Review of Environmental Factors

9GG/9G9 132kV Overhead Powerline Rebuild, from Forest Glen Solar Farm to Dubbo South Zone Substation

July 2025

Project No. 806986

Essential Energy

essentialenergy.com.au

Table 1: Revision History

VERSION	NATURE OF REVISION
Draft 01	Draft prepared for Essential Energy's Environmental Services peer review
Draft 02	Draft prepared for Essential Energy's Project Manager and Environmental Services Manager review
Final 01	Final prepared for Essential Energy determination

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Acronyms and Abbreviations

ACRONYM/ABBREVIATION	DETAIL
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
ADSS	All-dielectric self-supporting. A type of fibre optic cable which is nonconductive, self-supporting and is capable of being erected under tension between supports.
ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
ASS	Acid Sulfate Soils
AASS	Actual Acid Sulfate Soils
AEMO	Australian Energy Market Operator
BDAR	Biodiversity Development Assessment Report
CEMP	Construction Environmental Management Plan
Consequence	The outcome of an event expressed qualitatively or quantitatively, being a loss, injury, disadvantage or gain.
dB(A)	Decibels (A) weighted
DCCEEW (Cth)	Department of Climate Change, Energy, the Environment and Water (Commonwealth)
DCCEEW (NSW)	Department of Climate Change, Energy, the Environment and Water (New South Wales)
DPHI	Department of Planning, Housing and Infrastructure
DPE	Department of Planning and Environment (Former NSW Government Department)
DP	Deposited Plan
DRC	Dubbo Regional Council
EMF	Electric and Magnetic Fields
Environmental Aspect	Any element of an organisation's activities, products or services that can interact with the environment.
Environmental Impact	Any change in the environment whether adverse or beneficial, wholly or partially resulting from organisation activities, products or services.
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Reg	*Environmental Planning and Assessment Regulation 2021*

EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPIs	Environmental Planning Instruments
ES Act	*Electricity Supply Act 1995*
ESD	Ecologically Sustainable Development
EWP	Elevated Work Platforms
FSC	Field Service Centre (Essential Energy)
FM Act	*Fisheries Management Act 1994*
GHG	Greenhouse Gas
Ha	Hectare
IPC	Independent Planning Commission
kV	Kilovolts
LALC	Local Aboriginal Land Council
Likelihood	A qualitative description of probability or frequency
LEP	Local Environmental Plan
LG Act	*Local Government Act 1993*
LGA	Local Government Area
mG	Milligauss
MVA	Mega Volt Amps
NES	National Environmental Significance
NO_x	Oxides of Nitrogen
NPW Act	*National Parks and Wildlife Act 1974*
PASS	Potential Acid Sulfate Soils
pHF	Field pH
pHFOX	Field pH peroxide test
POEO Act	*Protection of the Environment Operations Act 1997*
REF	Review of Environmental Factors
RF Act	*Rural Fires Act 1997*
Roads Act	*Roads Act 1993*
SCADA	Supervisory control and data acquisition. A computer-based system for gathering and analysing real-time data to monitor and control equipment that deals with critical and time-sensitive materials or events.
SEPP	State Environmental Planning Policy
SHI	State Heritage Inventory

SHR	State Heritage Register
SIS	Species Impact Statement
SWMP	Soil and Water Management Plan
T&I SEPP	*State Environmental Planning Policy (Transport and Infrastructure) 2021*
WM Act	*Water Management Act 2000*

REF Approval Form

PROJECT AND PROPONENT DETAIL

REF Name	9GG/9G9 132kV Overhead Powerline Rebuild, from Forest Glen Solar Farm to Dubbo South Zone Substation
Project Number	806986
REF prepared by	Tim Haydon
Title	Environmental Senior Specialist
Qualifications	Bachelor of Environmental Science
Proponent Name	Essential Energy
Proponent Address	8 Buller Street, Port Macquarie NSW 2444

This Review of Environmental Factors (REF) assesses the potential impacts that may result from the proposed activities as outlined in "Description of the Proposal" section of this report.

Essential Energy is a state-owned corporation and is a determining authority as defined in the *Environmental Planning and Assessment Act 1979* (EP&A Act). The proposal satisfies the definition of an 'activity' under the EP&A Act, and as such Essential Energy must assess and consider the environmental impacts of the proposal before determining whether to proceed. This REF has been prepared in accordance with Section 5.5 of the EP&A Act and Section 171 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Reg). The EP&A Act requires Essential Energy to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity. The EP&A Reg sets out environmental factors to be considered in making that assessment. If the activity is considered likely to significantly affect the environment, additional assessment requirements under the EP&A Act would be required.

Section 5.7 of the EP&A Act states that a determining authority shall not carry out an activity, or grant an approval in relation to an activity, that is likely to significantly affect the environment (including critical habitat) or threatened species, populations or ecological communities, or their habitats, unless the determining authority has examined and considered an Environmental Impact Statement or Species Impact Statement in respect of the activity.

The REF has addressed the matters that are required to be considered by Part 5, Division 5.1 of the EP&A Act, with the conclusion that if the activity is carried out as described, it is not likely to have a significant effect on the environment (including critical habitat) or threatened species, populations, ecological communities or their habitats, and accordingly an Environmental Impact Statement is not required. The mitigation strategies forming part of the activity are fully considered and discussed in the REF.

The activity was also assessed against the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). As the proposed activity will not have, and is not likely to have a significant impact on matters of national environmental significance, a referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) is not required.

The proposed activity is permissible under all relevant state and federal legislation, including the EPBC Act and the *Biodiversity Conservation Act 2016* (NSW).

Under *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP) the activity is classified as development for the purpose of an electricity transmission or distribution network undertaken by or on behalf of a public authority, and is hence permitted on the land without the requirement for development consent.

Declaration

The Review of Environmental Factors for the proposed activity has been assessed by Essential Energy.

Considering the assessment of the impacts, including Sections 1.7 and 5.5 of the *Environmental Planning and Assessment Act 1979* and clause Section 171 of the *Environmental Planning and Assessment Regulations 2021*, it is concluded that:

- There is not likely to be a significant environmental effect as a result of the construction, operation and maintenance of the activity and an Environmental Impact Statement is not required; and
- A Species Impact Statement (SIS), or Biodiversity Development Assessment Report (BDAR) is not required.

AUTHOR DECLARATION

I certify that I have reviewed and endorsed the contents of this REF document and, to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation and the Guidelines approved under clause 170 of the EP&A Regulation, and the information it contains is neither false nor misleading

REF prepared by	Tim Haydon
Signature	Tim Haydon Digitally signed by Tim Haydon Date: 2025.07.10 20:35:00 +10'00'
Title	Environmental Senior Specialist

PEER REVIEW DECLARATION

I certify that I have reviewed and endorsed the contents of this REF document and, to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation and the Guidelines approved under clause 170 of the EP&A Regulation, and the information it contains is neither false nor misleading

Peer Review by	Nathan Hegerty
Signature	Nathan Hegerty Digitally signed by Nathan Hegerty Date: 2025.07.11 07:34:48 +10'00'
Title	Environmental Senior Specialist

PROJECT MANAGER REVIEW DECLARATION

The assessment has been reviewed and it is recommended that the Activity may now proceed subject to the implementation of the recommendations and mitigation measures contained in the REF documentation.

Project Manager Review by	Nicholas Turner
Signature	Nicholas Turner Digitally signed by Nicholas Turner Date: 2025.07.11 10:21:56 +10'00'
Title	Senior Program/Project Manager

DETERMINATION

Considering the assessment of the impacts, including sections 1.7 and 5.5 of the *Environmental Planning and Assessment Act 1979* and clause section 171 of the *Environmental Planning and Assessment Regulation 2021*, it is determined that there is not likely to be a significant environmental effect as a result of the construction, operation and maintenance of the 9GG/9G9 132kV Overhead Powerline Rebuild, from Forest Glen Solar Farm to Dubbo South Zone Substation. Neither an Environmental Impact Statement (EIS), nor SIS, nor BDAR is required.

The Activity may now proceed subject to obtaining and complying with the relevant approvals as identified in the REF and subject to the implementation of the recommendations and mitigation measures contained in the REF documentation.

	Brett Hayward Digitally signed by Brett Hayward Date: 2025.07.11 13:41:14 +10'00'
Determining Authority	Brett Hayward
Title	Environmental Services Manager

Executive Summary

Background/Justification

Essential Energy has a number of existing large customers in the Dubbo region and has recently received several new major connection applications/enquiries including:

- Forest Glen Solar Farm
- Parkes Special Activation Precinct
- Future Mine Connections
- Other potential renewable energy projects

To cater for the known and expected connections, Essential Energy is proposing to design, construct, operate and maintain a dual circuit 132 kilovolt (kV) overhead powerline to connect to the existing the Dubbo South Zone Substation (ZS) with the Forest Glen Solar Farm switching station. The new powerline will strengthen Essential Energy's existing electricity network in the broader area, as well as increase its capacity, which will help support future electricity connections and reliability.

The Proposal

The proposal comprises the construction, operation and maintenance of a new 132kV dual circuit powerline from the existing Dubbo South ZS through to the approved (and currently under construction) switching station at Forest Glen Solar Farm (FGSF), Dubbo, New South Wales (NSW). The proposal will predominately be located within the existing cleared corridor of the existing 943/2 132kV single circuit overhead powerline, replacing the current infrastructure, with a minor realignment through Taronga Western Plains Zoo (TWPZ) land. The dual circuit will comprise a 132kV feeder to be named 9GG (between Dubbo South ZS and FGSF) and a second 132kV feeder to be named 9G9 that will connect to the Wheelers Lane ZS.

The proposal will encompass a corridor of approximately 18 kilometres (km) by 40 metres (m) (with minor variable width where stays are required), encompassing approximately 720,000 square metres (m^2) or 72 hectares (ha), predominately within an existing cleared overhead powerline corridor. Access will be gained within the corridor where possible, though some locations, because of topographical or environmental features (e.g., waterways) may require access via existing farm access tracks, thoroughfares or passageways.

Project options considerations

One option would be to refrain from undertaking any further development of the network in the area. The consequences of Essential Energy doing nothing would be that, as years passed, supply interruptions would occur more frequently and affect more people, and the electricity generated from the surrounding renewable energy infrastructure would not be as effectively distributed throughout the network. In addition, on a do-nothing basis, important network augmentations would not occur resulting in a capacity constrained network that does not enable additional generation or load customers to connect to the electricity network. The do-nothing approach would not meet Essential Energy's network licence obligations to provide connection to renewable energy projects throughout the region.

The following factors determined the suitability of the preferred site:

- Being predominately located within an existing powerline corridor

- Ability to decommission existing 943/2 and predominately rebuild along same alignment, with limited outages
- Realignment within the TWPZ land, to be less intrusive on the 'Serengeti' development
- Relative proximity to planned and approved renewable energy projects in the region
- Being predominantly located on an area subject to heavy modification and disturbance from agricultural activities
- Being on rural land with limited sensitive receptors, or where sensitive receptors exist, they are already subject to powerline infrastructure
- Cost effectiveness by consolidating EE assets.

Statutory Planning and Legislation

Clause 2.44 of *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP) applies to electricity transmission and distribution activities undertaken by an energy supply authority. Clause 2.44 states that development for the purpose of a transmission or distribution network may be carried out by or on behalf of an electricity supply authority or public authority without consent on any land, with additional requirements for land reserved under the *National Parks and Wildlife Act 1974*.

As the activity does not require development consent, Essential Energy is the designated determining authority. Additionally, whilst Essential Energy does not require development consent to undertake the proposed activity, it has an obligation under Part 5, Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to consider the environmental impacts of the activity.

Specifically, Essential Energy has a statutory obligation to examine and take into account, to the fullest extent possible, all matters affecting or likely to affect the environment by reason of this activity. This REF has been prepared to facilitate the determination through consideration of the relevant factors specified in section 5.5 of the EP&A Act and clause 171 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Reg).

Environmental Impact Assessment

A number of potential environmental impacts associated with the project have been avoided or reduced to acceptable levels during the design development and assessment stages. However, the project may still result in some impacts including air quality (dust), noise, traffic, waste generation, ecology and visual amenity during construction and operation, as outlined in **Section 6**. Management and mitigation measures to alleviate these impacts have been developed as part of this REF and would be implemented during construction and operation of the proposal. Cumulative impacts associated with future projects, and other nearby developments, have been considered. These impacts will be minimised and would not be significant.

Considering the assessment of the impacts detailed in this REF, it is concluded that the proposed activity is not likely to have a significant impact on the environment. On balance, the project is justified on the basis of supporting increase in demand for electricity infrastructure, including those linked to the energy transition, and strengthening Essential Energy's electricity network in the broader area, whilst minimising potential environmental impacts.

1. Introduction

1.1 The Proposal

This Review of Environmental Factors (REF) assesses the construction, operation and maintenance of a dual circuit 132 kilovolt (kV) overhead powerline from the Dubbo South Zone Substation (ZS) to the Forest Glen Solar Farm (FGSF) switching station (under construction), in Dubbo, New South Wales (NSW). The proposal will predominately be located within the existing cleared corridor of the existing 943/2 132kV single circuit overhead powerline, replacing the current infrastructure, with a minor realignment through Taronga Western Plains Zoo (TWPZ) land. The significance of impact has been determined and appropriate mitigation measures recommended.

1.2 Context and Justification of the Proposal

Essential Energy has received several new major connection applications/enquiries as well as existing large customers in the Dubbo Region including:

- Forest Glen Solar Farm
- Maryvale Solar Farm
- Parkes Special Activation Precinct
- Future Mine Connections
- Other potential renewable energy projects

Essential Energy's network licence obligations set out requirements to provide connections to renewable energy projects throughout the region.

1.3 Network Investment Criteria

Network asset investment by Essential Energy is generally required to:

- Meet Essential Energy's duty of care
- Connect customers to the supply network
- Provide a satisfactory standard of supply to customers.

The overall performance of the network is driven by the reliability of individual network components and the redundancy provided by the network to enable maintenance of supply at times when critical parts of the network are out of service (due to maintenance or repair requirements). To maintain acceptable standards of customer service it is necessary to ensure:

- Infrastructure performance (reliability) is maintained at acceptable levels; and
- The network design provides adequate security (redundancy).

The reliability performance of equipment and infrastructure is managed through maintenance and replacement of that infrastructure and construction of new infrastructure. For Essential Energy, the decision to replace or construct new infrastructure is based on an assessment of equipment condition and consideration of the strategic needs of the network.

1.4 Proposal Objectives

The primary objective of the project is to design, construct, operate and maintain a new 132kV dual circuit powerline that will connect the Dubbo South ZS to the switching station at FGSF. Upon construction, the

powerline will facilitate the delivery of electricity generated by FGSF to the grid. The proposal will also strengthen Essential Energy's existing electricity network in the broader area through increased reliability and capacity to connect other large loads. Secondary objectives associated with the project are to:

- Maximise social and economic benefits; and
- Minimise the environmental and social impacts.

1.5 Proposal Site

The proposed powerline is located in the central west of NSW. The nearest population centre is Dubbo, with the northeastern most portion of the alignment traversing the South Lakes residential subdivision. A minor realignment of the powerline corridor will occur through the TWPZ land, before travelling due west to the FGSF switching station, approximately 11 kilometres (km) from Dubbo. **Figure 1** shows the location of the proposal site in the regional context and **Figure 2**:shows the site within the immediately surrounding landscape.

The proposal site is located within the Dubbo Regional Local Government Area (LGA).

The site is predominately within an existing cleared corridor, with existing access points and informal tracks.

1.6 Study Area

The broader study area includes the predominately cleared, rural and partially vegetated areas, with sparse rural residential properties and existing road and powerline infrastructure in the general vicinity of the proposal site, south of the Old Dubbo Road. North of Old Dubbo Road the study area includes a residential subdivision, with the alignment traversing infrastructure corridors for powerlines, and stormwater management areas, roads and recreational areas.

Sensitive environmental areas within the broader region include waterways, biodiversity, Aboriginal and non-Aboriginal heritage, and other environmental values, that form part of the immediate surrounding landscape.

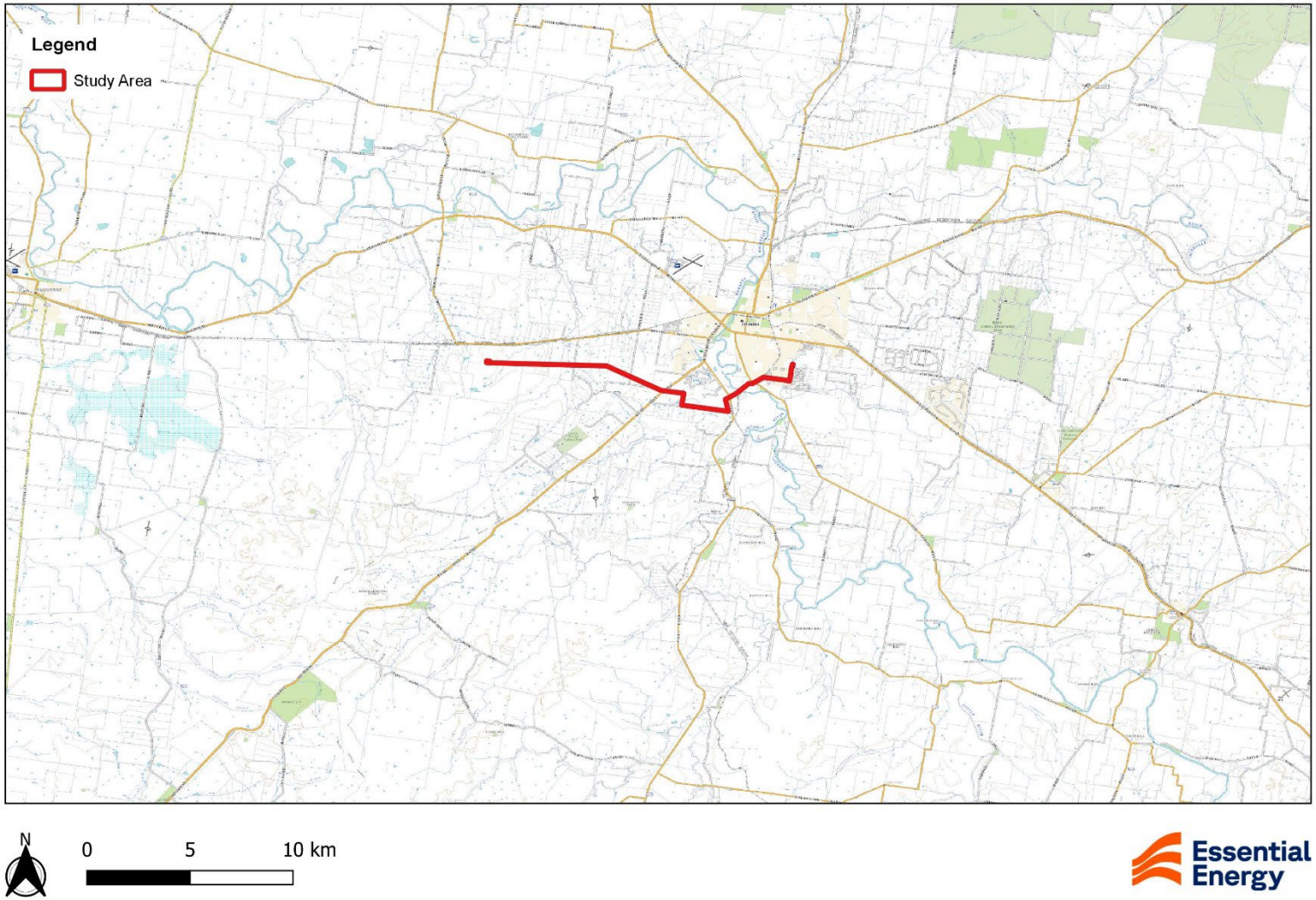

Figure 1: Regional context of proposal site

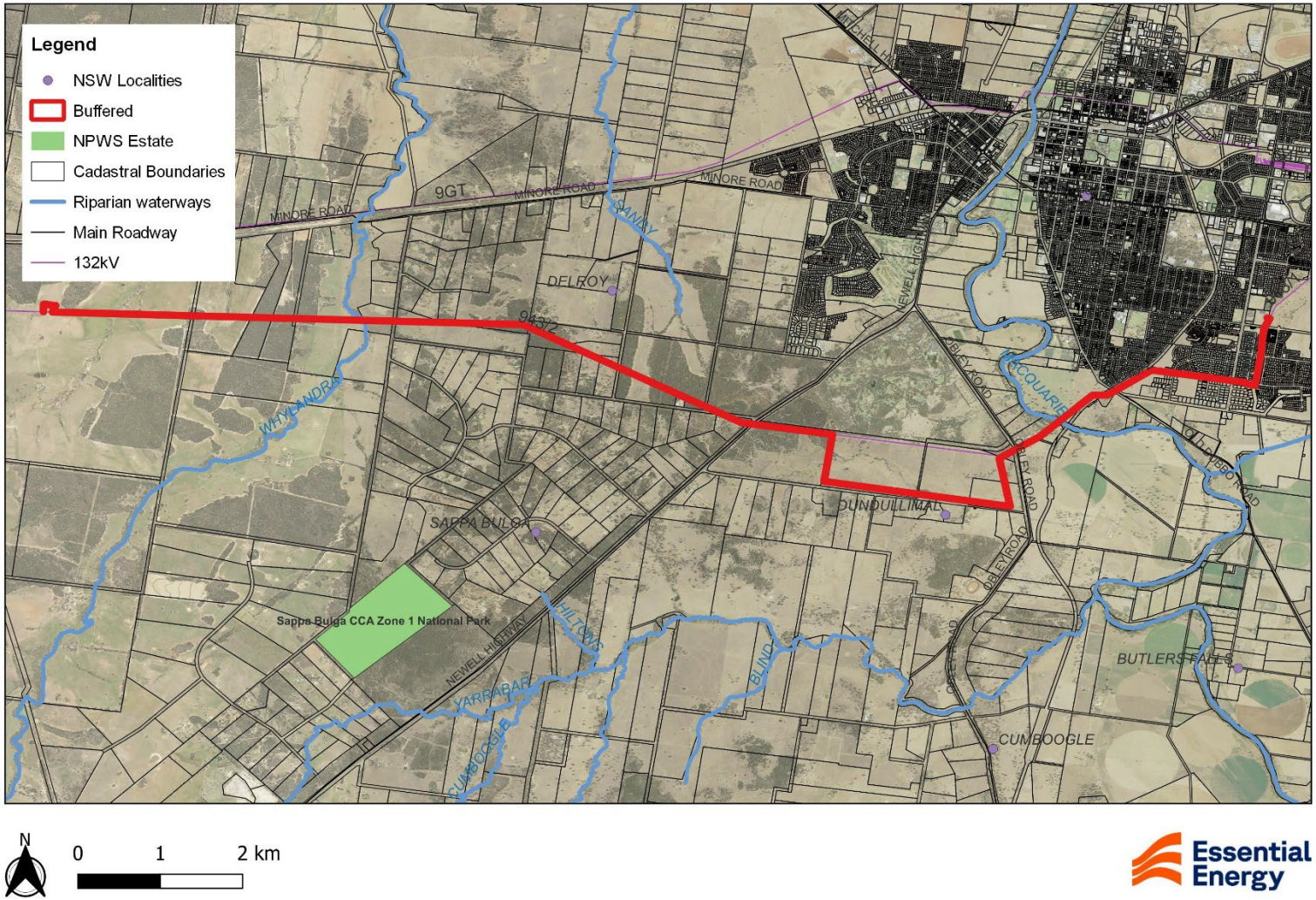

Figure 2: Study area and immediate surrounds

1.7 Purpose of the REF

The purpose of this REF is to document the assessment of potential environmental impacts of the proposal, and identify if there are likely to be any significant environmental impacts. It informs Essential Energy's determination of the proposal under Part 5, Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

2. Description of the Proposal

2.1 Scope of Works

The proposal comprises the construction, operation and maintenance of a new 132kV dual circuit powerline from the existing Dubbo South ZS through to the approved (and currently under construction) switching station at Forest Glen Solar Farm (FGSF), Dubbo, NSW. The proposal will predominately be located within the existing cleared corridor of the existing 943/2 132kV single circuit overhead powerline, replacing the current infrastructure, with a minor realignment through TWPZ land. The dual circuit will comprise a 132kV feeder to be named 9GG (between Dubbo South ZS and FGSF) and a second 132kV feeder to be named 9G9 that will connect to the Wheelers Lane Zone Substation.

