have contracted to a patchy and fragmented distribution.				
Lathamus discolor Swift Parrot	BC Act: E EPBC Act: CE BAM-C: Not applicable	Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes Each year the Swift Parrot Recovery Team relies on the involvement of volunteers to identify areas the birds are visiting and what resources they are using. This information directly helps the recovery effort for this species. Surveys are conducted twice a year and aim to cover the migratory winter range of this species. Mainland surveys are held over one weekend in May	Migrates to the Australian south-east mainland between February and October.On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations.Favoured feed trees include winter flowering species such as Swamp Mahogany Eucalyptus robusta, Spotted Gum Corymbia maculata, Red Bloodwood C. gummifera, Forest Red Gum E. tereticornis, Mugga Ironbark E. sideroxylon, and White Box E. albens.Commonly used lerp infested trees include Inland Grey Box E. microcarpa, Grey Box E. moluccana, Blackbutt E. pilularis, and Yellow Box E. melliodora.Return to some foraging sites on a cyclic basis depending on food availability.Following winter they return to Tasmania where they breed from September to January, nesting in old trees with hollows and feeding in forests dominated by Tasmanian Blue Gum Eucalyptus globulus.	PMST	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		and a weekend in August every year. Hearing of observations of Swift Parrots outside of the count weekends are also greatly appreciated. All information helps and the Recovery Team is also very interested to receive sighting information of these birds outside the survey dates. Surveys are run in combination with the Regent Honeyeater survey effort, another Endangered migratory woodland bird. Contact BirdLife Australia on 03 9347 0757 or freecall 1800 665 766 to find out more about participating in the mainland Swift Parrot surveys				
Litoria booroolongensis Booroolong Frog	BC Act: E EPBC Act: E BAM-C: Candidate	The Booroolong Frog is restricted to NSW and north-eastern Victoria, predominantly along the western-flowing streams of the Great Dividing Range. It has disappeared from much of the Northern Tablelands, however several populations have recently been recorded in the Namoi catchment.	Live along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses. Adults occur on or near cobble banks and other rock structures within stream margins.Shelter under rocks or amongst vegetation near the ground on the stream edge.Sometimes bask in the sun on exposed rocks near flowing water during summer.Breeding occurs in spring and early summer and tadpoles metamorphose in late summer to early autumn.Eggs are laid in submerged rock crevices and tadpoles grow in slow-flowing connected or isolated pools.	1, PMST 12/12/2012 BAM-C	Moderate	PCT 599

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		The species is rare throughout most of the remainder of its range.				
Litoria daviesae Davies' Tree Frog	BC Act: V EPBC Act: V BAM-C: Not applicable	Davies' Tree Frog occurs as a series of small populations along the eastern escarpment of the Great Divide and adjacenttablelands above 400 m elevation.Its habitatishighly fragmented and restricted to theregion from Carrai Plateauto the Barrington Tops area.	Davies' Tree Frog occurs in permanent, slow-flowing small streams above 400 m elevation, mostly in the headwaters of eastern-flowing streams (although it does occur in the headwaters of the western-flowing Peel River).On the tablelands, riparian habitat may be montane heath or dry open forest with fringing tea tree, tussocks and ferns. Escarpment habitat is typically rainforest and wet sclerophyll with a rainforest understorey.Breeding occurs in spring and early summer. Daytime calling is common during the breeding season. At night, males can be found calling from perched positions on trees and shrubs 0.5 - 1.5 m above streams.The species has rarely been observed away from the riparian zone, implying a reliance on that zone for breeding and foraging. However, nothing is known of habitat use outside the breeding season.	PMST	Low	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Lophoictinia isura Square-tailed Kite	BC Act: V EPBC Act: Not listed BAM-C: Candidate	The Square-tailed Kite ranges along coastal and subcoastal areas from south-western to northern Australia, Queensland, NSW and Victoria. In NSW, scattered records of the species throughout the state indicate that the species is a regular resident in the north, north-east and along the major west-flowing river systems. It is a summer breeding migrant to the south-east, including the NSW south coast, arriving in September and leaving by March.	Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses.In arid north-western NSW, has been observed in stony country with a ground cover of chenopods and grasses, open acacia scrub and patches of low open eucalypt woodland.Is a specialist hunter of passerines, especially honeyeaters, and most particularly nestlings, and insects in the tree canopy, picking most prey items from the outer foliage. Appears to occupy large hunting ranges of more than 100 square km.Breeding is from July to February, with nest sites generally located along or near watercourses, in a fork or on large horizontal limbs.	BAM-C	Moderate	PCT 599, 433
Maccullochella peelii Murray Cod	BC Act: EPBC Act: V BAM-C: Not applicable	Murray Cod, also referred to as cod or codfish, were once abundant throughout the Murray-Darling river system, but overfishing and environmental changes have drastically reduced its numbers. The species has been selectively stocked in other river systems in NSW, Victoria and Western Australia, but has generally failed to establish itself in those areas. Murray Cod	Within the broad area of occurrence along the stretches of the MDB (approximately 12,245 km of waterways), the Murray cod has specific habitat requirements, and depends on instream woody structures and complex structural features in waterways, such as large rocks, large snags and smaller structural woody habitat, undercut banks and over-hanging vegetation (Cadwallader & Backhouse 1983; Rowland 1988a; Crook & Robertson 1999; Harris & Rowland1996; Koehn 1996; Rowland 2005). Complex instream structure provides sheltering and ambush habitat for the Murray cod at all life-history stages (DoE 2016). Juveniles, in particular, require complex habitat structure to shelter from fast-flowing water, while larger individuals require structural features as ambush points for feeding. While nursery habitat for post-larval fish have not been identified, juveniles less	PMST	Low	Key Fish Habitat/Wiles Gully