The site is predominately within an existing cleared corridor, with existing access points and informal tracks.

The design requires the installation of galvanised steel poles, that are between 20 and 30m tall.

The design for the proposal is provided in **Appendix A**.

The following works are proposed to be carried out:

- Site establishment and laydown areas
- Vegetation clearing to create the corridor for the powerline
- Identification of access and improvement of access tracks (where required)
- Disturbance of ground for pole installation and footings
- Installation of pads at pole locations for drill rig to auger pole holes (approximately 4m x 10m)
- Augering for pole footings to depths that range from 4m to 8.25m
- Construction of pole footings, including transport of concrete to site
- Transport of poles and equipment to site
- Use of heavy vehicles and cranes to join poles together (if in segments), move them into position, and attach to footings
- Stringing conductors to each pole, including the use of light vehicles and, potentially, drones
- Commissioning of the powerline once construction is complete

2.2 Design Criteria

The proposed new 132kV dual circuit overhead powerline will strengthen Essential Energy's existing electricity network in the broader area and enable a distribution of electricity to and from approved and proposed major projects within the area, including renewable energy generators.

Siting of the proposal has been selected following careful consideration of the network. The proposed alignment was strategically located predominately within the existing cleared overhead powerline corridor to ensure optimal and efficient delivery of electricity distribution infrastructure that minimises future land use conflicts and consolidates electrical infrastructure. A realignment was proposed at the request of the TWPZ, to better incorporate the proposed powerline into the approved 'Serengeti' development. The design also avoids other sensitive and critical infrastructure within the immediate vicinity.

The design has been developed to meet the following criteria:

- Meet the design life requirements
- Be cost effective when assessed on a life cycle cost basis

- Provide durability and reliability of the intended function
- Minimise potential environmental impacts.

2.3 Construction Activities

2.3.1 TIMING AND WORK HOURS

Construction work is expected to commence in July 2025, and take approximately seven months to complete, weather dependant.

In considering the remote nature of the majority of the powerline alignment away from sensitive residential receivers (with the exception of the South Lakes residential subdivision), work that has the potential to create audible noise at the nearest sensitive receiver will be between 7am and 6pm Monday to Saturday. When in the South Lakes residential subdivision construction works on Saturday will be restricted to 8am to 1pm. No works are proposed on Sundays or Public Holidays. On occasions, works outside these hours may be undertaken where the following requirements are met:

- Neighbours (and other sensitive receivers) adjacent to the works or the local council or the Environment Protection Authority (EPA) have been notified; and
- Where the works are required to take place in the vicinity of private access ways or driveways, consultation with individual residents would be undertaken to advise residents of the planned timing of the works.

2.3.2 RESOURCES AND EQUIPMENT

Vegetation clearing and trimming along the alignment will be undertaken by a contractor in the first instance to clear the corridor. Existing access tracks/pathways would be used to gain access to the corridor, including the use of existing farm tracks.

Once the corridor has been cleared, the pole footings would be constructed using heavy plant and equipment, for example, excavator, drill rig and concrete trucks. Poles can be brought to site to join together, with a crane used to lift the poles onto the footings.

The following equipment is likely to be used on site to complete the work:

- Vegetation clearing equipment, including chainsaws and mulchers
- Excavator
- Drill rig
- Elevated work platforms (EWP)
- Flatbed trucks and other equipment transporters
- Concrete trucks
- Cable drums and trucks
- Light vehicles
- Concrete pump truck
- Bobcat
- Water truck

2.3.3 IMPACT MITIGATION

The mitigation measures as detailed in **Section 6** and summarised in **Table 15** form part of the proposed activity and will be implemented, as required, as part of the construction and operational phases.

2.4 Operation and Maintenance Requirements

Once the project is constructed, periodic maintenance will be required. Regular inspections of the infrastructure will be undertaken to help identify defects and hazards such as damaged components and vandalism. The site will not accommodate staff or contractors on a permanent basis. Periodic collection of waste may be required.

Likely maintenance activities include:

- Vegetation maintenance to maintain safety clearances
- Regular maintenance of electrical equipment

3. Consultation

3.1 Overview

Community consultation defines the processes we use to seek views or provide information about projects. The term consultation can describe processes ranging from simply delivering information to residents, community information displays, or holding meetings with community representatives designed to actively seek feedback from local communities into a particular project.

The population as a whole is more aware than ever of their social, environmental and economic needs. They want to know about what is planned for their area and how it would impact on them.

Incorporating community consultation as a key business practice is both a necessary and a desirable path for Essential Energy to take. It must be undertaken in good faith and be transparent in all activities.

Essential Energy has in place a policy for community consultation on all major projects. The policy ensures that the community is informed about proposed development, and that concerns and issues are taken into consideration.

Landholder consultation regarding the proposal, in particular with the residents located in the near vicinity, has commenced and is continuing. A website has been established to inform residents of the proposed activities, available at the following link: Dubbo and Surrounds High Voltage Upgrades | Essential Engagement. A 'drop-in' community meeting was also held on the 1 July 2025, from 12pm to 6pm to update and take questions from community members regarding the proposal works, and other activities throughout the Dubbo area. Consultation with local residents will continue throughout the duration of the project design and construction.

3.2 Consultation Requirements under the T&I SEPP

Under the EP&A Act, Essential Energy is the determining authority for certain developments defined under the T&I SEPP as being permissible without consent. While the nature of work being undertaken does not require council consent, Division 1 of the T&I SEPP does provide consultation requirements with the local council where works are anticipated to impact upon council infrastructure, local heritage items, flood liable land and certain land within the coastal zone. In addition, consultation may be required with the State Emergency Service (flood liable land) and other specified public authorities in certain circumstances.

As no connection to, or creation of a substantial impact to stormwater, water or sewerage system, consultation with the local council is not triggered under clause 2.10 of the T&I SEPP.

Some disruption to local roads may occur during the delivery of large plant and equipment during construction. The works are considered to be minor and inconsequential, will likely be undertaken under traffic control, and will not involve significant disruption of pedestrian or vehicle traffic. During operation, the powerline will be visited only on occasion and not generate significant volumes of traffic. Consultation with the local council is therefore not triggered under clause 2.10 of the T&I SEPP.

The proposal site is located within a curtilage of local heritage item, according to Dubbo Regional LEP. However, the works are not likely to affect the heritage item in a way that is more than minor or inconsequential (refer **Section 6.7.2**). Consultation with the local council is therefore not triggered under clause 2.11 of the T&I SEPP.

The proposal site is located on flood liable land (refer **Section 6.5.3**, and **Appendix A**). The proposed works will not change flood patterns as it is limited to pole installation (with existing poles/structures to be removed). Consultation with the local council is therefore not triggered under clause 2.12. Consultation with the State Emergency Service (SES) is not triggered under clause 2.13 as the works are not development without consent under a relevant provision.

The proposal site is not located within the coastal zone. Consultation with the local council is therefore not triggered under clause 2.14 of the T&I SEPP.

The proposal is not located on land, or adjacent to land, that would trigger consultation with other specified public authorities under clause 2.15 of the T&I SEPP.

In addition to consultation requirements, additional notification and approval requirements are outlined in **Table 3**.

4. Project Alternatives

4.1 Do Nothing (Maintain Current Supply Infrastructure)

One option would be to refrain from undertaking any further development of the network in the area. The consequences of Essential Energy doing nothing would be that, as years passed, supply interruptions would occur more frequently and affect more people, and the electricity generated from the surrounding renewable energy infrastructure would not be as effectively distributed throughout the network. The do-nothing approach would not meet Essential Energy's network licence obligations to provide connection to its network.

4.2 Project Planning Considerations

The following factors determined the suitability of the preferred site:

- Being predominately located within an existing disturbed powerline corridor
- Ability to decommission existing 943/2 and predominately rebuild along same alignment, with limited outages
- Realignment within the TWPZ land, to be less intrusive on the 'Serengeti' development
- Relative proximity to planned and approved renewable energy projects in the region
- Being predominantly located on an area subject to heavy modification and disturbance from agricultural activities
- Being on rural land with limited sensitive receptors, or where sensitive receptors exist, they are already subject to powerline infrastructure
- Cost effectiveness by consolidating EE assets.

5. Environmental Legislation

The following section addresses the regulatory and statutory context of the proposed activity including its definition, land use permissibility, and compliance with the relevant environmental planning instruments (EPIs).

5.1 Environmental Planning and Assessment Act, 1979 (EP&A Act)

The EP&A Act is the primary piece of legislation regulating land use planning in NSW. It provides the framework for the development of state and local planning instruments which, through their hierarchy, determine the statutory process for environmental impact assessment. Under the EP&A Act there are two distinct processes, which are:

- Part 4 - 'development' proposals which require consent, including state significant development; and
- Part 5, which regulates 'activities' and requires an approval by a determining authority (e.g. Essential Energy). Part 5 also includes an assessment pathway (Division 5.2) for state significant infrastructure.

The proposal can proceed under Part 5, Division 5.1 of the EP&A Act, given the proposal:

- May be carried out without development consent
- Is not exempt development
- Would be carried out by a determining authority or requires the approval of a determining authority.

A determining authority, for the purposes of this activity, is defined in Part 5 of the EP&A Act to include, but not be limited to, a state-owned corporation within the meaning of the *State Owned Corporations Act 1989*. Essential Energy is listed as a state-owned corporation, and would therefore be the determining authority for the activity covered by this REF.

In accordance with state and local EPIs (described below), this REF has been prepared under Part 5, Division 5.1 of the EP&A Act to assess the possible environmental outcomes of the proposed activity. In determining the proposal and degree of impact, Essential Energy is required to consider Section 5.5 of the EP&A Act and clause 171 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Reg) which are summarised in **Section 9** of this REF.

5.2 Environmental Planning Instruments

EPIs regulate the permissibility to undertake an activity and the type of assessment process that is required. EPI is the generic term used to describe state environmental planning policies and local environmental plans (LEPs). EPIs that apply to this development are outlined below.

5.2.1 STATE ENVIRONMENTAL PLANNING POLICIES

5.2.1.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) consolidates and updates the planning process for new infrastructure. Subject to certain exemptions the T&I SEPP allows development for the purpose of an electricity transmission or distribution network to be carried out by or on behalf of an electricity supply authority or public authority without consent on any land.

Exemptions to this broad (on any land) application include developments which require Part 4 approval under *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP) or activities triggering designated development under *State Environmental Planning Policy (Resilience and Hazards) 2021* (Resilience and Hazard SEPP).

The proposed activity falls within the scope of the T&I SEPP as being permissible without development consent.

Consultation requirements under the T&I SEPP are addressed in **Section 3.2**, whilst notification provisions are detailed in **Table 3.**

5.2.1.2 State Environmental Planning Policy (Biodiversity and Conservation) 2021

State Environmental Planning Policy (Biodiversity and Conservation) 2021 (Biodiversity and Conservation SEPP), among other things, provides planning rules and controls for the clearing of native vegetation in NSW and the land use planning and assessment framework for koala habitat.

Vegetation removal is required to facilitate the proposed powerline, and while the provisions relating to koala habitat do not apply to Part 5, Division 5.1 assessments under the EP&A Act, potential impacts to koalas has been considered in **Section 6.5**.

5.2.2 LOCAL ENVIRONMENTAL PLAN (LEP)

LEPs are developed by local councils (they become law only after Ministerial approval) and guide planning decisions for local government areas. According to the NSW Planning Group, now part of the NSW Department of Planning, Housing and Infrastructure (DPHI), LEPs, through zoning and development controls, allow councils to regulate the ways in which land is used. Council LEPs also list heritage items that are of local heritage significance.

The application of the T&I SEPP overrides the need to consider zoning controls, as developments covered by the T&I SEPP are permissible on any land without consent. However, the T&I SEPP provides consultation and notification provisions where activities are likely to substantially impact upon council-related infrastructure, or items of local heritage significance (refer **Section 3.2**).

5.3 Key Legislation

5.3.1 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999 (COMMONWEALTH) (EPBC ACT)

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) requires the approval of the Commonwealth Minister for the Environment for actions that may have a significant impact on matters of national environmental significance (NES). Approval from the Commonwealth is in addition to any approvals under NSW legislation.

The EPBC Act lists nine matters of NES which must be addressed when assessing the impacts of a project. An assessment of how the project may impact on matters of NES is provided in **Table 2.**

Table 2: Matters of National Environmental Significance

MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE	IMPACT
World heritage properties	There are no world heritage properties proximate to the proposed development, or that would potentially be affected by the proposal
National heritage places	There are no national heritage places proximate to the proposed development, or that would potentially be affected by the proposal
Wetlands of international importance	There are no Ramsar wetlands proximate to the proposed development, and the proposal is not likely to have a significant impact on the ecological character of a Ramsar wetland.
Commonwealth listed threatened species and ecological communities	The proposal is not expected to have any significant impact on threatened species, populations or ecological communities listed under Commonwealth legislation (refer **Section 6.5**)

Great Barrier Reef Marine Park	The proposal would not result in any impacts to the Great Barrier Reef Marine Park
Commonwealth listed migratory species	The proposal is not expected to have an impact on listed migratory species (refer **Section 6.5**)
Nuclear action	The proposal would not result in any nuclear action, nor would the activity require any nuclear action to be undertake
Commonwealth marine areas	There are no Commonwealth marine areas proximate to the proposed development, or that would potentially be affected by the proposal
Impacts on water resources resulting from large coal mining and coal seam gas developments	The proposal is not related to any large coal mining or coal seam gas developments. The project would not impact on water resources

Given that the proposal would not significantly impact on matters of NES and would not be carried out on Commonwealth land, the EPBC Act is not triggered and approval from the Commonwealth Minister for the Environment is not required.

5.3.2 BIODIVERSITY CONSERVATION ACT 2016

The *Biodiversity Conservation Act 2016* (BC Act) provides the process for listing threatened species, threatened ecological communities, and areas of outstanding biodiversity value, and details the process for assessing impacts on those matters.

Section 1.7 of the EP&A Act requires that assessment of an activity must consider its impact on threatened species, threatened populations, and threatened ecological communities or their habitats in accordance with Part 7 of the BC Act. The assessment for determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats, referred to in section 7.3 of the BC Act, determines whether the proposed works are likely to have a significant impact. If a significant impact is determined, a species impact statement (SIS) is required, or if the proponent so elects, a Biodiversity Development Assessment Report (BDAR) can be prepared.

The proposed new 132kV powerline is not located within a declared area of outstanding biodiversity value. A significant impact on threatened species, populations, ecological communities, or their habitats as a result of the proposal is considered unlikely (refer to **Section 6.5** and **Appendix B**).

5.3.3 BIOSECURITY ACT 2015

The *Biosecurity Act 2015* (Biosecurity Act) provides for the prevention, elimination, minimisation and management of biosecurity risks posed by biosecurity matter, dealing with biosecurity matter, carriers and potential carriers, and other activities that involve biosecurity matter, carriers or potential carriers. Section 22 of the Biosecurity Act requires that any person who deals with biosecurity matter, or a carrier, and who knows, or ought reasonably to know, the biosecurity risk posed or likely to be posed by the biosecurity matter, carrier or dealing, has a biosecurity duty to ensure that, so far as is reasonably practicable, the biosecurity risk is prevented, eliminated or minimised. This obligation is referred to elsewhere within the Biosecurity Act as the “general biosecurity duty”.

Given the vehicle movements, excavation and disturbance of surface and sub soils associated with the proposed activity, Essential Energy has a general biosecurity duty to ensure the biosecurity risks posed by the potential for the introduction of weed species are prevented, eliminated or minimised.

5.3.4 ELECTRICITY SUPPLY ACT 1995

The *Electricity Supply Act 1995* (ES Act) establishes a comprehensive wholesale and retail market in electricity and regulates the network operations, wholesale trading, and electricity supply in the retail market. The ES Act confers special powers on Essential Energy in respect of development and maintenance of electricity infrastructure and sets out the licencing regime. In particular, it allows Essential Energy to trim and remove trees, carry out works on public roads, and acquire land.

The ES Act also requires that no works (other than routine repairs or maintenance works) may be carried out unless 40 days' notice has been given to the local council to make a submission in relation to the proposal. Any submission must be considered by Essential Energy.

5.3.5 HERITAGE ACT 1977

The *Heritage Act 1977* (Heritage Act) provides for the protection of heritage items of local and state significance. Such items may include places, buildings, works, relics, moveable objects, or precincts with historical, scientific, cultural or aesthetic value to the state. Where works are likely to impact upon an item listed on the State Heritage Inventory (SHI), approval may be required under two sections of the Heritage Act:

- Section 60 approval relating to impacts on items listed on the SHI; and
- Section 140 approval requiring an excavation permit for activities with potential to excavate or disturb a relic.

As described in **Section 6.7.2** the proposed works are considered permissible utilising a standard exemption made under section 57(2) for engaging in or carrying out activities/ works otherwise prohibited by section 57(1) of the *Heritage Act 1977*, as published by *Government Gazette Number 262 – Planning and Heritage (Friday, 17 June 2022)* and a permit from the Department is not required.. Further discussion of potential impacts and measures to minimise impacts to items of local heritage significance is provided in **Section 6.7**.

5.3.6 LOCAL LAND SERVICES ACT 2013

The *Local Land Services Act 2013* (LLS Act) established Local Land Services, a government agency with the responsibility for providing advice on biosecurity, natural resources and agricultural advisory services in NSW. The LLS Act includes provisions for the regulation of native vegetation including the approval of certain activities.

Under the LLS Act, approval is required from the Minister for the Environment or delegate to clear native vegetation (exemptions apply). Exemptions include, but are not limited to, urban areas, electricity line maintenance and Part 5 activities under the EP&A Act.

The LLS Act is administered by the various local land services under delegated authority by the Minister for the Environment.

Given that the proposal will be assessed under Part 5, Division 5.1 of the EP&A Act, the provisions relating to the LLS Act are not applicable.

5.3.7 NATIONAL PARK AND WILDLIFE ACT 1974

The *National Parks and Wildlife Act 1974* (NPW Act) provides for the management of all national parks, historic sites, nature reserves, reserves, Aboriginal areas and state game reserves. It also provides for the protection and care of native flora and fauna, and Aboriginal places and objects throughout NSW. Under the NPW Act it is an offence, without authorisation, to:

- Harm an Aboriginal object or place without consent
- Pick or harm any plant or animal that is protected or is a threatened species, population or ecological community; or

- Damage any critical habitat, or habitat of a threatened species, an endangered population or an endangered ecological community or reserved land.