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		generally prefer slow flowing, turbid water in streams and rivers, favouring deeper water around boulders, undercut banks, overhanging vegetation and logs. Small numbers are still present in the Nepean River and Yarra River.	than one year old have been found in main river channels (Koehn & Harrington 2005).			
Melanodryas cucullata cucullata South-eastern Hooded Robin	BC Act: E EPBC Act: E BAM-C: Not applicable	The Hooded Robin is widespread, found across Australia, except for the driest deserts and the wetter coastal areas - northern and eastern coastal Queensland and Tasmania. However, it is common in few places, and rarely found on the coast. It is considered a sedentary species, but local seasonal movements are Moderate. The south-eastern form (subspecies cucullata) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies picata. Two	Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas.Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.Often perches on low dead stumps and fallen timber or on low-hanging branches, using a perch-and-pounce method of hunting insect prey.Territories range from around 10 ha during the breeding season, to 30 ha in the non-breeding season.May breed any time between July and November, often rearing several broods.The nest is a small, neat cup of bark and grasses bound with webs, in a tree fork or crevice, from less than 1 m to 5 m above the ground.The nest is defended by both sexes with displays of injury-feigning, tumbling across the ground.A clutch of two to three is laid and incubated for fourteen days by the female. Two females often cooperate in brooding	PMST	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		other subspecies occur outside NSW.				
Motacilla flava Yellow Wagtail	BC Act: EPBC Act: BAM-C: Not applicable	This species breeds in the East Palearctic and has a foothold in North America in Alaska. Most migrate to south Asia and Australia in the winter. Vagrant individuals can occur away the winter quarters at migration time. For example, on Palau in Micronesia migrant flocks of this species – apparently of the Bering Sea yellow wagtail, and including many adult males – are regularly seen, while further north on the Marianas, only the occasional stray individuals (usually females or immatures) are encountered.	Favouring wet meadows, marshland, grassy and muddy lakeshores. Occurs in fields and often near livestock during migration	Mig	Low	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		Since the advent of easier DNA testing of droppings and clarification of its identification features, it has proved to be a surprisingly frequent late autumn and winter vagrant in western and northwestern Europe, with ten or more records in some autumns in both Britain and Sweden, and multiple cases of birds overwintering				
Neophema chrysostoma Blue-winged Parrot	BC Act: V EPBC Act: V BAM-C: Not applicable	South Australia, and the north-western, central and eastern parts of Tasmania (Map 1; Emison et al. 1987; Higgins 1999). A partial migrant, variable numbers of birds migrate across Bass Strait in winter, apparently making the flight non-stop based on the scarcity of records from the Bass Strait islands. During the non-breeding period, from autumn to early spring, birds are recorded from northern Victoria, eastern South Australia, south-western Queensland and western New South Wales, with	Habitat critical to the survival of the blue-winged parrot include areas that include: • Foraging and staging habitats found from coastal, sub-coastal and inland areas, right through to semi-arid zones including: grasslands, grassy woodlands and semi-arid chenopod shrubland with native and introduced grasses, herbs and shrubs. • Wetlands both near the coast and in semi-arid zones used for foraging and staging. • Eucalypt forests and woodlands within the breeding range in Tasmania, coastal southeastern South Australia and southern Victoria. • Live and dead trees and stumps with suitable hollows within the breeding range	PMST	Low	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		some birds reaching south-eastern New South Wales and eastern Victoria, particularly on the southern migration (Higgins 1999).				
Ninox connivens Barking Owl	BC Act: V EPBC Act: Not listed BAM-C: Candidate	The Barking Owl is found throughout continental Australia except for the central arid regions. Although still common in parts of northern Australia, the species has declined greatly in southern Australia and now occurs in a wide but sparse distribution in NSW. Core populations exist on the western slopes and plainsand in some northeast coastal and escarpment forests.Many populationscrashed as woodland on fertile soils was cleared over the past century, leaving linear riparian strips of remnant trees as the last inhabitable areas. Surveys in 2001 demonstrated that the Pilliga Forest supported the largest population in southern Australia.The owls sometimes extend their home range into urban	Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats (e.g. western NSW) due to the higher density of prey found on these fertile riparian soils.Roost in shaded portions of tree canopies, including tall midstorey trees with dense foliage such as Acacia and Casuarina species. During nesting season, the male perches in a nearby tree overlooking the hollow entrance.Preferentially hunts small arboreal mammals such as Squirrel Gliders and Common Ringtail Possums, but when loss of tree hollows decreases these prey populations the owl becomes more reliant on birds, invertebrates and terrestrial mammals such as rodents and rabbits. Can catch bats and moths on the wing, but typically hunts by sallying from a tall perch.Requires very large permanent territories in most habitats due to sparse prey densities. Monogamous pairs hunt over as much as 6000 hectares, with 2000 hectares being more typical in NSW habitats.Two or three eggs are laid in hollows of large, old trees. Living eucalypts are preferred though dead trees are also used. Nest sites are used repeatedly over years by a pair, but they may switch sites if disturbed by predators (e.g. goannas).Nesting occurs during mid-winter and spring, being variable between pairs and among years. As a rule of thumb, laying occurs during August and fledging in November. The female incubates for 5 weeks, roosts outside the hollow when chicks are 4 weeks old, then fledging occurs 2-3 weeks later. Young are dependent on their parents for	BAM-C	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		areas, hunting birds in garden trees and insects attracted to streetlights. Extensive wildfires in 2019-20 reduced habitat quality further, burnt many old, hollow-bearing trees needed as refuge by prey species and reduced the viability of some regional owl populations.	several months.Territorial pairs respond strongly to recordings of Barking Owl calls from up to 6 km away, though humans rarely hear this response farther than 1.5 km. Because disturbance reduces the pair's foraging time, and can pull the female off her eggs even on cold nights, recordings should not be broadcast unnecessarily nor during the nesting season.			
Nyctophilus corbeni Corben's Long-eared Bat	BC Act: V EPBC Act: V BAM-C: Not applicable	Overall, the distribution of the south eastern form coincides approximately with the Murray Darling Basin with the Pilliga Scrub region being the distinct stronghold for this species.	Inhabits a variety of vegetation types, including mallee, bulloke Allocasuarina leuhmanni and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of NSW and southern Queensland.Roosts in tree hollows, crevices, and under loose bark.Slow flying agile bat, utilising the understorey to hunt non-flying prey - especially caterpillars and beetles - and will even hunt on the ground.Mating takes place in autumn with one or two young born in late spring to early summer.	PMST	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Petauroides volans Greater Glider (southern and central)	BC Act: E EPBC Act: E BAM-C: Not applicable	The Southern Greater Glider occurs in eastern Australia, in eucalypt forests and woodlands, where it has a broad distribution from around Proserpine in Queensland, south through NSW and the Australian Capital Territory into Victoria.	Feeds exclusively on eucalypt leaves, buds, flowers and mistletoe.Shelter during the day in tree hollows and will use up to 18 hollows in their home range. Recorded using hollows with a minimum diameter of 8 cm.Occupy a relatively small home range with an average size of 1 to 3 ha.Give birth to a single young in late autumn or early winter which remains in the pouch for approximately 4 months and is independent at 9 months of age.Usually solitary, though mated pairs and offspring will share a den during the breeding season and until the young are independent.Can glide up to a horizontal distance of 100m including changes of direction of as much as 90 degrees.Very loyal to their territory.	PMST	Low	PCT 599, 433
Petaurus norfolcensis Squirrel Glider	BC Act: V EPBC Act: Not listed BAM-C: Candidate	The species is widely though sparsely distributed in eastern Australia, from northern Queensland to western Victoria.	Inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas.Prefers mixed species stands with a shrub or Acacia midstorey.Live in family groups of a single adult male one or more adult females and offspring.Require abundant tree hollows for refuge and nest sites.Diet varies seasonally and consists of Acacia gum, eucalypt sap, nectar, honeydew and manna, with invertebrates and pollen providing protein.	BAM-C	Moderate	PCT 599, 433
Phascolarctos cinereus Koala	BC Act: E EPBC Act: E BAM-C: Candidate	The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In New South Wales, koala populations are found on the central and north coasts, southern highlands, southern and	Inhabit eucalypt woodlands and forests.Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species.Inactive for most of the day, feeding and moving mostly at night.Spend most of their time in trees, but will descend and traverse open ground to move between trees.Home range size varies with quality of habitat, ranging from less than two ha to several hundred hectares in size.Generally solitary, but have complex social hierarchies based on a dominant male with a territory overlapping several females and sub-ordinate males on the	1 15/06/2022 BAM-C	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		northern tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the plains west of the Great Dividing Range.	periphery.Females breed at two years of age and produce one young per year.			
Polytelis swainsonii Superb Parrot	BC Act: V EPBC Act: V BAM-C: Not applicable	The Superb Parrot is found throughout eastern inland NSW. On the South-western Slopes their core breeding area is roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west. Birds breeding in this region are mainly absent during winter, when they migrate north to the region of the upper Namoi and Gwydir Rivers. The other main breeding sites are in the Riverina along the corridors of the Murray, Edward and Murrumbidgee Rivers where birds are present all year round. It is estimated that there are less than 5000 breeding pairs left in the wild.	Inhabit Box-Gum, Box-Cypress-pine and Boree woodlands and River Red Gum forest.In the Riverina superb parrots nest in the hollows of large trees (dead or alive) mainly in tall riparian River Red Gum forest or woodland. On the South West Slopes and Southern Tablelands nest trees can be in open Box-Gum woodland or isolated living or dead paddock trees. Species known to be used are Blakely's Red Gum, Yellow Box, Apple Box and Red Box.Superb Parrots nest in tree hollows with an entrance diameter of 6 cm or wider, and that are at least 3.5 m above the groundNest in small colonies, often with more than one nest in a single tree.Breed between September and January, with nesting typically from October to late December.May forage up to 10 km from nesting sites, primarily in grassy box woodland.Feed in trees and understorey shrubs and on the ground and their diet consists mainly of grass seeds and herbaceous plants. Also eaten are fruits, berries, nectar, buds, flowers, insects and grain.	PMST	Moderate	PCT 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Pseudomys novaehollandiae New Holland Mouse	BC Act: Not listed EPBC Act: V BAM-C: Not applicable	The New Holland Mouse has a fragmented distribution across Tasmania, Victoria, New South Wales and Queensland. Genetic evidence indicates that the New Holland Mouse once formed a single continuous population on mainland Australia and the distribution of recent subfossils further suggest that the species has undergone a large range contraction since European settlement. Total population size of mature individuals is now estimated to be less than 10,000 individuals although, given the number of sites from which the species is known to have disappeared between 1999 and 2009, it is likely that the species' distribution is actually smaller than current estimates.	Known to inhabit open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes It is a social animal, living predominantly in burrows shared with other individuals Distribution is patchy in time and space, with peaks in abundance during early to mid stages of vegetation succession typically induced by fire	PMST	Low	None