When an activity is likely to harm an Aboriginal object or place, approval under section 90 is required.

As described in **Section 6.6** and **Appendix C**, Aboriginal objects were identified during background searches and site investigations. The site survey undertaken as part of the Aboriginal Due Diligence Assessment (**Appendix C**) determined that the sites were either not accurately mapped, and were confirmed to be outside of the proposal footprint, were not identified within the proposal footprint, or were easily avoidable. As part of the Due Diligence Assessment an artefact scatter was identified within the development footprint of the Proposal and also development works related to the TWPZ. Those artefacts were subsequently salvaged as part of the TWPZ Aboriginal Heritage Impact Permit (AHIP)and will not be impacted by the proposed Essential Energy development.

The NPW Act also serves to direct the management and protection of reserved land. In relation to utility installations, the Minister for the Environment may grant easements or rights of way through reserved land for the conveyance or transmission of electricity. The proposal site is not located on reserved land.

5.3.8 PROTECTION OF ENVIRONMENT OPERATIONS ACT 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) provides a framework for the licencing of activities that have potential to result in pollution of the environment. The POEO Act is administered by OEH. An environment protection licence is not required for the proposed activities as they do not fall within Schedule 1 of the POEO Act; however, the following restrictions apply:

- The proposal must not pollute waters
- Waste from the works must not be wilfully or negligently disposed of in a manner that harms or is likely to harm the environment
- Waste must not be transported to a place that cannot lawfully be used as a waste facility for that waste
- There must be no litter in or on a public place or an open private place caused by workers
- Any environmental incident that involves actual or potential harm to the health or safety of human beings or to ecosystems must be reported to the Environment Protection Authority (EPA)

During construction, there is the potential for discharge to surface waters from earthworks activities. A number of management strategies are available to Essential Energy for the discharge to surface waters and prevention of erosion and sedimentation, including discharging water over grassed or well vegetated areas away from waterways. Waste will be managed so as to prevent non-compliance with this legislation and relevant regulations.

5.3.9 ROADS ACT 1993

The *Roads Act 1993* (Roads Act) provides for the ownership and management of public roads and also requires the consent of the appropriate roads authority for various works in respect of certain public roads.

Section 138 of the Roads Act requires the consent of the appropriate roads authority for various works in respect of public roads and classified roads. Under Schedule 2 (5) (1) of the Roads Act, Essential Energy is exempt from obtaining approval for works on or over an unclassified road other than a Crown Road. However, works that require a connection to or crossing of a classified road must be approved by Transport for NSW (TfNSW).

The proposed activity will require a conductor installation, and removal of existing conductor, over the Newell Highway. Thus, a section 138 approval is required from TfNSW.

5.4 Summary of Licences, Permits, Approvals and Notifications

Specific approvals required for the construction, maintenance and operation of the proposal are outlined in **Table** 3.

Table 3: Summary of licences, Permits, Approvals and Notifications

LEGISLATION	AUTHORITY	REQUIREMENT
Electricity Supply Act 1995	Local Council	40 days notice of the proposed works must be given. Essential Energy's Design Services were responsible for this notification. This notification was sent on 10 April 2025. Design services have been corresponding with DRC since the provision of this letter.
Roads Act 1993	Transport for NSW	Section 138 approval for works over a classified road required for the spanning and decommissioning of conductor over the Newell Highway. This approval has been obtained by the Design services team.

6. Environmental Assessment

6.1 Air Quality and Greenhouse Gases

6.1.1 EXISTING ENVIRONMENT

The proposal site is situated on a predominantly cleared and highly disturbed landscape. The majority of the proposal site is within an existing 132kV overhead powerline corridor, excluding an area of re-alignment within TWPZ.

Current land use and historic disturbance in the form of agricultural activities including cropping and grazing on the rural zoned larger lots in the western-most portion of the line. TWPZ forms the southernmost portion of the line and has been subject to clearing and is understood to have previously been used as a Department of Defence site. Within Lot 3 DP721260 and Lot 192, Lot 196, and Lot 207, DP 753233 of the TWPZ, a new alignment will be required. The north eastern portion of the proposal is within the residential subdivision of South Lakes between the Dubbo South ZS and Old Dubbo Road. The current influences on air quality in the locality are dust and vehicle emissions generated from agricultural activities and vehicle emissions from traffic movements on the Mitchell Highway.

The nearest sensitive receivers are the residences along Argyle Avenue, with residences on the northern (seven residences) and southern (six residences) side of the roadway being approximately 16m from the powerline. Through South Lakes, such as residences on Fountain Circuit, additional sensitive receivers are between 16m and 20m from the powerline. Throughout South Lakes the proposal will be within the existing cleared corridor. These sensitive receivers are shown in **Figure 3** to **Figure 8**.

Figure 3: Sensitive receivers relative to the proposal site within the South Lakes Subdivision – Overview (Aerial source: Google Earth Pro, 2025)

Figure 4: Sensitive receivers relative to the proposal site within Fountain Circuit - South Lakes Subdivision (Aerial source: Google Earth Pro, 2025)

Figure 5: Sensitive receivers relative to the proposal site within Amadeus Avenue - South Lakes Subdivision (Aerial source: Google Earth Pro, 2025)

Figure 6: Sensitive receivers relative to the proposal site within Argyle Avenue - South Lakes Subdivision (Aerial source: Google Earth Pro, 2025)

Figure 7: Sensitive receivers relative to the proposal site, west of Wheelers Lane - South Lakes Subdivision (Aerial source: Google Earth Pro, 2025)

Figure 8: Sensitive receivers relative to the proposal site, Paterson Circuit- South Lakes Subdivision (Aerial source: Google Earth Pro, 2025)

6.1.2 ASSESSMENT OF IMPACT

6.1.2.1 Air quality during construction

It is expected that during excavation and backfilling works, that there would be minor amounts of dust generated from the disturbance of soil, and wind erosion of any exposed surfaces and stockpiles. Soil material removed by the augering will be utilised on site or removed and disposed of a facility lawfully capable of receiving the material. Dust also has the potential to be generated should vehicles transporting materials to site be uncovered.

There will be minimal exhaust emissions from vehicles. Exhaust emissions from construction equipment are likely to include nitrogen oxides (NOx), carbon monoxide (CO), sulphur oxides (SO2), hydrocarbons, and total suspended particulates. All vehicles will be fitted with approved exhaust systems to maintain vehicle exhaust emissions within accepted standards.

The work sites and impacts would be transitory in nature with works progressing along the alignment and will be small in intensity over the approximate seven-month construction period. It is unlikely that there will be an odour impact. Any impacts on air quality will be short-term and localised.

6.1.2.2 Air quality during operation

Once constructed and works are complete, the new powerline will have negligible impacts on air quality. All of Essential Energy's assets are subject to regular maintenance and monitoring to ensure all equipment is operating effectively.

6.1.3 ENVIRONMENTAL MITIGATION MEASURES

The following minimisation measures will be implemented to prevent air quality impacts:

- Any potential dust-borne materials transported to and from the activity site will be covered at all times during transportation
- All vehicles and machinery will be maintained according to manufacturer requirements to ensure emissions are kept within acceptable limits

6.1.4 CONCLUSION

The proposal is not anticipated to result in substantial or uncontrollable dust or exhaust emissions in the area during construction or operation. Any air quality impacts would be short-term and minor during construction or future maintenance. Given the mitigation measures outlined in this assessment the overall environmental risk is considered to be low.

6.2 Geology and Soil

6.2.1 EXISTING ENVIRONMENT

Reference to the NSW Geology Simplified layer, which can be viewed on the NSW Government's Central Resource for Sharing and Enabling Environment Data in NSW (SEED) website, indicates that the site is underlain:

- between the Dubbo South Zone substation and Old Dubbo Road – Triassic sedimentary rocks. Quartz-lithic to quartz-rich sandstone with conglomerate, mudstone and siltstone. Deposited in high energy braided river systems.
- from Old Dubbo Road to Dundullimal homestead - Quaternary alluvial deposits. Current and recent mud, silt, sand and gravel deposited by river (alluvial) systems.
- from Dundullimal homestead to just east of the Newell Highway - Triassic sedimentary rocks.
- from east of the Newell Highway to project site – Jurassic sedimentary rocks. Sedimentary sequences dominated by sandstone with minor conglomerate units and claystone.

Review of the Mitchell Landscapes Mapping V3 (Department of Environment, Climate Change and Water [DECCW] 2010a) indicates that the proposal site occurs within two landscapes, the Goonoo Slopes, and the Macquarie Alluvial Plains.

The Goonoo Slopes landscape comprises extensive undulating to stepped low hills with long slopes on sub-horizontal Triassic/Jurassic quartz sandstone, conglomerates, siltstone, shale and some coal. General elevation 300 to 500m with overall westerly slope, poorly defined drainage network, local relief to 30m. Stony yellow earths with sandstone outcrop on ridgelines to yellow harsh texture-contrast soils in shallow valleys.

The Macquarie Alluvial Plains landscape comprises Holocene fluvial sediments of back-plain facies of the Marra Creek Formation associated with the Macquarie River main alluvial fan and distributary stream system. Local relief is 1 to 3m. Soils of this landscape are characterised by dark yellow-brown silty clay with patches of sand and carbonate nodules deposited from suspended sediments in floodwater, often with gilgai. Slightly elevated areas with red-brown texture-contrast soils.

Naturally occurring asbestos is not mapped within the proposal site (DPIRD, 2015). Fortify Geotechnic (2024) collected two samples for asbestos analysis. No asbestos was detected from these samples.

Figure 9 shows mapped Mitchell Landscapes relative to the proposal site.

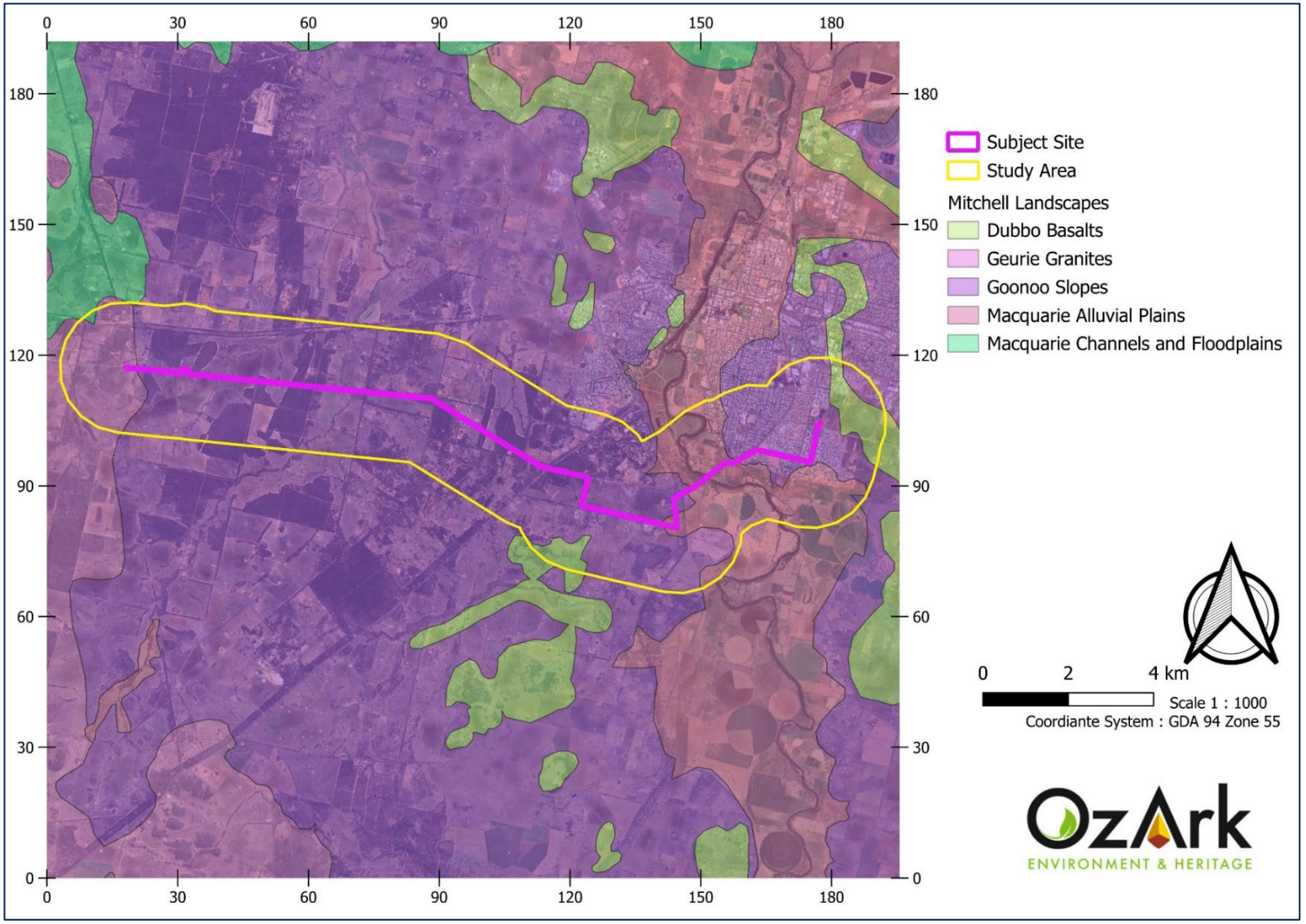

Figure 9: Mitchell landscapes relative to the proposal site (Source: OzArk 2025a)

6.2.2 ASSESSMENT OF IMPACT

The proposed works will involve site disturbance through excavations for pole footings, vegetation removal, construction access and general construction activities associated with the establishment of a powerline. These activities have the potential to impact on soil stability and erosion potential at immediately impacted sites for the pole locations. However, the extent of these impacts is likely to be minimal as works will be restricted to each pole location, drill pad creation and limited disturbance for access. The proposed activity is expected to have a low impact on soils and geology in the area.

6.2.3 ENVIRONMENTAL MITIGATION MEASURES

The following mitigation measures will be employed to manage erosion and sedimentation:

- Risks associated with sediment and erosion will be managed in accordance with The Blue Book – Managing Urban Stormwater: Soils and Construction (Landcom 2004)
- Disturbed areas will be progressively stabilised as soon as practicable following construction activities
- Essential Energy's *CEOP8064 Management of Excavated Material; Guideline for Construction Sites* will be consulted to determine the most appropriate beneficial reuse or disposal method for any surplus excavated materials

6.2.4 CONCLUSION

The proposal is not anticipated to have any adverse impacts on the soils and geology of the environment. Given the mitigation measures outlined in this assessment, the overall environmental risk is considered to be low. Further potential impacts to water quality are discussed in the following section.

6.3 Water quality and Hydrology

6.3.1 EXISTING ENVIRONMENT

The closest named permanent water course to the project is the Macquarie River. Another 13 non-permanent watercourses (including Whylandra Creek) are present along the alignment. All will be traversed by the proposal.

Dubbo Regional Council flood planning mapping shows that the flood planning land interacts with the proposal site at the crossing of the Macquarie River (See **Figure 10**). The Flood Planning Land is defined as the 1% Annual Exceedance Probability (AEP) flood level and a buffer of an additional 500mm.

Fortify Geotech (2024) carried out geotechnical investigation of the proposed alignment. The geotechnical investigation identified groundwater in five of the 30 boreholes, at depths of 3.9m below ground surface (mBGS) at its shallowest and 7mBGS at its deepest. Two of the boreholes where water was encountered at 7mBGS were either side, and in close proximity to the Macquarie River. The borehole where water was encountered at 3.9mBGS was in close proximity to Whylandra Creek. The two remaining bores encountered groundwater at 4.5mBGS are adjoining drainage lines.

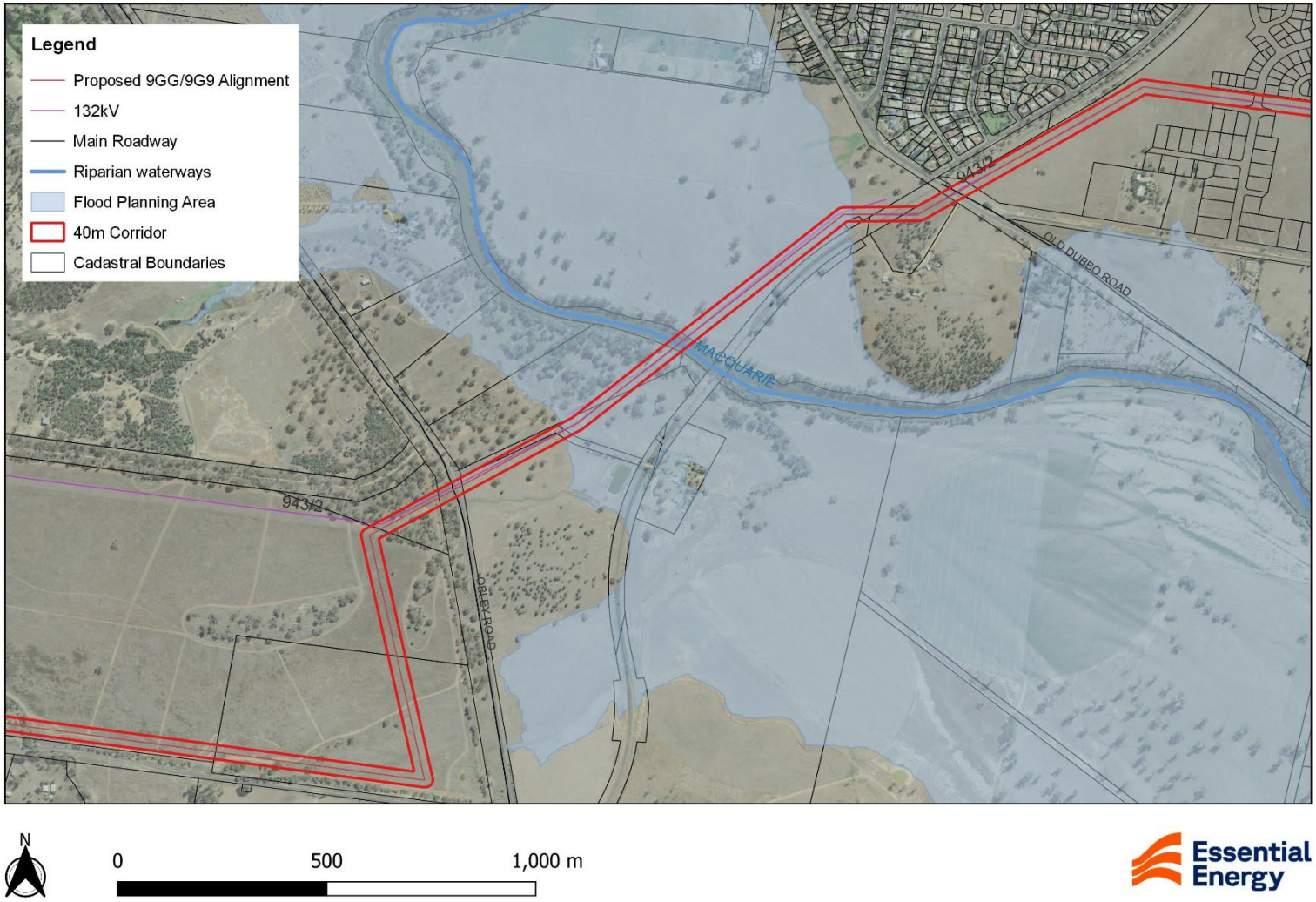

Figure 10: Flood Planning Land

6.3.2 ASSESSMENT OF IMPACT

The following activities have the potential to impact on water quality during the construction and operation of the project:

- Earthworks, including excavations/augering for footings
- Access and vehicle movements
- Concreting works
- Fuel or oil leaks from construction and maintenance equipment.

Fortify Geotechnics (2024) stated permanent groundwater level is expected to be encountered below about 3.9m-7mBGS depth, however, this will fluctuate depending on climate conditions. Additionally, temporary perched groundwater seepages could be encountered at shallower depth within the more pervious alluvial soils, particularly after rainfall. Fortify (2024) concluded that excavations are not expected to be below the permanent groundwater table, although temporary perched seepages will be present following rain, but should be readily controllable through the use of pumps during construction. Suitable surface drainage should be provided to ensure rainfall run-off or other surface water cannot pond against structures or pavements.

Dubbo Regional Council flood planning mapping was reviewed and pole installation works, and pole/structure demolition is required in the flood planning area in the vicinity of Macquarie Creek. The structures to be installed will be suitably designed to account for potential impacts of soft ground, flood velocities and flood debris in flood events. Upon completion of the proposed works there will be less poles/structures within the flood planning area. Nine poles/structures are planned to be removed, with replacement by six poles. The reduction in structures within the flood planning area will limit the potential for capture of flood debris and reduce risk to the electricity network. The small footprint of the works will have a negligible impact of flood extents.

Construction of the project will expose the natural ground surface and subsurface through boring/augering for the pole footings, including any drill pads. Additional potential water quality risks include spillage of diesel or other chemicals during refuelling or maintenance activities on plant and equipment.

These activities have the potential to negatively affect the water quality in the area by the introduction of sediment laden runoff or contaminants within runoff. In consideration of the disturbance area being restricted to the proposed footing excavation, pad construction and access areas, and the disturbance areas being greater than 30m from any from immediate receiving permanent waterways, any potential impacts to surface water flows or water quality of receiving water bodies are likely be negligible.