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Pteropus poliocephalus Grey-headed Flying-fox	BC Act: V EPBC Act: V BAM-C: Not applicable	Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. In times of natural resource shortages, they may be found in unusual locations.	Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.Individual camps may have tens of thousands of animals and are used for mating, and for giving birth and rearing young.Annual mating commences in January and conception occurs in April or May; a single young is born in October or November.Site fidelity to camps is high; some camps have been used for over a century.Can travel up to 50 km from the camp to forage; commuting distances are more often <20 km.Feed on the nectar and pollen of native trees, in particular Eucalyptus, Melaleuca and Banksia, and fruits of rainforest trees and vines.Also forage in cultivated gardens and fruit crops.;8|	PMST	Moderate	PCT 599, 433
Rostratula australis Australian Painted Snipe	BC Act: E EPBC Act: E BAM-C: Not applicable	The Australian Painted Snipe is restricted to Australia. Most recordsare from the south east, particularly the Murray Darling Basin, with scattered records across northern Australia and historical records from around the Perth region in Western Australia. In NSW many records are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near	Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber.Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds.The nest consists of a scrape in the ground, lined with grasses and leaves.Breeding is often in response to local conditions; generally occurs from September to December. Incubation and care of young is all undertaken by the male only.Forages nocturnally on mud-flats and in shallow water. Feeds on worms, molluscs, insects and some plant-matter.	PMST	Low	None