As the construction of the proposed activities presents no impediments to surface water flows, it is expected that there would be no impact on local hydrological conditions.

6.3.3 ENVIRONMENTAL MITIGATION MEASURES

The following mitigation measures will be applied:

- Control measures will be implemented to manage risks associated with the handling of fuel through using spill trays when undertaking in field re-fuelling
- Disturbed areas will be managed consistent with the requirements of the Blue Book to minimise potential impacts to waterways.
- Sediment fencing will be erected, where required, downslope of disturbed areas, and impacts would be minimised where practicable.
- The implementation of overland discharge of sediment laden water across grassed areas within the easement

6.3.4 CONCLUSION

The proposal is not anticipated to have any impact upon the water quality or hydrological conditions in the area. Any impacts that might occur would be short-term and minor, and would occur during construction and maintenance. Given the mitigation measures outlined in this assessment, the overall environmental risk is considered to be low.

6.4 Noise and Vibration

6.4.1 EXISTING ENVIRONMENT

The majority of the proposal site is located in a rural environment, with a short section through a heavily urbanised landscape. The main noise sources within the rural locality are:

- Road traffic noise from the Newell Highway
- Road traffic noise from local roads throughout the proposal site
- Agricultural activities
- Activities associated with the TWPZ
- Train movements on the Main Western Railway to the north of Minore Road
- Environmental noise such wind in vegetation and birdsong
- Land use activities.

Within the rural environment of the proposal site, the nearest sensitive receivers (four) are between 60 and 75m from the edge of the powerline. The existing noise environment of surrounding rural landscape would be characterised as a low noise environment, given its rural character.

Where the proposal site is within the residential subdivision of South Lakes, between Old Dubbo Road and the Dubbo South ZS, the main noise sources within the urban locality are:

- Road traffic noise from local roads throughout the proposal site
- Vegetation maintenance activities associated with residential premises
- Recreational use of the area that the proposed powerline is located
- Environmental noise such wind in vegetation and birdsong

The nearest sensitive receivers are the residences along Argyle Avenue, with residences on the northern side (seven residences) and southern side (six residences) of the roadway being approximately 16m from the powerline. Through South Lakes, such as residences on Fountain Circuit, additional sensitive receivers are between 16m and 20m from the powerline. Throughout South Lakes the proposal will be within the existing cleared corridor. These sensitive receivers are shown in **Figure 3** to **Figure 8**.

6.4.2 ASSESSMENT OF IMPACT

6.4.2.1 Noise during construction

Noise impacts during construction may potentially disturb sensitive receivers in close proximity to the powerline alignment. The following activities are likely to be the main sources of construction noise impacts:

- Site preparation
- Vehicles and trucks transporting construction materials to and from the site
- Set up and movement of construction vehicles and equipment
- Augering pole footings
- Conductor stringing and winching

Noise levels would vary depending on the nature of the activities being undertaken. The use of several items of construction equipment simultaneously is only expected to occur intermittently, if at all. Any impacts from noise would be short-term, localised and transitory as the work site will continually move along the alignment.

Construction vehicles will use the local road network to access the proposal site. Given the duration of the works, surrounding land use, the open landscape, the nature of existing traffic movements and relatively low intensity construction methods, it is anticipated that construction activities will not substantially affect the ambient noise in the area. Works will predominantly be undertaken between Monday and Saturday between 7am and 6pm. When in the South Lakes residential subdivision construction works on Saturday will be restricted to 8am to 1pm.

6.4.2.2 Vibration during construction

The use of construction equipment has the potential to cause some vibration impacts. The vibration generated from construction works would vary depending on the level and type of activity carried out. Potential vibration impacts to receivers for the works would be dependent on separation distances, the intervening soil and rock strata, dominant frequencies of vibration and the receiver structure.

Dominant vibration generating plant include:

- Excavator
- Drill rig for footing works
- Truck movements along unsealed roads

TfNSW 2018 provides that 2m distance is the minimum working distance to prevent damage from vibratory impacts associated with a piling rig . No minimum distance to prevent vibration causing a 'human response' for the piling rig bored is provided. Given the distance from the closest sensitive receivers within the South Lakes residential estate exceeding the minimum distance from the piling rig, and the isolated and relatively low intensity construction methods, there is not expected to be potential for vibration related impacts from the proposed activity.

6.4.2.3 Noise and Vibration during operation

The operation and maintenance of the powerlines will not result in noise or vibration causing activities to the extent that will impact sensitive receivers.

6.4.3 ENVIRONMENTAL MITIGATION MEASURES

Construction work that has the potential to create and audible noise at the nearest sensitive receiver, will be between 7am and 6pm Monday to Saturday. When in the South Lakes residential subdivision construction works on Saturday will be restricted to 8am to 1pm. On occasions works outside these hours may be undertaken where agreement has been reached with sensitive receivers or the following requirements are met:

- Neighbours (and other sensitive receivers) adjacent to the works or the local council or the NSW Environment Protection Authority (EPA) have been notified; and
- Where the works are required to take place in the vicinity of private access ways or driveways, consultation with individual residents would be undertaken to advise residents of the planned timing of the works.

All plant and equipment will be operated and maintained in accordance with the manufacturer's specifications.

Any noise complaint will be investigated with additional control measures put in place if required.

Operational noise generated will be below the noise goal for the surrounding land use, thus no mitigation is proposed.

6.4.4 CONCLUSION

The proposal will have acoustic and vibration impacts during construction. The acoustic and vibration impacts during the construction phase will be short term, transitory and moderate. Operational noise generated by the proposal will be minimal. Given the mitigation measures outlined in this assessment, the impacts can be effectively managed, and the overall environmental risk is considered to be moderate.

6.5 Flora and Fauna

OzArk Environment and Heritage (OzArk) (OzArk, 2025a) was engaged to undertake an ecological impact assessment for the proposal. The key findings of this assessment are presented below, with the full assessment report attached to this REF as **Appendix B**.

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In considering the significant land disturbance of the South Lakes residential estate, including:

- bulk earthworks, topsoil stripping
- installation of services
- installation of stormwater retention basins and modification to surface water flows
- landscaping
- and the ongoing maintenance of the existing 132kV overhead powerline

the focus of survey field effort for the ecological assessment was on those areas along the alignment of the proposed activity that had potential to retain ecological values.

6.5.1 METHODOLOGY

The following methods were used for this assessment:

- Desktop review of ecological databases and literature
- Field survey of the study area using transect method by foot.

The assessment rationale was to evaluate the type and quality of habitat to be impacted by the proposal, and then complete targeted assessment of potential habitat to detect the region's listed species, populations, or communities.

6.5.1.1 Desktop / Database Searches

Information sources

OzArk (2025a) initially undertook a preliminary assessment, drawing on local experience, previous reporting, and information held on government databases and archives, including, but not limited to:

- DPE State Vegetation Type Mapping (SVTM)
- DPE Threatened Species website
- NSW DPI threatened fish indicative distribution maps
- EPBC Protected Matters Search for Matters of National Environmental Significance (MNES)
- NSW Biodiversity Values Map and Threshold Tool
- Register of Declared Areas of Outstanding Biodiversity Value
- Dubbo Regional Council Biodiversity mapping

The desktop review was used to inform field surveys and assessment of potential impact to threatened flora and fauna.

Field Survey

The field survey was undertaken between 29 and 31 January 2025 by an OzArk ecologist. The objectives of the field assessment were to:

- Describe the nature and extent of vegetation removal
- Confirm Plant Community Types (PCTs) and update those incorrectly mapped to the correct vegetation class, PCT and / or Threatened Ecological Communities (TECs)
- Adjust mapped boundaries and extents of PCTs after ground truthing, including areas where no native vegetation exists, such as areas cropped with exotics, access tracks and other disturbed areas
- Identify habitat features within the proposal area for listed species known or predicted to occur
- Determine if species, populations or communities listed in the EPBC, BC or FM Acts would be, or have potential to be, affected by the proposal
- Determine if groundwater dependent communities would be, or have potential to be, affected by the proposal
- Describe the quality and value of the habitat affected by the proposal.

Database searches were used to inform the field assessment, and applied to determine the likelihood for a protected matter and PCT to be recorded within the proposal site and what targeted searches would be needed for detection.

Results of the field assessment are summarised in **Section 6.5.2.2** and presented in detail in **Appendix B**.

PCTs

PCTs were identified in the field using the NSW SVTM map sourced from the NSW SEED website, as a baseline for the study area and region. The field assessment aimed to confirm PCTs and update those incorrectly mapped to the correct vegetation class, PCT and/or TECs. PCT IDs and boundaries between mapped PCTs were adjusted after ground-truthing. Areas of not native vegetation were also identified and included areas where the vegetation consisted of exotic species or where there was no vegetation such as along tracks and roads.

Threatened Ecological Communities (TECs)

TECs were predicted using database searches, and the PCTs associated with a TEC. Data collected during the field assessment and the NSW and Commonwealth descriptions of TECs were used to confirm presence or absence of TECs in the proposal site.

Habitat Assessment

Habitat was assessed for its potential to provide resources for listed species predicted or known to occur. Database searches were used to inform the field assessment. Professional judgement was applied on site to determine a likelihood for a protected matter to be recorded and what targeted searches would be needed to detect and consider the magnitude of the potential impact.

In the field, any indirect evidence of fauna (i.e., scats, tracks, calls, fur, feathers, sloughed skins etc.) was investigated. Mature trees, where present, were inspected for hollows and signs of use from listed fauna species and to determine if they were used as fauna breeding sites. Ground features such as rocks and logs which may be potential habitat for listed reptiles were inspected to determine if they were significant habitat.

Threatened Fauna

Opportunistic sightings of mammals, birds, reptiles, and frogs were recorded during assessment of the study area. Attention was given to identifying the presence of suitable habitat (e.g. tree hollows, nests, logs, waterways) and signs of activity (e.g. feeding scars, scats). No targeted survey or trapping was undertaken.

6.5.2 EXISTING ENVIRONMENT

6.5.2.1 Desktop analysis

EPBC Protected Matters

An EPBC Protected Matters Report generated for this proposal considered MNES within a 10km buffer of the proposal. This report is provided in **Appendix B** and summarised in **Table 4**. Potential impacts to species and communities highlighted are considered in the following sections of this report.

Table 4: EPBC Protected Matters Report Summary - 1500 metre buffer from site

MNES	RESULT	RELEVANCE TO THIS ASSESSMENT
World Heritage Properties	None	-
National Heritage Places	None	-
Wetlands of International Importance	4	Banrock Station Wetland, Riverland, The Coorong, and lakes alexandrina and albert wetland The macquarie marshes
Great Barrier Reef Marine Park	None	-
Commonwealth Marine Area	None	-
Listed Threatened Ecological Communities	6	Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions Grey Box (*Eucalyptus macrocarpa*) Grassy Woodlands and derived Native Grasslands of South-eastern Australia Natural Grasslands on basalt and fine textured alluvial plains of northern NSW and Southern Queensland Poplar Box Grassy Woodland on Alluvial Plains Weeping Myall Woodlands White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and derived Native Grassland.
Listed Threatened Species	47	20 birds, 5 fish, 1 frog, 5 mammals, 3 reptiles, 13 plants
Listed Migratory Species	12	All migratory birds, classified as: 1 migratory marine bird 2 Migratory terrestrial birds 9 migratory wetland birds
Commonwealth Land	15	Includes: Two Commonwealth Bank of Australia One Commonwealth Trading Bank of Australia One Australian Postal Corporation Five Telstra Corporation Limited Two Defence One Airservices Australia Two Unknown Commonwealth lands

Commonwealth Heritage Places	None	-
Listed Marine Species	23	All 23 are marine bird species
Whales and Other Cetaceans	None	-
Critical Habitats	None	-
Commonwealth Reserves Terrestrial	None	-
Australian Marine Parks	None	-
Habitat Critical to the survival of Marine Turtles	None	-
State and Territory Reserves	2	CCA Zone 1 National Park: Sappa Bulga CCA Zone 3 State Conservation Area: Beni
Regional Forest Agreements	None	-
Nationally Important Wetlands	None	-
EPBC Act Referrals	6	2015/7522: Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia (completed). 2000/32: Dubbo – Tamworth Natural Gas Pipeline 2020/8868: Dubbo Quarry Continuation Project 2012/6625: Dubbo Zirconia Project 2023/095560: Dubbo Firming Power Station 2022/094111: 2679.01 – Dubbo – BDAR – Proposed Residential and Industrial Subdivision
Key Ecological Features (Marine)	None	-
Biologically Important Areas	None	-
Bioregional Assessments	1	Central West sub-region - Northern Inland Catchments
Geological and Bioregional Assessments	None	-

Predicted Species

Sixty-eight threatened or migratory fauna species or populations listed under the BC Act, FM Act, and/or EPBC Act-listed threatened or migratory fauna species and thirteen BC and/or EPBC Act-listed threatened flora species were assessed as having a moderate or greater likelihood of occurring at the subject site based on habitat requirements.

Plant Community Types

Locally mapped PCTs were identified using SVTM map sourced from the NSW SEED website. This map is not necessarily correct within any given subject land; however, it can be reliably used as an indication of PCTs likely to occur in the local landscape and the subject land. The 12 mapped PCTs are named in **Table 5** below. Confirmation of PCTs present following survey is provided in **Section 6.5.2.2**.

Table 5: Predicted Plant Community Type within close proximity of Proposal Area

PCT ID	PCT NAME
PCT 45	Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW South Western Slopes Bioregion
PCT 54	Buloke - White Cypress Pine woodland in the NSW South Western Slopes Bioregion
PCT 70	White Cypress Pine woodland on sandy loams in central NSW wheatbelt
PCT 74	Yellow Box - River Red Gum tall grassy riverine woodland of NSW South Western Slopes Bioregion and Riverina Bioregion
PCT 76	Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
PCT 78	River Red Gum riparian tall woodland / open forest wetland in the Nandewar Bioregion and Brigalow Belt South Bioregion
PCT 81	Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion
PCT 141	Broombush - wattle very tall shrubland of the Pilliga to Goonoo regions, Brigalow Belt South Bioregion
PCT 248	Mixed box eucalypt woodland on low sandy-loam rises on alluvial plains in central western NSW
PCT 267	White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion
PCT 469	White Cypress Pine - Narrow-leaved Ironbark - Buloke grassy open forest of the Dubbo region, southern Brigalow Belt South Bioregion
PCT 471	Dwyer's Red Gum - Black Cypress Pine - ironbark low woodland on sandstone hillcrests in the Dubbo - Gilgandra region, south-western Brigalow Belt South Bioregion

Threatened Ecological Communities

According to the BioNet Vegetation Classification Database, many of the PCTs encountered have associated TECs (**Table 6**). Vegetation within the subject site was assessed against the conditional criteria for each BC Act- listed or EPBC Act -listed TEC known, or predicted, to occur within the relevant Interim Biogeographic Regionalisation of Australia (IBRA) Subregions. TEC determinations are given in **Table 6** and **Appendix B.**

Table 6: Predicted Threatened Ecological Community within Proposal Area

PCT ID	ACT	LISTING STATUS	TEC NAME

26	BC Act	EEC*	Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions
	EPBC Act	EEC	Weeping Myall Woodlands
70	-	-	-
74	BC Act	CEEC**	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions
	EPBC Act	CEEC	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland
78	-	-	-
81	BC Act	EEC	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions
	EPBC Act	EEC	Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
248	BC Act	CEEC	Artesian Springs Ecological Community in the Great Artesian Basin
	BC Act	EEC	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions
	EPBC Act	EEC	Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
267	BC Act	EEC	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions
	BC Act	CEEC	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions
	EPBC Act	EEC	Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
	EPBC Act	CEEC	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

469	-	-	-

*EEC – Endangered Ecological Community
**CEEC – Critically Endangered Ecological Community

Biodiversity Values Map

Locations that correspond with the protected riparian land of the Macquarie River and Whylandra Creek, within the proposal area, are mapped as biodiversity values.

Key Fish Habitat

One major permanent watercourse (the Macquarie River) and 13 non-permanent watercourses occur within the proposal site (OzArk 2025a). The Macquarie River and Whylandra Creek are mapped as Key Fish Habitat. An unnamed third Strahler order stream that flows to the Macquarie River is located within the TWPZ land and will be crossed in four locations within this land. An unnamed third Strahler order stream that flows to Whylandra Creek in the vicinity of Dungary Road will also be crossed by the proposed powerline. Both these aforementioned third order streams are mapped as Key Fish Habitat.

Impact to the hydrological features from pole placement work would be avoided. All pole placements in the vicinity of watercourses are greater than 40m.

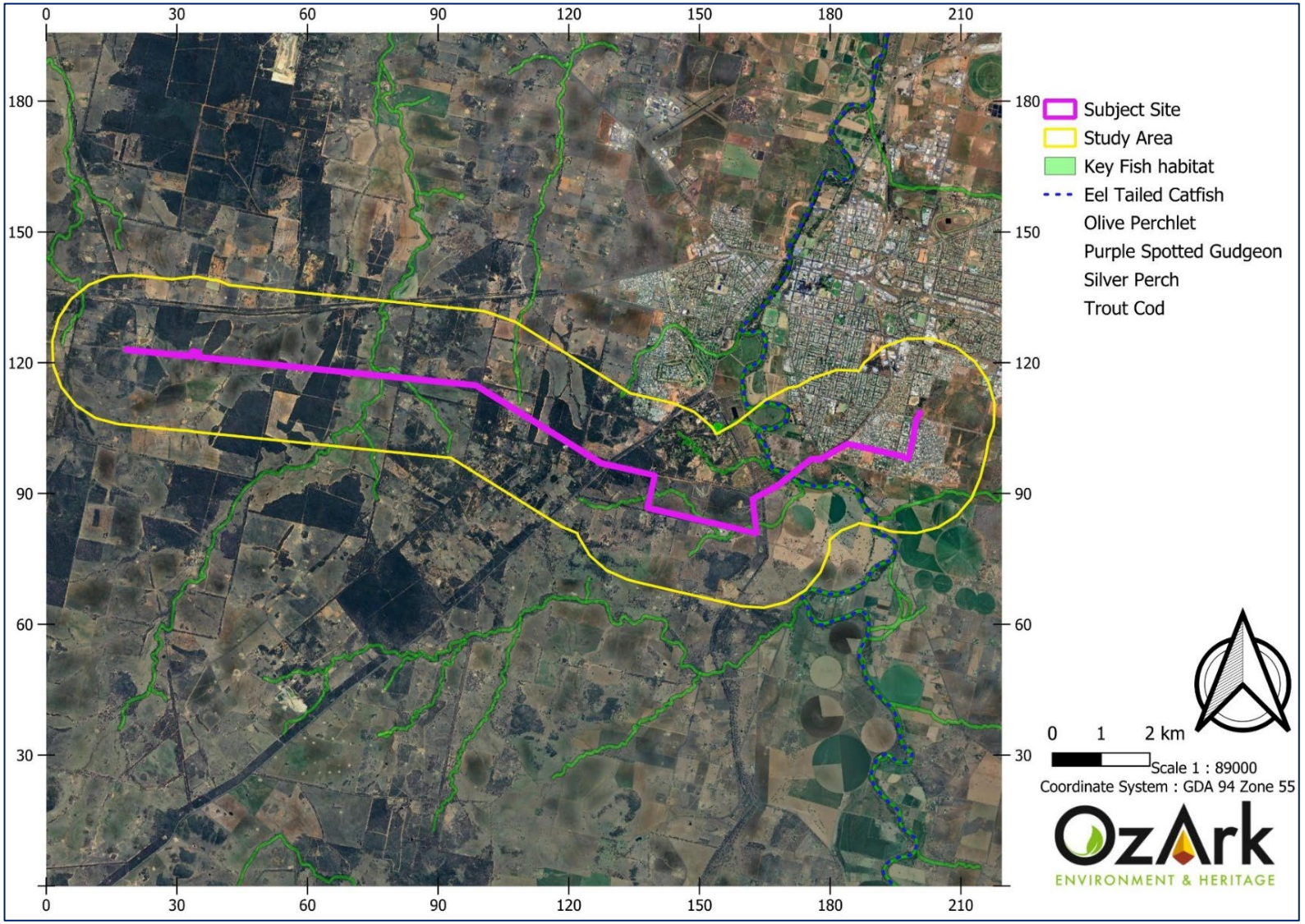

Figure 11: Key Fish Habitat Mapping

Groundwater Dependant Ecosystems (GDE)

Groundwater plays an important ecological role in directly and indirectly supporting terrestrial and aquatic ecosystems. Groundwater sustains terrestrial and aquatic ecosystems by supporting vegetation and providing discharge to channels, lacustrine and palustrine wetlands, and both the estuarine and marine environment. Aquifer ecosystems are inherently groundwater dependent (QLD Department of Environment and Heritage Protection, 2017).

The Bureau of Meteorology Atlas of Groundwater Dependent Ecosystems (GDEs) (Bureau of Meteorology, 2017) identified areas of low, and high potential GDEs (high GDEs along the Macquarie River) within the subject site. Additionally, medium and low potential DEs are found within the broader study area. **Figure 12** demonstrates GDE probability mapping in the landscape.

Given the relatively small scale of the excavation required (i.e., limited to pole hole augers at discrete locations along the powerline alignment), no significant impacts on GDEs are anticipated.

Given the low probability of being a ground water dependant ecosystem, and the geotechnical investigation (Fortify Geotechnic, 2024) identifying groundwater in five of the 30 boreholes, at depths of 3.9mBGS at its shallowest and 7mBGS at its deepest, it is unlikely that excavation and augering works in the proposal site will result in interaction with any permanent aquifer. If groundwater is intercepted, the area of infiltration (diameter of the pole hole) is small and any groundwater requiring extraction would be negligible. Thus, ground water dependant ecosystems are not considered further.

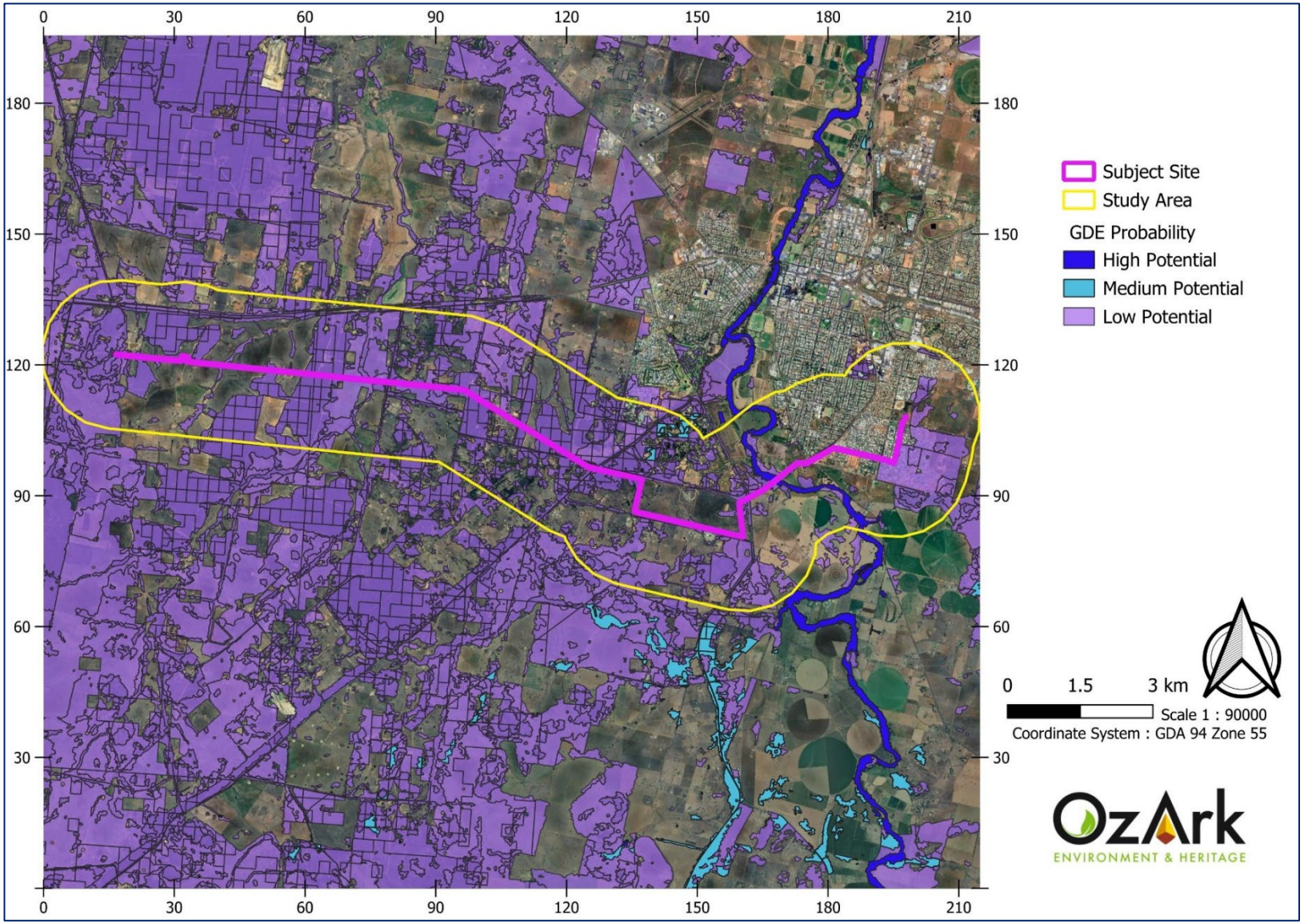

Figure 12: Groundwater Dependent Ecosystems within the landscape

6.5.2.2 Field Survey Results

Plant Community Types

PCTs mapped as part of the desktop review were refined and corrected based on field observations of mid, upper, and ground stratum species and landform. PCTs confirmed as occurring within the proposal site are outlined in **Table 7** and **Figure 13**.

Table 7: Plant Community Types confirmed as present from site inspection

PCT ID	PCT NAME	EXTENT WITHIN PROPOSAL AREA (HA)
PCT 26	Weeping Myall open woodland of the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion	0.10
PCT 70	White Cypress Pine woodland on sandy loams in central NSW wheatbelt	1.01
PCT 74	Yellow Box - River Red Gum tall grassy riverine woodland of NSW South Western Slopes Bioregion and Riverina Bioregion	1.24
PCT 78	River Red Gum riparian tall woodland / open forest wetland in the Nandewar Bioregion and Brigalow Belt South Bioregion	0.27
PCT 81	Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion	0.43
PCT 248	Mixed box eucalypt woodland on low sandy-loam rises on alluvial plains in central western NSW	1.84
PCT 267	White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion	12.38
PCT 469	White Cypress Pine - Narrow-leaved Ironbark - Buloke grassy open forest of the Dubbo region, southern Brigalow Belt South Bioregion	0.60
	Total Native Vegetation	17.87
PCT 0	Non-native vegetation, bare ground, and the existing road surface, between poles 19 and 20, poles 26 and 27, and poles 48 and 49.	69.94
	Total	**87.81**