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
		Balldale and Wanganella. Other important locations with recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys.				
Stagonopleura guttata Diamond Firetail	BC Act: V EPBC Act: V BAM-C: Not applicable	The Diamond Firetail is endemic to south-eastern Australia, extending from central Queensland to the Eyre Peninsula in South Australia. It is widely distributed in NSW, with a concentration of records from the Northern, Central and Southern Tablelands, the Northern, Cental and South Western Slopes and the North West Plains and Riverina. Not commonly found in coastal districts, though there are records from near Sydney, the Hunter Valley and the Bega Valley. This species has a scattered distribution over the rest of NSW, though is very rare west of the Darling River.	Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands.Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities.Often found in riparian areas (rivers and creeks), and sometimes in lightly wooded farmland.Feeds exclusively on the ground, on ripe and partly-ripe grass and herb seeds and green leaves, and on insects (especially in the breeding season).Usually encountered in flocks of between 5 to 40 birds, occasionally more.Groups separate into small colonies to breed, between August and January.Nests are globular structures built either in the shrubby understorey, or higher up, especially under hawk's or raven's nests.Birds roost in dense shrubs or in smaller nests built especially for roosting.;8|Appears to be sedentary, though some populations move locally, especially those in the south.;9|Has been recorded in some towns and near farm houses.;10|	PMST	Moderate	PCT 599, 433