Figure 13: PCT designation following survey

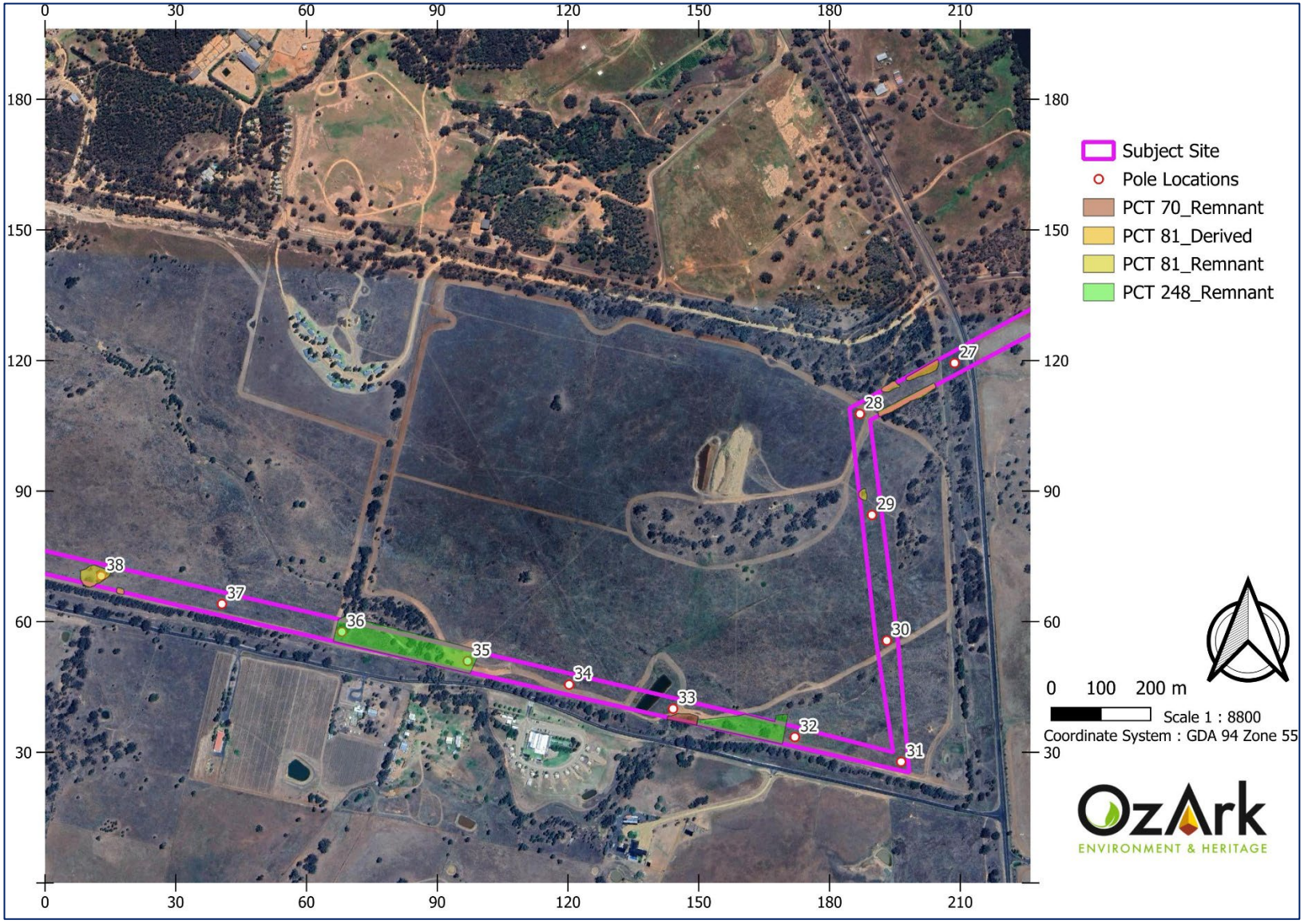

Figure 14: PCT designation following survey

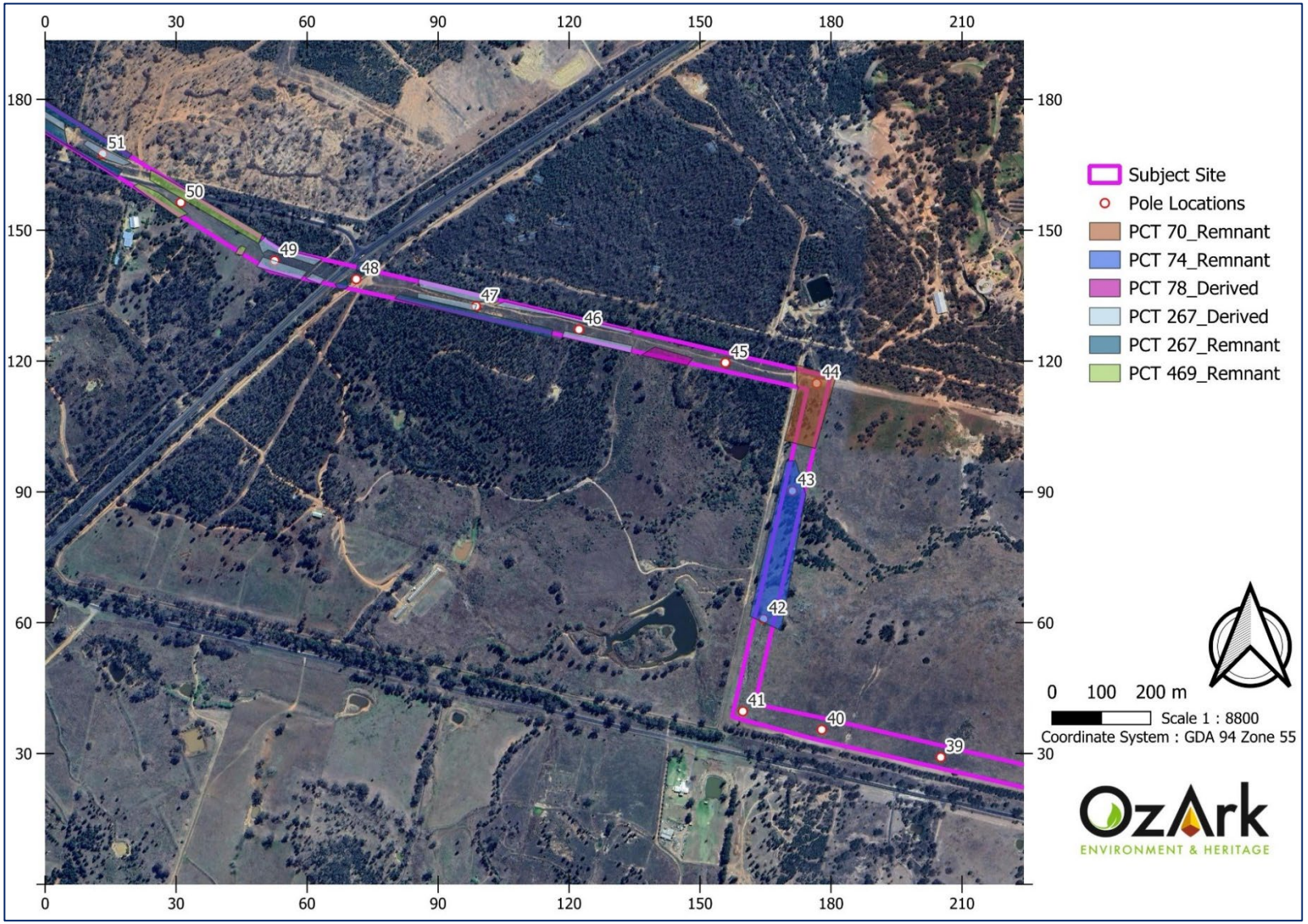

Figure 15: PCT designation following survey

Figure 16: PCT designation following survey

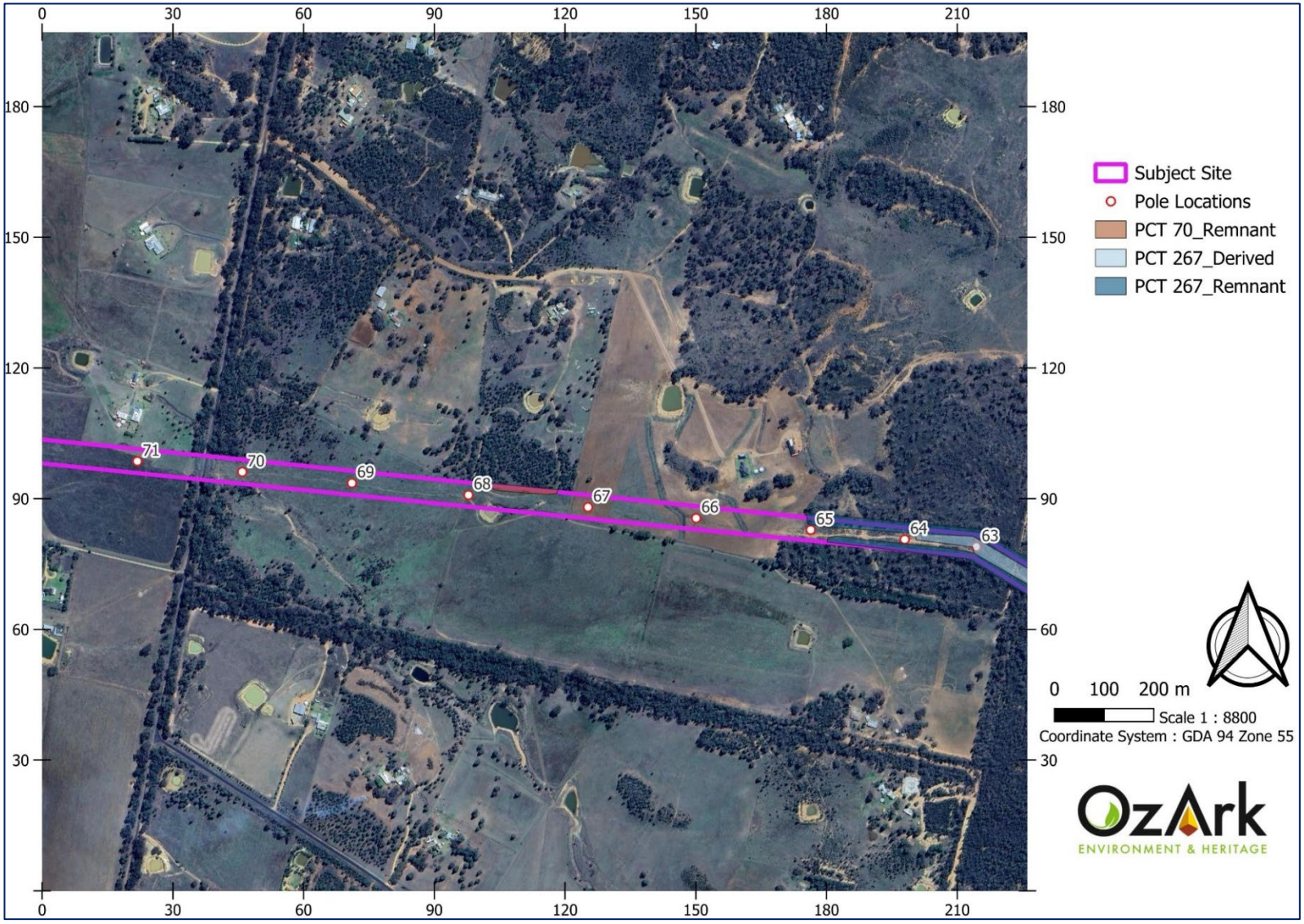

Figure 17: PCT designation following survey

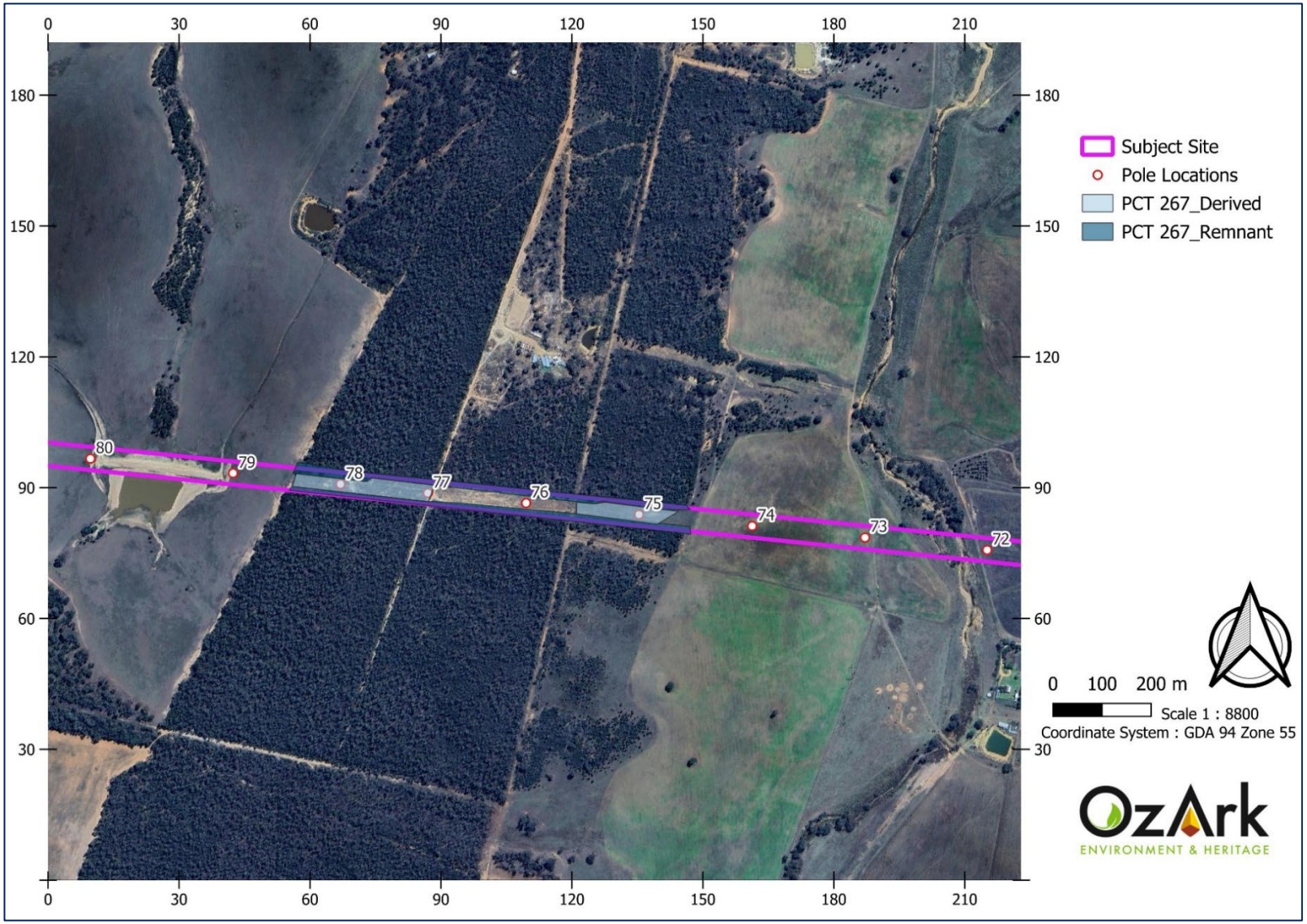

Figure 18: PCT designation following survey

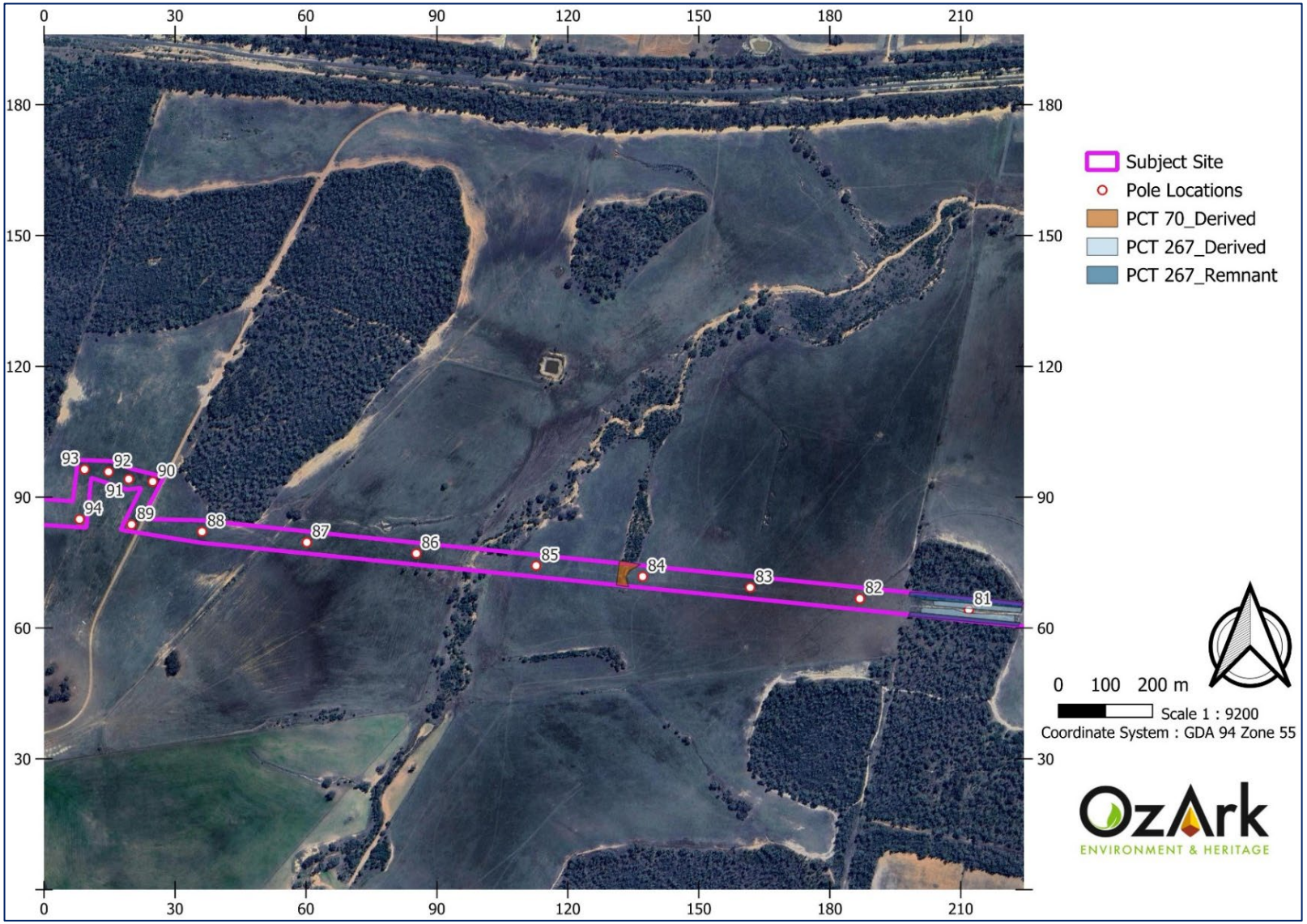

Figure 19: PCT designation following survey

TECs

Of the TECs identified as being associated with the PCTs identified, the following were confirmed.

The occurrence of PCT 26 fits the criteria for the *Biodiversity Conservation Act 2016* (BC Act)-listed Endangered Ecological Community (EEC)*: Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions*.

The occurrence of PCT 74 fits the criteria for the BC Act-listed Critically Endangered Ecological Community (CEEC): *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions.*

The occurrences of PCT 81, 248 and 267 all fit the criteria for the BC Act-listed EEC: *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions.*

Review of diagnostic features and criteria identified that no *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)-listed TECs will be impacted by the proposal.

The aquatic EEC: *The aquatic ecological community in the natural Darling River Endangered Ecological Community* occurs within the subject site.

Habitat

The following core habitat features were identified within the subject land:

- between poles 32 and 39, there are three hollow-bearing trees—two Grey Box (*Eucalyptus microcarpa)* and one River Red Gum (*Eucalyptus camaldulensis*) —that contain a total of three small hollows (S, 5-10 cm), two medium hollows (M, 10-20 cm), and one large hollow (L, 20-30 cm)
- between poles 32 and 33 two trees contain bird nests
- between poles 45 and 46, bilby burrows are present (within TWPZ)
- between poles 63 and 64 an aggregate of rocks was observed

Location of the habitat tress and features within the subject land are shown in **Figure 20**. Food and shelter may be provided to native animals in the remnant woodland. The ploughed areas do not have significant habitat value

Threatened Species

No threatened flora or fauna were recorded during the field assessment. Predicted listed fauna species are assumed to occur within the proposal site, where suitable habitat exists and where the survey was not sufficient to confirm the species was not present.

Suitable habitat for listed fauna species recorded within the proposal site is shown in **Figure 20**.

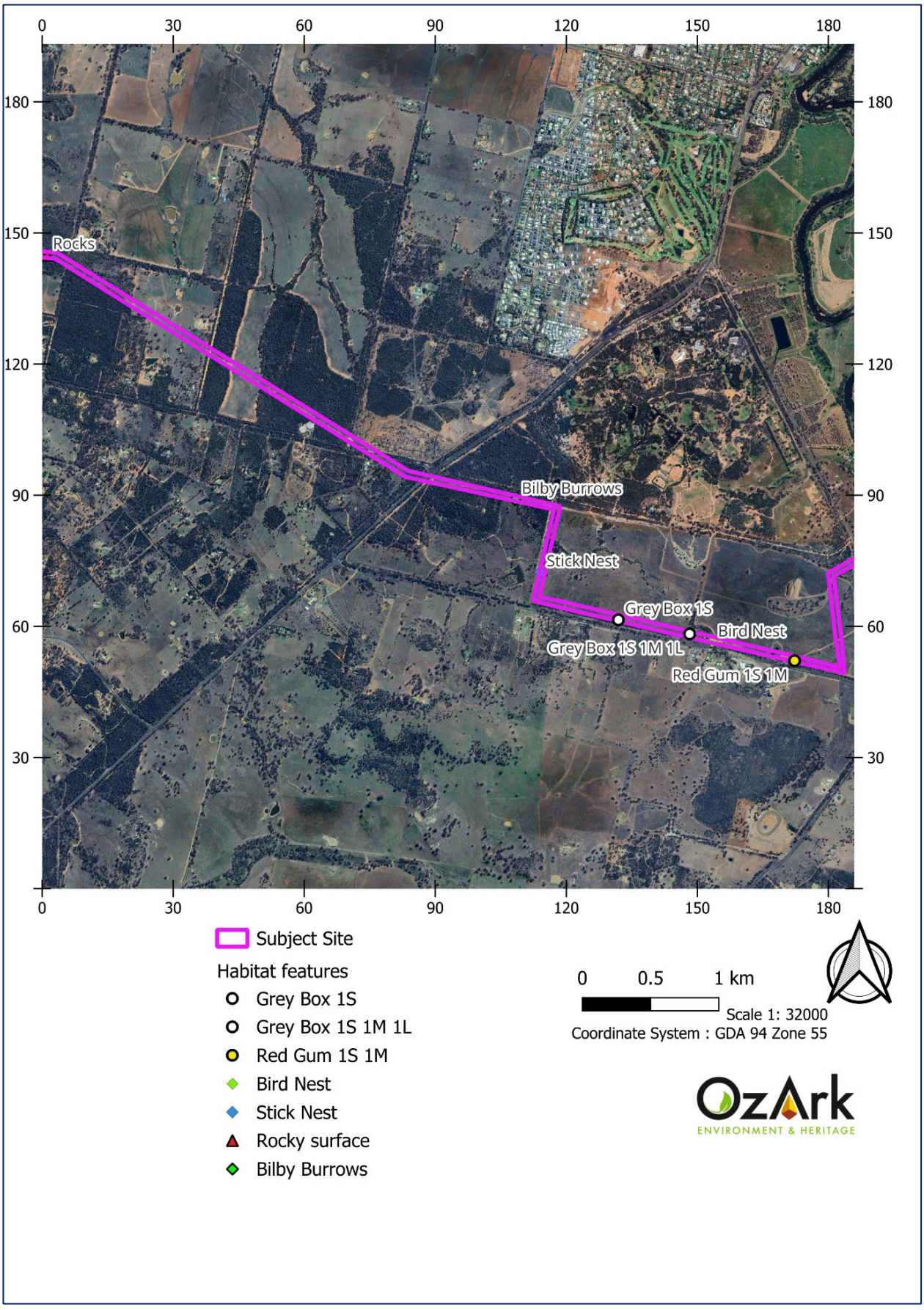

Figure 20: Hollow bearing trees and habitat features within the proposal site

Aquatic Communities

Within the subject site there is one major, permanent watercourse (Macquarie River) and 13 other non-permanent minor watercourses, including Whylandra Creek, that cross the subject site between poles 72 and 73. The thirteen minor watercourses comprise of seven Strahler 1st order, two Strahler 2nd order, two Strahler 3rd order and two Strahler 4th order that cross alignment corridor (under the proposed power line. Sections of the subject site fall within Protected Riparian Land (PRL), with two sections of the alignment corridor intersected by PRL—specifically between poles 23 and 24, and between poles 72 and 73.

Five threatened fish species or threatened populations are predicted to occur within the subject site or study area, largely in the Macquarie River (**Figure 11**).

- Silver Perch (*Bidyanus bidyanus*), listed as Vulnerable under the FM Act and Critically Endangered under the EPBC Act
- Purple spotted Gudgeon (*Mogurnda adspersa), listed as* Endangered under the FM Act
- Murray-Darling Basin population of Eel Tailed Catfish (*Tandanus tandanus*), listed as an Endangered population under the FM Act
- Western population of Olive Perchlet (*Ambassis agassizii*), listed as an Endangered population under the FM Act
- Trout cod (*Maccullochella macquariensis*), listed as endangered under both the FM Act and EPBC Act

The aquatic ecological community in the natural Darling River Endangered Ecological Community occurs within the subject site.

Pests, weeds and disease

There was a high number of notable exotic plant species recorded in abundance within the subject land. Of the 33 exotic plant species recorded during the field survey, nine are listed as High-threat Exotic species (HTE). Two species are listed as Weeds of National Significance (WoNS), being the African Boxthorn (*Lycium ferocissimum*) and Velvet Tree Pear (*Opuntia tomentosa*). Coolatai Grass (*Hyparrhenia hirta*) was identified, and is a Priority Weed (PW) within the Central West LLS region. Further detail on weeds identified in the subject land is outlined in **Appendix B**.

The study area is likely already habitat for a range of pest species, such as European red fox (*Vulpes vulpes*), feral cats (*Felis catus*), feral pigs (*Sus scrofa*) and feral rabbits (*Oryctolagus cuniculus*).

Several pathogens known from NSW have the potential to impact on biodiversity as a result of their movement and infection during construction. Of these, three are listed as a key threatening process under either the EPBC Act and/or BC Act including:

- Dieback caused by *Phytophthora* (Root Rot; EPBC Act and BC Act)
- Infection of frogs by amphibian chytrid fungus causing the disease chytridiomycosis (EPBC Act and BC Act)
- Introduction and establishment of exotic Rust Fungi of the order Pucciniales on plants of the family Myrtaceae (BC Act).

These pathogens were not observed or tested for in the study area.

6.5.3 ASSESSMENT OF IMPACT

6.5.3.1 Direct Impact

Habitat, Connectivity and Fragmentation

The proposal site predominately spans an existing cleared corridor, along which the current overhead powerline runs, except for the section within the TWPZ easement, where a new corridor needs to be created. Minimal additional clearing will be undertaken to maintain required powerline clearances, which

would occur at the edges minimising impacts associated with fragmentation. It is unlikely that the proposal will exacerbate any of the existing fragmentation to an extent where it will impact the connectivity between habitats.

The proposal site is in an area that is currently subject to a moderate level of edge effects from the cleared corridor for the overhead powerline. Additional width clearance of vegetation has the potential to increase edge effects into surrounding vegetation beyond what is currently occurring. These may result from changes in abiotic factors (e.g., the microclimate) or from biotic factors associated with weed encroachment.

Native Vegetation

All mapped native vegetation within the proposal site is outlined in **Table 7**. Associated TECs and area to be impacted by the proposal is outlined in **Table 8**.

TECsThe subject site is 87.81 ha in area, of which 17.87 ha consists of native vegetation, the remainder was comprised of non-native vegetation, bare ground, and the existing road surface. The maximum potential extent of TECs likely to be impacted by the proposal is 15.99 ha; of these, 1.24 ha are BC Act-listed CEECs and 14.75 ha are BC Act-listed EECs (**Table 8**).

Table 8: Threatened Ecological Community – Maximum potential extent to be impacted by proposal

PCT NUMBER	TEC NAME	NSW STATUS	AREA (HA)
26	Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions	Endangered Ecological Community	0.10
74	White Box - Yellow Box - Blakelys Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	Critically Endangered Ecological Community	1.24
81	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	Endangered Ecological Community	0.43
248	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	Endangered Ecological Community	1.84
267	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	Endangered Ecological Community	12.38
	Total area with potential to be impacted		15.99

Powerlines, by their nature, involve discrete areas of disturbance related to the pole locations, pads and access. The development of a powerline corridor can co-exist with a variety of ecological values, particularly those related to TECs. Once the powerline has been constructed those values can recover and occupy the same area, with the exception of pole locations, prior to the development of the proposal. Consequently, the area of impact from the construction of the powerline will be substantially less than what has been assessed in this REF.

Tests of significance for impact to these TEC's are provided in **Appendix B**. The tests concluded there will be no significant impact.

Threatened Species

Sixty eight (68) threatened species were determined to have potential to occur within the subject land and/or use habitat in the proposal footprint.

Assessment of the significance have been completed for these species as per the BC Act, FM Act and EPBC Act significant impact criteria. Based on the results of the tests of significance, a significant impact is unlikely(refer **Appendix B)**.

Migratory Species

Significant impact to migratory species is considered unlikely, given that there are similar areas of similar habitat for breeding and foraging in the immediate vicinity of the proposal site. An assessment of significance was prepared for migratory species, in **Appendix B**.

Hollow Bearing Trees

Within the subject site, between poles 32 and 39, there are three hollow-bearing trees—two Grey Box (*Eucalyptus microcarpa)* and one River Red Gum (*Eucalyptus camaldulensis*) —that contain a total of three small hollows (S, 5-10 cm), two medium hollows (M, 10-20 cm), and one large hollow (L, 20-30 cm).

Soils and Drainage

Soils will be disturbed during construction. Disturbed soils have the potential to move off the proposal site and impact waterways if not appropriately managed. Site stabilisation practices, including installation of appropriate erosion and sediment controls (refer **Section 6.2.3**) and will be applied to the area during, and where required after construction, to ensure no long-term impact to the biodiversity values. The development will not have a significant long-term impact on the hydrology at any scale.

6.5.3.2 Indirect impact

Injury to wildlife

Injury to wildlife is possible, but unlikely during the construction phase of this proposal. This could occur during vegetation removal or fauna sheltering in machinery. Contact with wildlife and suitable habitat will be avoided wherever possible. Local wildlife rescue organisation should be contacted in the event wildlife requires rescue or removal.

Spread of pests, weeds and disease

The risk of spreading pests and disease is unlikely given works will be contained to an already disturbed site.

Invasion and spread of weeds are also considered unlikely, although soil disturbance may result in new weed populations or encourage seed germination of existing weed species. Introduction or spread of weeds through the proposal site may be associated with these actions:

- Removing groundcover species
- Excavation, soil stripping and importation of fill.

Management of weed dispersion and pest/disease is considered in the mitigation measures **Section 6.5.4**.

Noise, light and vibration

Limited vibration will be caused for a short period of time during construction. Upon commissioning, no vibration is predicted. Construction will generally occur during daylight– with no current allowance for

lighting during the construction phase. Lighting is used on an ad-hoc basis at the powerlines during operation phase, when the site is being attended during an inspection, maintenance or emergency.

Impact on Key Threatening Processes

OzArk (2025a) detailed that the proposal has the potential to exacerbate key threatening processes, particularly removal of native vegetation, however, assessments of significance have identified that the impact to threatened flora, fauna and TEC is not significant. The proposal will have a negligible contribution to human made climate change.

6.5.3.3 Cumulative Impact

Impacts from the proposal are considered unlikely to result in a permanent cumulative impact to native species, populations and communities given the activity will largely occur in an historically cleared and degraded landscape and a range of measures will be taken to avoid, minimise and mitigate potential impacts as set out in **Section 6.5.4**.

6.5.4 ENVIRONMENTAL MITIGATION MEASURES

Impacts to native vegetation have been avoided to the extent practicable through site selection, being largely located within land previously cleared for the existing 132kV overhead powerline, outside of the new alignment required at the Zoo. Notwithstanding, the following mitigation measures are recommended for minimising the residual impact of the proposal:

- Any change in design affecting land outside the proposal site assessed in this report will require further consideration
- To minimise clearing of EECs the boundary of the EEC will be identified
- A staged habitat removal process is recommended when identified habitat is to be removed, where practicable.
- Immediately prior to commencement vegetation removal involving hollow bearing trees, the tree to be inspected for fauna
- If fauna is detected, the animal is to be allowed to leave the site without any coercion or a local wildlife rescue service is to be contacted to facilitate the safe removal of the animal from the worksite
- Erosion and Sediment Control measures will be considered consistent with Landcom's Managing Urban Stormwater, Soils & Construction Guidelines (The Blue Book. Landcom 2004).
- Where possible segments of trees removed from tree lopping to be placed in adjoining habitat where agreed upon with landowner
- Provide spill kits around temporary construction ancillary facilities
- All food scraps and rubbish are to be appropriately disposed of to discourage feral animals
- Essential Energy has a general biosecurity duty under the Biosecurity Act 2015 to prevent, eliminate or minimise biosecurity risk so far as is reasonably practicable. Field crews shall follow procedures as outlined in Essential Energy's Operational Guideline: Biosecurity Risk Management (CERM1000.96) to prevent, eliminate or minimise biosecurity risk so far as is reasonably practicable, with particular reference to vehicle and equipment hygiene practises
- Only place stockpiles in low value vegetation or cleared sites within the assessed project footprint.

6.5.5 CONCLUSION

The proposal will not result in a significant impact to the ecological values present in the proposal site. The impact to listed threatened species, populations or communities recorded or presumed to occur in the proposal site was assessed as not significant. Safeguards and mitigation measures have been provided to minimise harm to the environment. The proposal is unlikely to have a significant impact to species, populations or communities listed under the EPBC Act, BC Act, or FM Act. As such the environmental risk is considered to be low to moderate.

6.6 Aboriginal Heritage

OzArk Environment and Heritage (OzArk, 2025b) was engaged by Essential Energy to undertake an Aboriginal heritage due diligence assessment of the proposal site, in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW, 2010). The key findings of this assessment are presented below, with the full Aboriginal heritage due diligence assessment attached to this REF as **Appendix C**.

In considering the significant land disturbance of the South Lakes residential estate, including:

- bulk earthworks, topsoil stripping
- installation of services
- installation of stormwater retention basins and modification to surface water flows
- landscaping
- and the ongoing maintenance of the existing 132kV overhead powerline

the focus of survey field effort for the Aboriginal due diligence assessment was on those areas along the alignment of the proposed activity that had potential to retain archaeological values.

6.6.1 EXISTING ENVIRONMENT

6.6.1.1 Landforms and geology

As per **Section 6.2.1**.

The geological diversity of this region would have provided Aboriginal people with a range of stone materials for manufacturing tools, including:

- Quartz and quartzite (from quartzose sandstones and granites) – Used for sharp-edged flaked tools, scrapers, and cutting implements due to its hardness and conchoidal fracture properties
- Slate and phyllite – Less commonly used but occasionally shaped into grinding slabs, pigment palettes, and heat-treated tools
- Serpentinite – Associated with spiritual and ceremonial rites. The limestone karst landscapes would have also provided the Aboriginal people not only with a different variety locally of plant and animal resources, but also a place for shelter and ceremonial purposes (AREA, 2025).

6.6.1.2 Hydrological features

The site traverses the Macquarie River. It also traverses 13 non-permanent watercourses, including Whylandra Creek. OzArk (2025) identified that artefact scatters have largely been recorded in proximity to the Macquarie River and its tributaries. Due to the proximity of the study area to the Macquarie River as well as several tributary creeks and waterways, there is an increased likelihood that additional examples of this site type will be recorded within the study area.

6.6.1.3 Land use history

Land-use history refers to the past land use of the proposal site. The nature and frequency of different land-use activities must be quantified to assess their effect on the survival of the material traces of past Aboriginal land use (e.g. a single ploughing event may have much less impact on any in-situ archaeological material than decades of annual ploughing; land clearing will have had impact on subsurface deposits, and may remove any culturally modified trees entirely).

John Oxley was the first European explorer to travel along the Macquarie River from Wellington Valley in 1817. The proposal site is in the vicinity of the Main Western Railway line as the proposal becomes parallel with Minore Road. This railway line is one of the major railways in New South Wales, connecting Sydney and Bourke.

The majority of the land has historically been used as agricultural land, with locations closer to the Dubbo township now becoming residential sub-divisions.

6.6.1.4 Regional cultural and archaeological context

The proposal is in the northern region of Wiradjuri land (Horton 1996). The Wiradjuri people were first encountered by colonial explorers such as Oxley and Cummingham in the early 1800s (Whitehead 2003). They found that Wiradjuri groups, such as the 'Bultje tribe' comprised of up to 120 individuals and hunted emus, kangaroos, and possums for food. Fishing was also utilised to sustain the population with both mussels and freshwater fish being caught by the women of the tribe who used moveable dams made of grass to direct fish, making them easier to catch (Kass 2003: 6).

The archaeological investigations summarised below provide baseline data for placing past Aboriginal sites within the regional landscape context.

Pearson 1981

Pearson mainly worked in the Upper Macquarie region making his findings relevant to the study area. Through Aboriginal site analysis, Pearson was able to produce a predictive site model which could be extrapolated upon to determine the location of future occupation and non-occupation sites.

Occupation sites were found to occur where good drainage, level ground and access to water were present. They were more likely to be located on landforms such as creek banks, low ridge tops and river flats in open woodland vegetation. However, non-occupation site locations were found to be more inconsistent and was more heavily related to the individual function of that site. Scarred trees appeared to contain no obvious patterning and grinding grooves only occurred where adequate rocky outcropping was also present. Pearson also considered that these trends could differ where dependence on larger and more permanent waterways was greater.

Koettig 1985

Koettig focussed more heavily on Aboriginal occupation around the town of Dubbo. She concluded that artefact scatters, culturally modified trees and grinding grooves were the most frequently recorded site type in the region.

The location and size of a particular site was determined to be dependent on both social and environmental factors including proximity to water, availability of food and geological formations. Koettig's predictive model concluded that all site types were more likely to be recorded along waterways except scarred trees and 'small' campsites, which did not occur in a predictable manner.

6.6.1.5 Local Archaeological Context

OzArk 2002

OzArk (2002) completed a survey of 976 ha of land for the TWPZ.

The report found that all areas subject to investigation had undergone considerable modification since the advent of British settlement and virtually no areas could be considered completely 'undisturbed.'

Twelve Aboriginal sites were located during the physical survey, that incorporates the TWPZ land traversed by this project. When added to the suite of previously recorded Aboriginal sites within the zoo, there are fourteen artefact scatters, fifteen culturally modified trees, two isolated finds, one midden, and one site complex including grinding grooves, artefacts and other cultural evidence (now removed burials and carved trees). It was concluded that these sites comprise a cultural landscape which provides considerable physical evidence for the range of activities carried out by the Aboriginal inhabitants of these lands.

Artefact scatters were predominantly found to occur along creek banks or within 200 m of the Macquarie River. Culturally modified trees were also found to occur close to waterways, but some were identified up to 500 m from creeks and rivers.

The burial site recorded in 1918, is located on the gentle slope leading away from the alluvial flats of the Macquarie River (east of Obley Road) and is associated with grinding grooves seen on the outcropping sandstone. Appropriate outcropping rock was not identified in the current study area. It was noted, however, that the creek lines within the TWPZ proper (i.e. not the land adjoining the Macquarie River that is not subject to zoo-keeping), were heavily disturbed and evidence of grinding grooves was considered unlikely.

Since 2002, OzArk have completed numerous small-scale assessments on behalf of TWPZ. Most were within the TWPZ proper of the 2002 assessment.

OzArk 2006

An assessment of Aboriginal heritage resources within the then Dubbo Local Government Area (LGA) to assist Dubbo City Council (now Dubbo Regional Council) with planning was undertaken by OzArk (2006). This study aimed to consolidate previous surveys and assessments of Aboriginal heritage; set a baseline for further study; and survey areas zoned for future expansion. Approximately 1,120 ha of land was surveyed within five study areas surrounding the city of Dubbo. During the survey, 26 new Aboriginal sites were recorded, and eight out of 12 previously recorded sites were relocated. A number of the newly recorded site types were similar to those found in previous studies.

Fewer scarred trees were recorded than expected, likely due to intensive agricultural practices and associated tree clearance around Dubbo city compared to the broader Dubbo LGA. No new grinding groove sites were recorded, which was understandable given that this site type comprised only 3.6% of previously located sites within the Dubbo LGA.

Scarred tree distribution adhered to the predictive model, exclusively following waterways and fence-lines, although this probably reflected land clearing practices more than Aboriginal site patterning.

Isolated finds and open sites followed a similar pattern, largely limited to watercourse edges, and elevated terraces within 500 m of the Macquarie (Wambuul) River and other permanent to semi-permanent waterways. No significant patterning emerged in terms of site size or quality, perhaps because surface manifestations often do not adequately reflect site size or complexity.

OzArk 2014

The report is the result of the Dubbo LGA Aboriginal cultural heritage study (OzArk 2006) and utilised GIS mapping, community consultation, and other archaeological resources to gain a more comprehensive understanding of the Aboriginal heritage of the Dubbo area. A total area of 207 square kilometres was considered as part of the project.

A total of 679 Aboriginal sites were considered in the study. Sites within the study area included artefact scatters, hearths, areas of potential archaeological deposit (PAD), and open camp sites, which comprised 57% of all sites in the Dubbo LGA. Culturally modified trees comprised 39% of recorded sites throughout the LGA.

OzArk 2014 concluded that almost all sites are located within 500 m of waterways, however, areas within 200 m are likely to contain more sites.

NGH 2021

In 2021, NGH Consulting Pty Ltd (NGH) undertook an Aboriginal Cultural Heritage Assessment (ACHAR) for the proposed Forest Glen Solar Farm which will connect into the upgraded Line 943/2 and 9GG. The assessment comprised a three-day archaeological survey. The survey located no new Aboriginal objects or sites, potentially a result of the extensive historic farming across the area and limitations provided by the lack of visibility in some areas. However, taking into consideration the substantial site modification that has occurred to the natural landscape, the presence of in-situ surface archaeology is low to nil.

No areas of potential archaeological deposit (PAD) were identified during the survey. Based on the land use history, an appraisal of the landscape, soil, level of disturbance and observations from the field survey, it

was concluded that there was negligible potential for the presence of intact subsurface deposits with high densities of cultural material within the Forest Glen Solar Farm project area.

OzArk 2024

In 2024, OzArk conducted a due diligence assessment which led to an ACHAR for the proposed TWPZ Serengeti Precinct development which will eventually encompass areas between proposed Structure 44 and 28 of the new Line 943/2 alignment. It was confirmed during the survey that one Aboriginal site, AHIMS ID# 36-1-0412, initially recorded as an isolated find in 2002, is in fact an artefact scatter. A total of 13 stone artefacts manufactured from quartz, quartzite, chert, and silcrete were recorded.

The site, now referred to as WPZ Serengeti OS1, was recorded 60 m east of an ephemeral waterway and intersects with the southern portion of the study area at the location proposed for Structure 35 along the proposed Line 943/2 alignment. Those artefacts were subsequently salvaged as part of the TWPZ Aboriginal Heritage Impact Permit (AHIP) and will not be impacted by the proposed Essential Energy development as discussed further in **Section 6.6.2**.

6.6.1.6 Database searches

A search of the Aboriginal Heritage Information Management System (AHIMS) determined that six Aboriginal sites were within the proposal footprint. The sites are five artefact scatters and one culturally modified tree, as shown in **Figure 21**.

6.6.1.7 Field Survey

A survey of the proposal site was conducted over three days from the 29 to 31 January 2025 by an OzArk Archaeologist, Jordan Henshaw. Roger Ebsworth representing Dubbo Local Aboriginal Land Council attended the visual inspection on 29 January 2025 and Karryn Schaefer representing Tubba-gah Maing attended the visual inspection on 30 and 31 January 2025. The field methods used to assess the Study area follow Section 2.2 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010a).

The aim of this survey is to identify and record all Aboriginal sites along the proposal site, including surface exposures (such as artefact scatters and shell middens), landscape features (e.g., rock shelters, rock art, and culturally modified trees like scarred or carved trees), and potential archaeological deposits (PADs) where there is a high likelihood of Aboriginal objects or material traces being present.

A handheld GPS was used to record the pedestrian transects. The survey effort is demonstrated in **Figure 22** and **Figure 23**.

During the survey, photographs and detailed notes were used to document any features relevant to assessing for archaeological potential. These features include pre-existing disturbances, GSV and high-risk landforms.

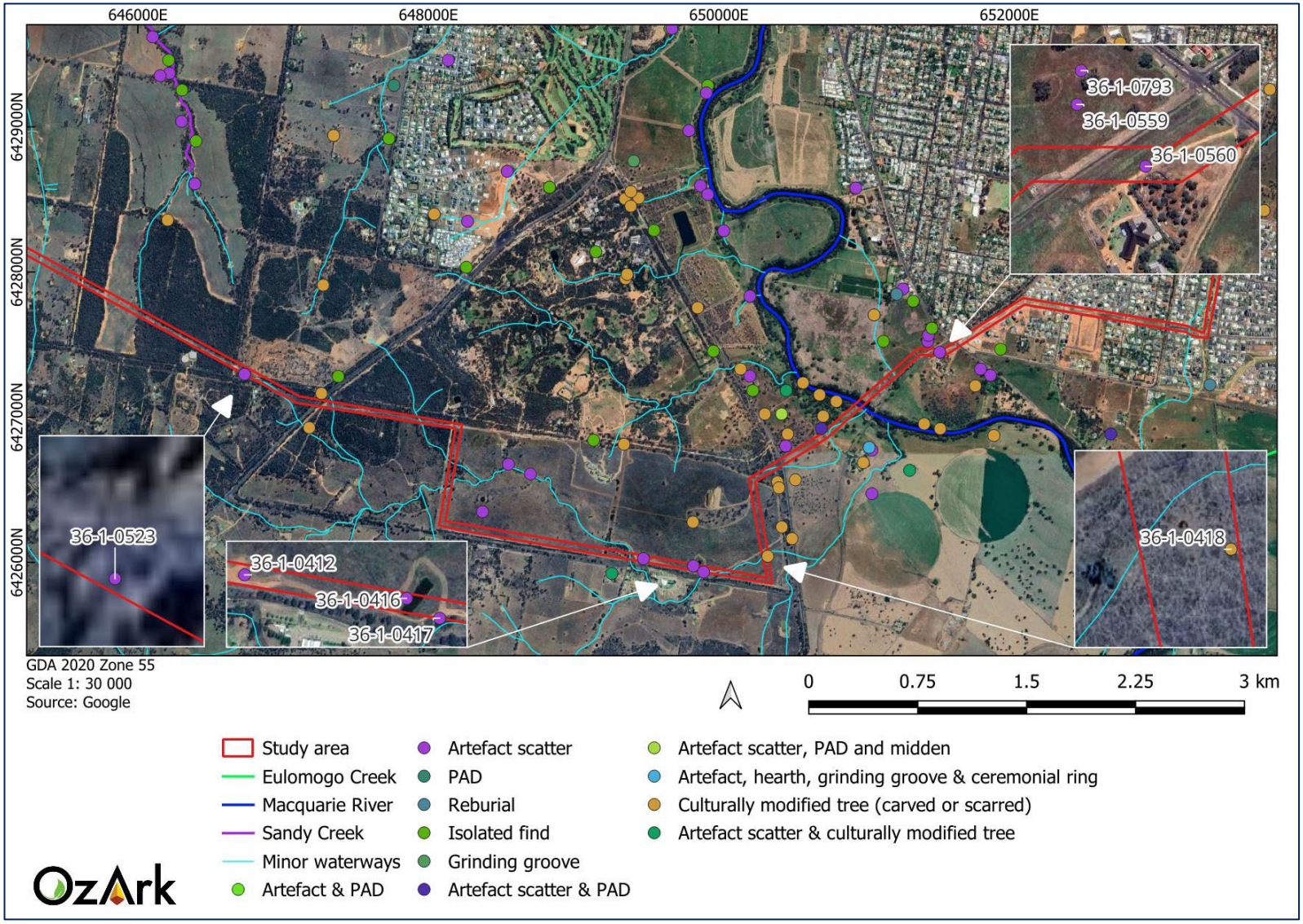

Figure 21: Previously identified Aboriginal Heritage sites (Source: AHIMS)

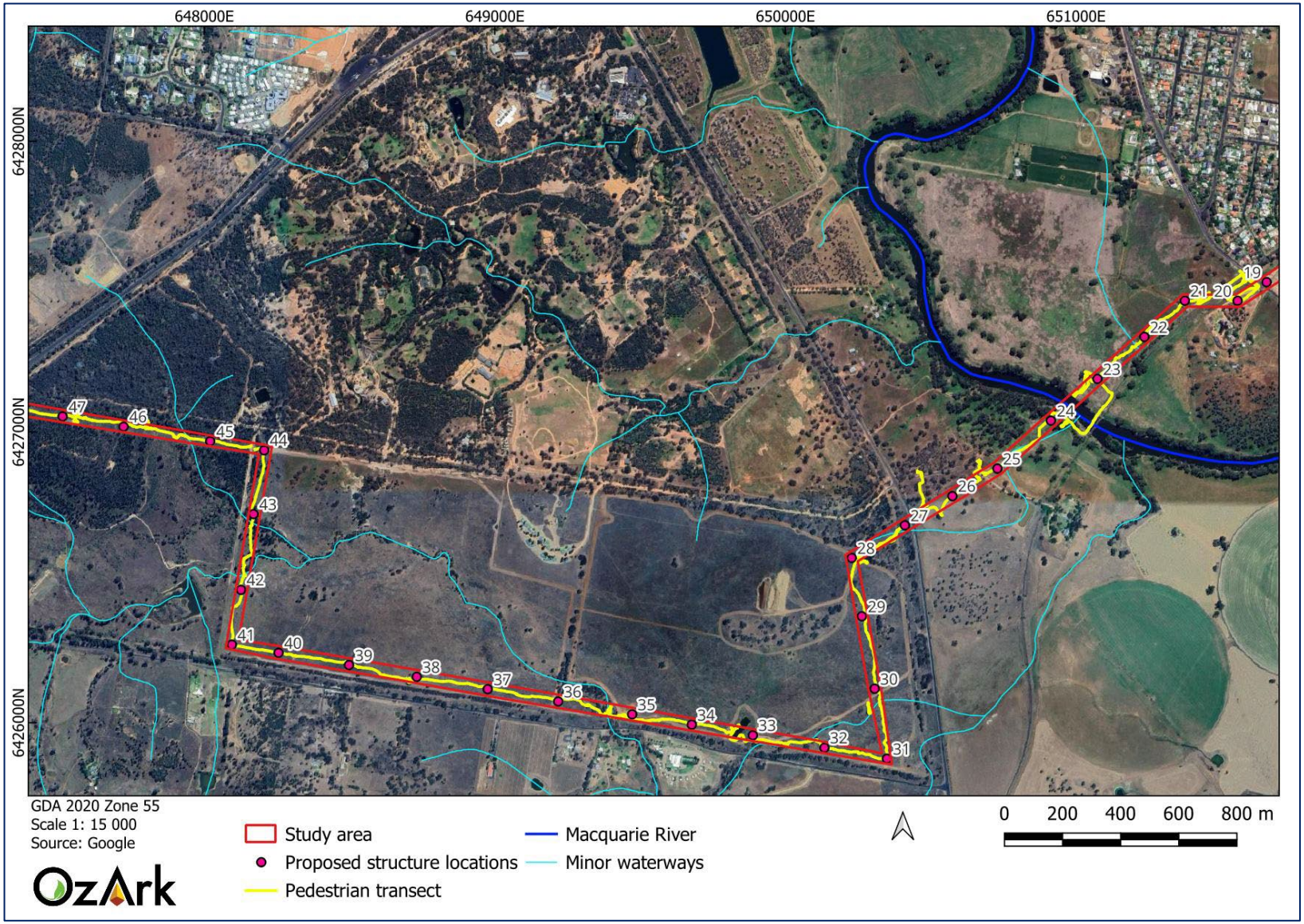

Figure 22: Survey effort and survey units (Source: OzArk 2025b)

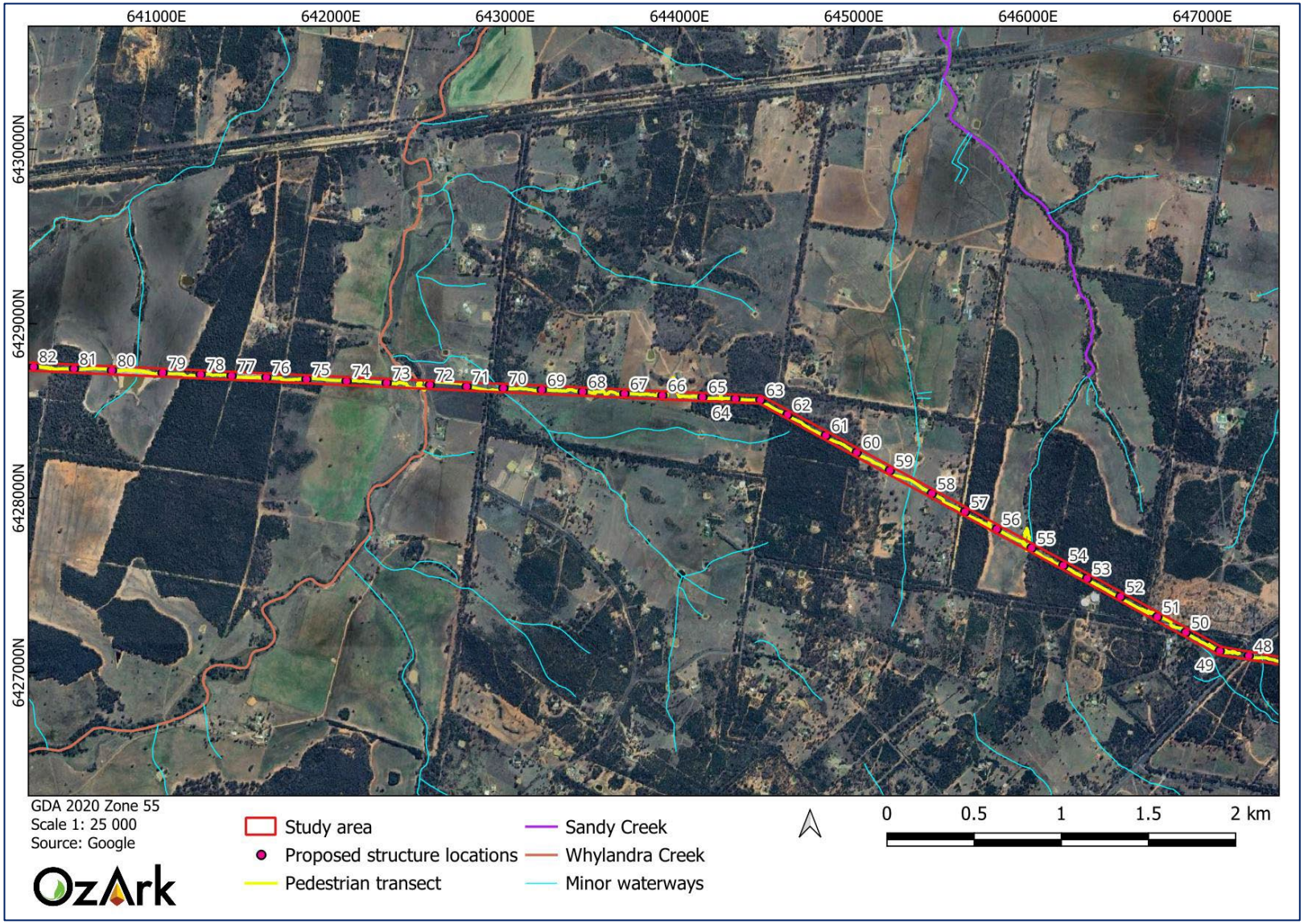

Figure 23: Survey effort and survey units (Source: OzArk 2025b)

6.6.2 ASSESSMENT OF IMPACT

Previously recorded sites were ground-truthed during the visual inspection of the proposal site. The ground truthing allowed for the locations of site WPZ-ST1 and CR-OS-1 to be corrected, as shown in **Figure 25**. The corrected locations identified that WPZ-ST1 and CR-OS-1 are outside of the proposal site, and thus beyond the footprint of disturbance associated with the proposal.

Ground truthing identified that no artefacts could be rediscovered at DLGA-OS-02, WPZ-OS5, and WPZ-OS4. The sites remain valid. Proposed work activities will be occurring in close proximity to WPZ-OS4 and WPZ-OS5. The original recorded location of WPZ-OS4 is within the disturbed footprint of an existing farm dam (on the inward, dam facing batter slope), which would not require access to construct the proposed works and nearest pole. WPZ-OS5 was inspected and no artefacts were observed on the trafficable surface of the track during the visual inspection or in the proposed pole location. Although not impacted by the proposal, specific management measures have been outlined for two sites (WPZ-OS4 and WPZ-OS5) to ensure no inadvertent harm occurs whilst ground disturbing works occurs. These measures are to restrict movements and maintenance to the existing track footprint, as shown in **Figure 27** and further outlined in **Section 6.7.3**.