Species	Listing status	Distribution	Habitat	Records	Likelihood of occurrence	Associated habitat
Tyto novaehollandiae Masked Owl	BC Act: V EPBC Act: Not listed BAM-C: Candidate	Extends from the coast where it is most abundant to the western plains. Overall records for this species fall within approximately 90% of NSW, excluding the most arid north-western corner. There is no seasonal variation in its distribution.	Lives in dry eucalypt forests and woodlands from sea level to 1100 m.A forest owl, but often hunts along the edges of forests, including roadsides.The typical diet consists of tree-dwelling and ground mammals, especially rats.Pairs have a large home-range of 1000 hectares or more, depending on prey availability.Roosts and breeds in moist eucalypt forested gullies, using large tree hollows or sometimes caves for nesting.	BAM-C	Moderate	PCT 599, 433
Uvidicolus sphyrurus Border Thick-tailed	BC Act: V EPBC Act: V BAM-C: Candidate	Found only on the tablelands and slopes of northern NSW and southern Queensland, reaching south to Tamworth and west to Moree. Most common in the granite country of the New England Tablelands. Occurs at sites ranging from 500 to 1100 m elevation. Populations are mostly fragmented, with over 50 discrete sites currently known that are separated by at least 2 km.	As implied by another of its common names (Granite Thick-tailed Gecko), this species often occurs on steep rocky or scree slopes, especially granite. Recent records from basalt and metasediment slopes and flats indicate its habitat selection is broader than formerly thought and may have extended into areas that were cleared for agriculture.Favours forest and woodland areas with boulders, rock slabs, fallen timber and deep leaf litter. Occupied sites often have a dense tree canopy that helps create a sparse understorey.These Geckos are active at night and shelter by day under rock slabs, in or under logs, and under the bark of standing trees.	PMST BAM-C	Moderate	PCT 599, 433

Appendix C Flora species recorded

Scientific name	Common name	Exotic
Acacia paradoxa	Kangaroo Thorn	
Aira spp.	-	*
Angophora floribunda	Rough-barked Apple	
Aristida spp.	-	
Austrostipa scabra	Speargrass	
Austrostipa spp.	-	
Avena spp.	Oats	*
Bifora testiculata	-	*
Boerhavia spp.	-	
Bothriochloa macra	Red Grass	
Brachyscome spp.	-	
Bursaria spinosa	Native Blackthorn	
Calotis spp.	-	
Cassinia quinquefaria	-	
Centaurium spp.	-	*
Cheilanthes sieberi subsp. sieberi	Rock Fern	
Chloris truncata	Windmill Grass	
Chloris virgata	Feathertop Rhodes Grass	*
Chrysocephalum apiculatum	Common Everlasting	
Cirsium vulgare	Spear Thistle	*
Conyza bonariensis	Flaxleaf Fleabane	*
Correa spp.	-	
Cyclospermum leptophyllum	Slender Celery	*
Cyperus aggregatus	-	*
Cyperus brevifolius	-	*

Scientific name	Common name	Exotic
Daviesia ulicifolia	Gorse Bitter Pea	
Dichondra repens	Kidney Weed	
Digitaria sanguinalis	Crab Grass	*
Einadia nutans	Climbing Saltbush	
Eleusine tristachya	Goose Grass	*
Eragrostis leptostachya	Paddock Lovegrass	
Eucalyptus albens	White Box	
Eucalyptus blakelyi	Blakely's Red Gum	
Eucalyptus melliodora	Yellow Box	
Euphorbia prostrata	Red Caustic Weed	*
Galium spp.	-	
Geranium solanderi	Native Geranium	
Geranium spp.	-	
Glycine clandestina	Twining glycine	
Glycine tabacina	Variable Glycine	
Gomphocarpus physocarpus	Balloon Cotton Bush	*
Heliotropium amplexicaule	Blue Heliotrope	*
Hypericum gramineum	Small St John's Wort	
Hypochoeris radicata	Catsear	*
Juncus spp.	-	
Lepidium africanum	Common Peppercress	*
Lomandra longifolia	Spiny-headed Mat-rush	
Medicago sativa	Lucerne	*
Modiola spp.	-	*
Oxalis perennans	-	
Oxytes brachypoda	Large Tick-trefoil	

Scientific name	Common name	Exotic
Paspalidium spp.		
Phalaris canariensis	Canary Grass	*
Pimelea curviflora var. divergens	-	
Plantago lanceolata	Lamb's Tongues	*
Polygonum aviculare	Wireweed	*
Portulaca oleracea	Pigweed	
Rosa rubiginosa	Sweet Briar	*
Rostellularia adscendens subsp. adscendens	-	
Rumex acetosella	Sheep Sorrel	*
Rytidosperma spp.	-	
Salvia verbenaca	Vervain	*
Sida corrugata	Corrugated Sida	
Sida rhombifolia	Paddy's Lucerne	*
Silybum marianum	Variegated Thistle	*
Solanum nigrum	Black-berry Nightshade	*
Sporobolus creber	Slender Rat's Tail Grass	
Stellaria media	Common Chickweed	*
Tribulus terrestris	Cat-head	*
Trifolium arvense	Haresfoot Clover	*
Urochloa panicoides	Urochloa Grass	*
Urtica urens	Small Nettle	*
Verbena bonariensis	Purpletop	*
Vittadinia spp.	Fuzzweed	
Vulpia spp.	Rat's-tail Fescue	*
Wahlenbergia spp.	Bluebell	

Scientific name	Common name	Exotic
Xanthium spinosum	Bathurst Burr	*
Zornia dyctiocarpa	Zornia	

Appendix D Fauna species recorded

Common name	Scientific name	Exotic
Aves		
Australian Magpie	*Gymnorhina tibicen*	
Australian Raven	*Corvus coronoides*	
Australian Wood Duck	*Chenonetta jubata*	
Crested Pigeon	*Ocyphaps lophotes*	
Crimson Rosella	*Platycercus elegans*	
Eastern Rosella	*Platycercus eximius*	
Superb Fairy Wren	*Malurus cyaneus*	
Galah	*Eolophus roseicapilla*	
Grey Butcherbird	*Cracticus torquatus*	
Kookaburra	*Dacelo novaeguineae*	
Masked Lapwing	*Vanellus miles*	
Nankeen Kestrel	*Falco cenchroides*	
Noisy Miner	*Manorina melanocephala*	
Pied Currawong	*Strepera graculina*	
Sulphur-crested Cockatoo	*Cacatua galerita*	
Wedge-tailed Eagle	*Aquila audax*	
White-winged Chough	*Corcorax melanorhamphos*	
Willie Wagtail	*Rhipidura leucophrys*	
Mammalia		
Eastern Grey Kangaroo	*Macropus giganteus*	
European Rabbit	*Oryctolagus cuniculus*	*
Feral Cat	*Felis catus*	*
Feral Pig	*Sus scrofa*	*
Red Fox	*Vulpes vulpes*	*