Six of the artefacts within the WPZ Serengeti OS1 artefact scatter could be rediscovered, and were within the proposed footprint of disturbance of Pole 35.

One new Aboriginal site (Dundullimal Reserve Open Site 2 (DR-OS2)) was recorded during the visual inspection. The site is an artefact scatter, comprising two artefacts manufactured from chert and silcrete (See **Table 9**). The co-ordinates for the site are 650640E 6426827N, as shown in **Figure 24**. As this location is limited in extent, adjacent to the existing fenceline (and the cadastral boundary), impact is not necessary to allow construction and the site can be fence off and avoided during construction. The location adjoining a fenceline and the limited extent of the site will similarly prevent disturbance should maintenance or emergency works be required.

Table 9: Dundullimal Reserve Open Site 2 (DR-OS2). View of site and recorded artefacts

	
View northeast across Dundullimal Reserve Open Site 2 (DR-OS2) site location.	Ground level view northeast across Dundullimal Reserve Open Site 2 (DR-OS2) site location.

Chert flake recorded at Dundullimal Reserve Open Site 2 (DR-OS2).

Silcrete flake recorded at Dundullimal Reserve Open Site 2 (DR-OS2)

No areas of PAD were identified due to the general sloping nature of landforms present and previous ground disturbances mentioned above.

Ground disturbing works will be confined to the proposed access track and drill pad locations, four of the five sites which were confirmed to be located within the study area will not be impacted. One site located at proposed structure location 35 (WPZ Serengeti OS1 (formerly WPZ-IF1)) is within the footprint of disturbance for construction.

WPZ Serengeti OS1 (formerly WPZ-IF1) has now been salvaged in its entirety. The artefact scatter salvage occurred in accordance with the Taronga Western Plains Zoo Serengeti Precinct, AHIP issued by Heritage NSW.

Based on the results of the desktop background research, field survey and considering the small extent of proposed impact, it has been concluded that there is a low risk of any intact Aboriginal sites being impacted by the proposed activity. There is also a low risk for in-situ subsurface sites as well, due to a history of significant ground surface disturbance activities occurring throughout the Study area.

Table 10: Visual inspection results of previously recorded sites within the study area

SITE NAME	AHIMS SITE ID#	COORDINATES (GDA 2020 ZONE 55)	RESULTS OF VISUAL INSPECTION	PHOTO
DLGA-OS-02	36-1-0560	651521E 6427449N	No artefacts could be rediscovered during the visual inspection; however, the site remains valid. The site will not be impacted by the proposal.	

WPZ-ST1	36-1-0418	650286E 6426034N	The site was confirmed to be located outside of the study area and will not be impacted by the proposal (**Figure 25**).	
WPZ-OS5	36-1-0417	649895E 6425935N	No artefacts could be rediscovered during the visual inspection; however, the site remains valid. Specific management recommendations regarding the site are outlined in **Section 6.6.3**.	

WPZ-OS4	36-1-0416	649825E 6425977N	No artefacts could be rediscovered during the visual inspection; however, the site remains valid. Specific management recommendations regarding the site are outlined in **Section 6.6.3**.	
WPZ Serengeti OS1 (formerly WPZ IF1)	36-1-0412	649481E 6426027N	Six artefacts were rediscovered during the visual inspection. This site was identified by OzArk (2025b) to be impacted by the proposal. This artefact scatter has subsequently been salvaged utilising– Taronga Western Plains Zoo Serengeti Precinct AHIP, issued by Heritage NSW.	

CR-OS-1	36-1-0523	646734E 6427295N	The site was confirmed to be located outside of the study area and will not be impacted by the proposal (**Figure 25**).	

Figure 24: Proposed location of Structure 35 in relation to Aboriginal site 36-1-0412 (WPZ Serengeti OS1). This entire artefact scatter has now been salvaged (Source: OzArk 2025b)

Figure 25: Corrected location of sites WPZ ST1 and CR-OS-1 (Source: OzArk 2025b)

Figure 26: Location of Dundullimal Reserve Open Site 2 (DR-OS2) in relation to the study area (Source: OzArk 2025b)

6.6.3 ENVIRONMENTAL MITIGATION MEASURES

The following mitigation measures will be employed:

- If any ground disturbance works are required outside of this REF, assessment will need additional consideration prior to works.
- Contractors should be provided with the locations of WPZ-OS4, WPZ-OS5, DLGA-OS-02 and Dundullimal Reserve Open Site 2 (DR-OS2
- No track maintenance may occur outside of the existing footprint of the access track (and as shown by 'no track maintenance' zones shown on **Figure 27,** to avoid inadvertent harm to WPZ-OS4 and WPZ-OS5.
- In the unlikely event that an Aboriginal heritage site or object is located during the construction phase of the project, works will cease in that area and a representative from Essential Energy's Environmental Services will be notified. Works with the potential to disturb the object would not resume until the object had been properly identified, and appropriate action taken
- If human remains are uncovered, works must immediately cease, and the NSW Police department and Essential Energy's Environmental Services team will be notified

6.6.4 CONCLUSION

The proposal is not anticipated to have any impact upon Aboriginal heritage in the area. Given the mitigation measures outlined in this assessment, the overall environmental risk is considered to be low.

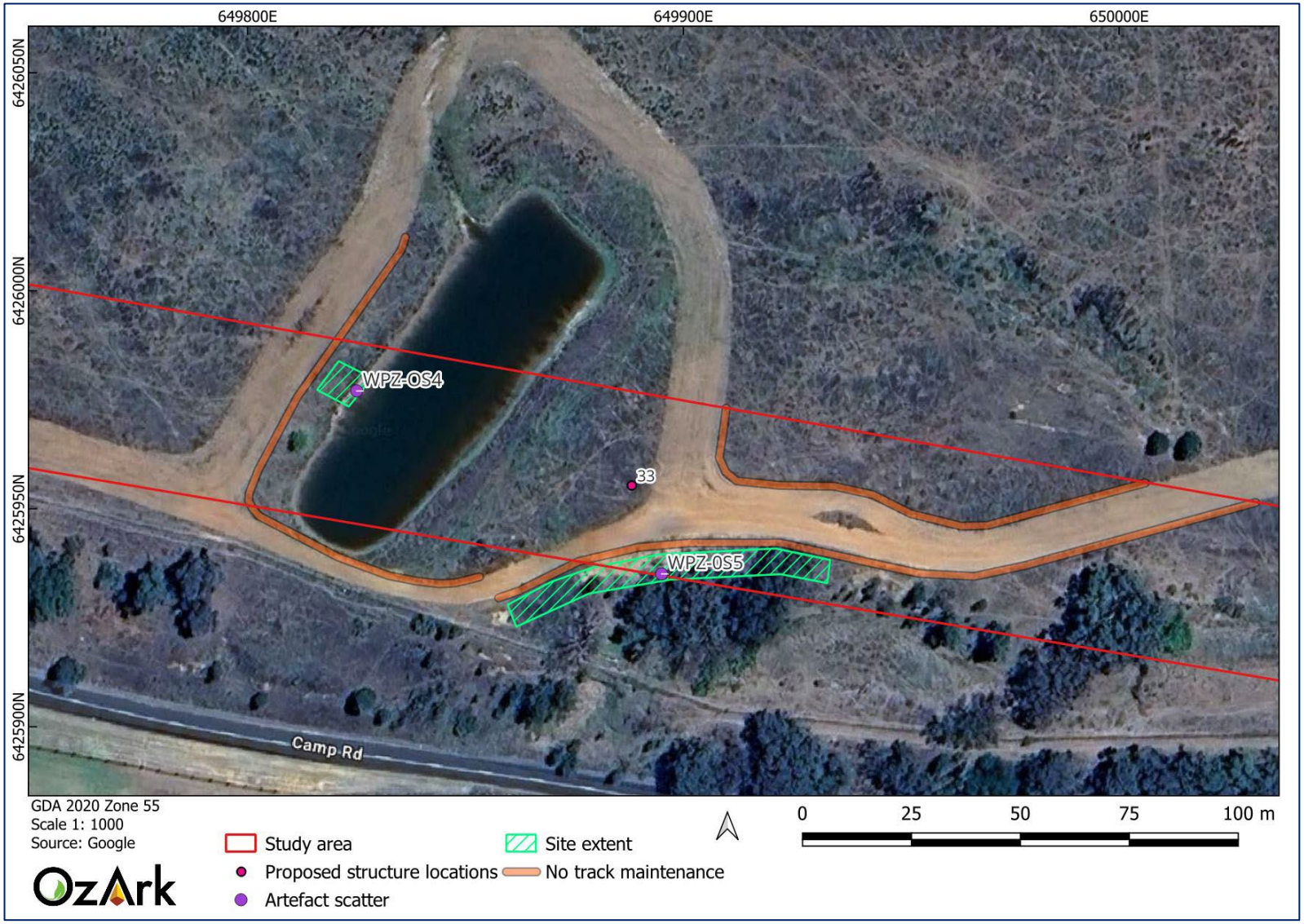

Figure 27: Proposed track maintenance extent for managing WPZ-OS4 and WPZ-OS5 (Source: OzArk 2025b)

6.7 Non-Aboriginal Heritage

6.7.1 EXISTING ENVIRONMENT

Non-Aboriginal heritage refers to any deposit, object or material evidence which relates to the settlement of New South Wales, not being Aboriginal settlement, and is of state or local heritage significance (Section 4 of the *Heritage Act*).

A desktop search of Australia's World Heritage Sites (Commonwealth DCCEEW, 2024c), National Heritage List (Commonwealth DCCEEW, 2024d), NSW State Heritage Inventory (Heritage NSW, 2024), Dubbo Regional LEP 2022 was conducted to determine the extent of non-Aboriginal heritage in the vicinity of the proposal.

A review of the above-mentioned heritage registers indicated no sites of world, or national heritage significance are located within, or intersected by, the boundary of the proposal site. The Dundullimal homestead is listed as a state heritage item (Item 01497 and a local heritage item (Item I186) in the *Dubbo Regional Local Environment Plan 2022* (DR LEP 2022) and will be intersected by the proposal. The locally listed 'Miriam' (I190) (DR LEP 2022) will also be intersected by the proposal. These sites are on either side of the Macquarie River, as shown in **Figure 28**.

6.7.1.1 Dundullimal

According to the State Heritage Inventory (SHI) the Dundullimal is of State significance as the oldest known extant house situated outside the limits of settlement (the 19 counties proclaimed by Governor Darling in 1826). It is the oldest known squatters residence in this part of New South Wales, having been built circa 1842. The original homestead building, in its original form, has survived in a near-unaltered condition since its construction in the 1840s. It has well detailed joinery. Associated with the house is a fine stone stables/barn and a large timber shed which is sympathetic to the earlier buildings.

The item is listed for its historical significance (SHR Criteria a) and aesthetic significance (SHR Criteria c) and noted to be almost completely unaltered from the time of its construction.

6.7.1.2 Miriam

According to information retrieved from the SHI, the locally listed item is a typical turn-of-the century house. Attractive and unpretentious, occupying a prominent, well landscaped hilltop site. Probably one of the survivor's of the 1880's Town Houses. It has been listed due to its aesthetic significance, though noted that is has been altered and there is little left to indicate that it was once a Victorian building. A level of modification has occurred as is evident by cement verandah floor, as well as minor changes such as screen doors, meter box, air conditioners. Materials may have been replaced over the years, so it is difficult to say how true the present building is to the original. The fence is not of the same period.

6.7.2 ASSESSMENT OF IMPACT

6.7.2.1 Dundullimal

At present the existing overhead powerline traverses the curtilage for the access component of the Dundullimal curtilage. The proposal will similarly intersect with an isolated section of the access component of the Dundullimal curtilage, in approximately the same alignment. The proposed span will be in the equivalent location of the current span of the existing powerline, though may be elevated compared to current as the proposed poles are eight metres taller. The three poles northeast of the access and the two poles southwest of the access will be replaced with a single pole along the approximate centreline of the existing alignment. No excavation or construction works are required in the Dundullimal access curtilage beyond the stringing of the overhead conductor. The stringing process will not disturb the ground surface. In the vicinity of proposed alignment and the Dundullimal, access is an additional redundant section of powerline that will be decommissioned, reducing the current number of poles and structures in the location. The altered configuration in the location shows the reduction in poles and structures (See **Figure 29**). . The proposal is unlikely to impact on the significant fabric of the State heritage item, which relates to the extant house, stables, joinery and timber shed. As such, the proposed works are considered permissible utilising a

standard exemption made under section 57(2) for engaging in or carrying out activities/ works otherwise prohibited by section 57(1) of the *Heritage Act 1977*, as published by *Government Gazette Number 262 – Planning and Heritage (Friday, 17 June 2022)*. The proposal is considered an alteration to non-significant fabric of the listed site. A standard exemption record keeping form has been prepared, discussing the site and the 'alteration to non-significant fabric' exemption considered applicable to the proposal, attached as **Appendix D**.

Similarly, the proposal is not likely to have more than a minor or inconsequential impact on the local heritage listing. A statement of heritage impact is not considered warranted.

6.7.2.2 Miriam

At present the existing overhead powerline traverses the curtilage for Miriam. The proposal will remove the two towers present and replace with galvanised steel poles, along the same alignment, though poles will be in different locations to the current towers. Three existing, redundant poles will be decommissioned, thus reducing the number of structures present within the curtilage (See **Figure 30**). As such, the proposal is not likely to have more than a minor or inconsequential impact on the local heritage listing. Rather, a positive impact is likely due to a reduced number of towers/poles on the curtilage.

A site inspection undertaken on 29 and 30 January 2025 by Essential Energy Environmental Senior Specialist did not indicate any evidence of non-Aboriginal heritage items being located within the proposal site and confirmed the proposed work would not impact on the heritage significance of the items identified.

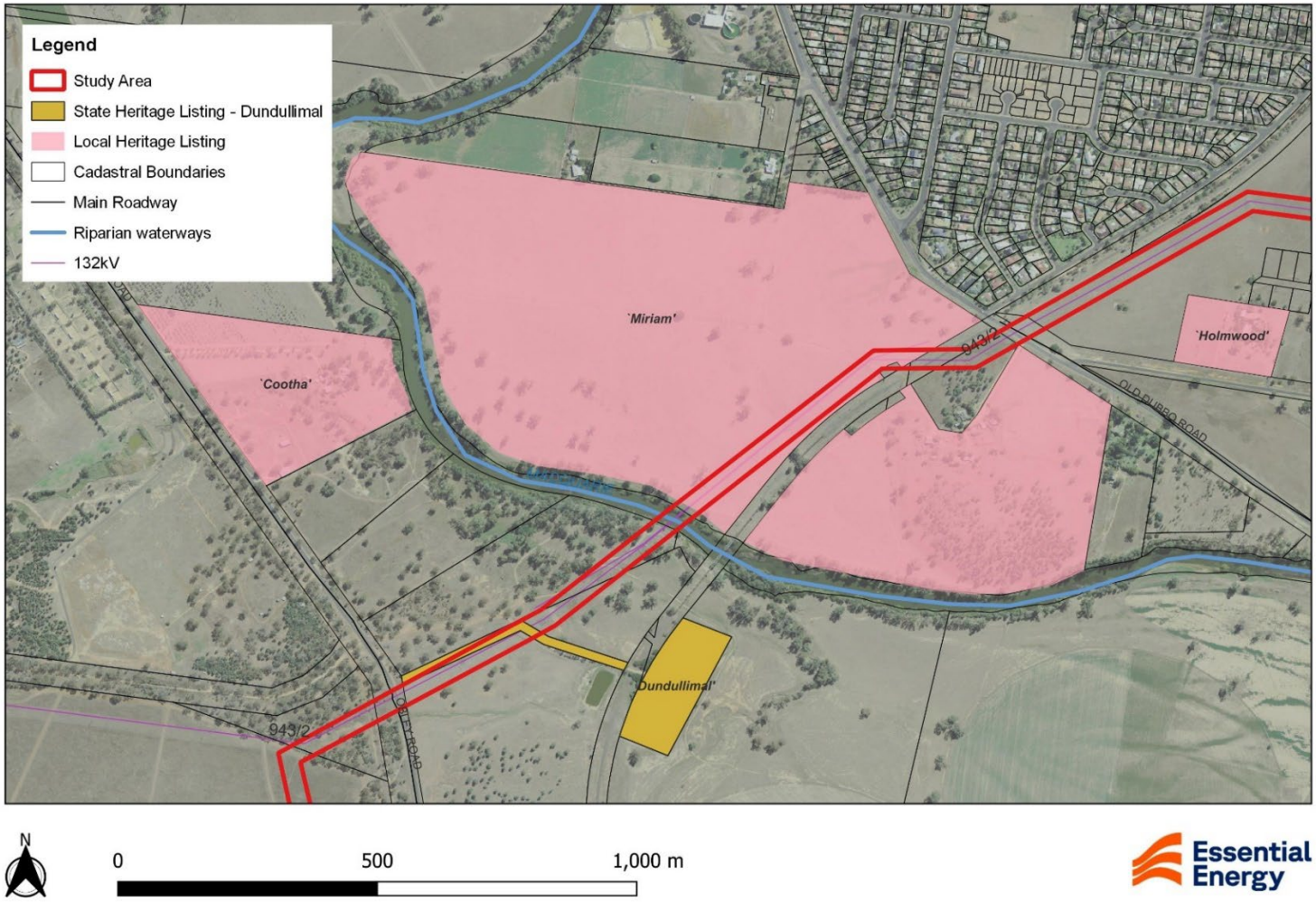

Figure 28: Nearest Non-Aboriginal heritage items relative to the proposal site

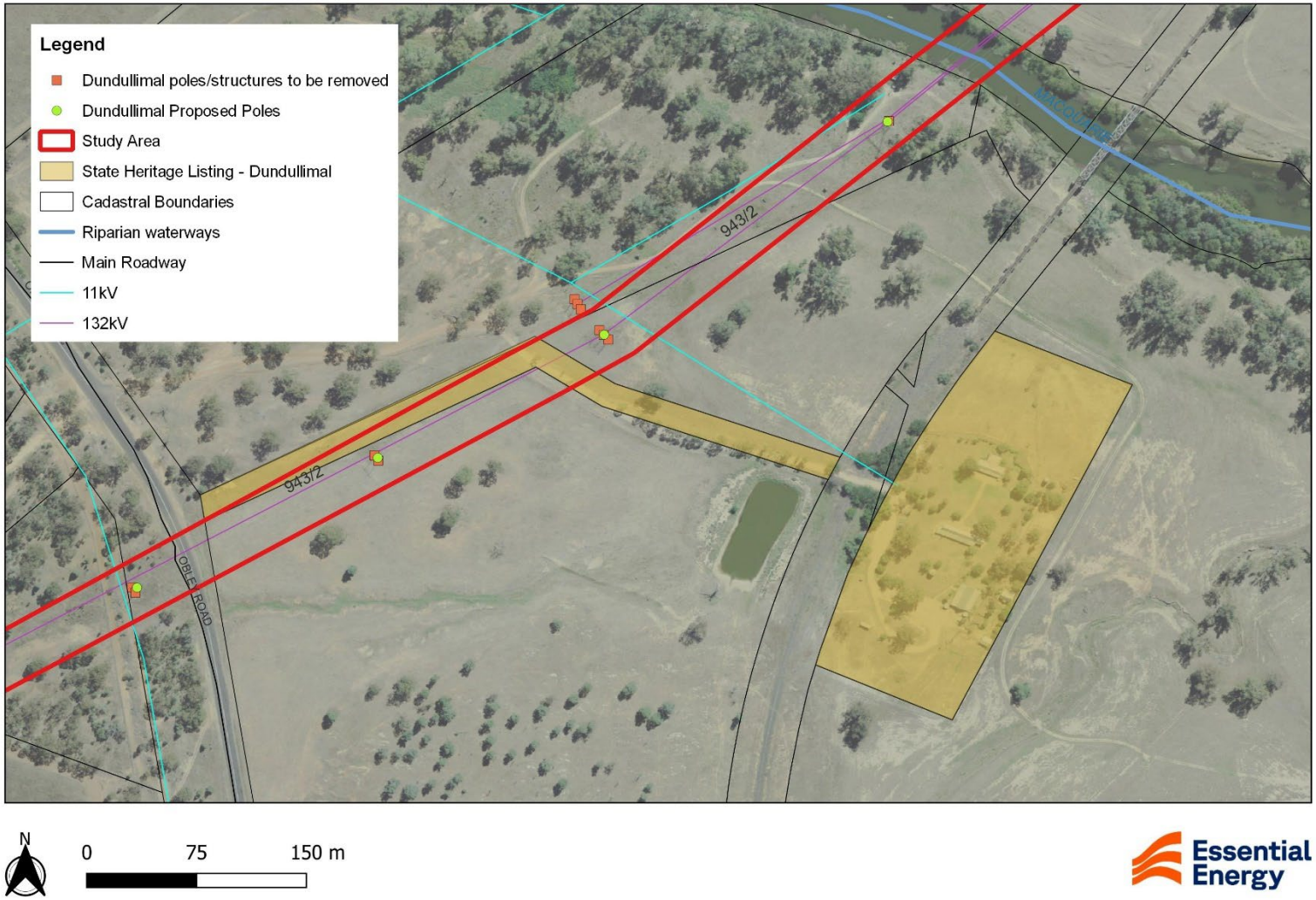

Figure 29: Proposal interaction with Dundullimal - State and locally listed heritage item

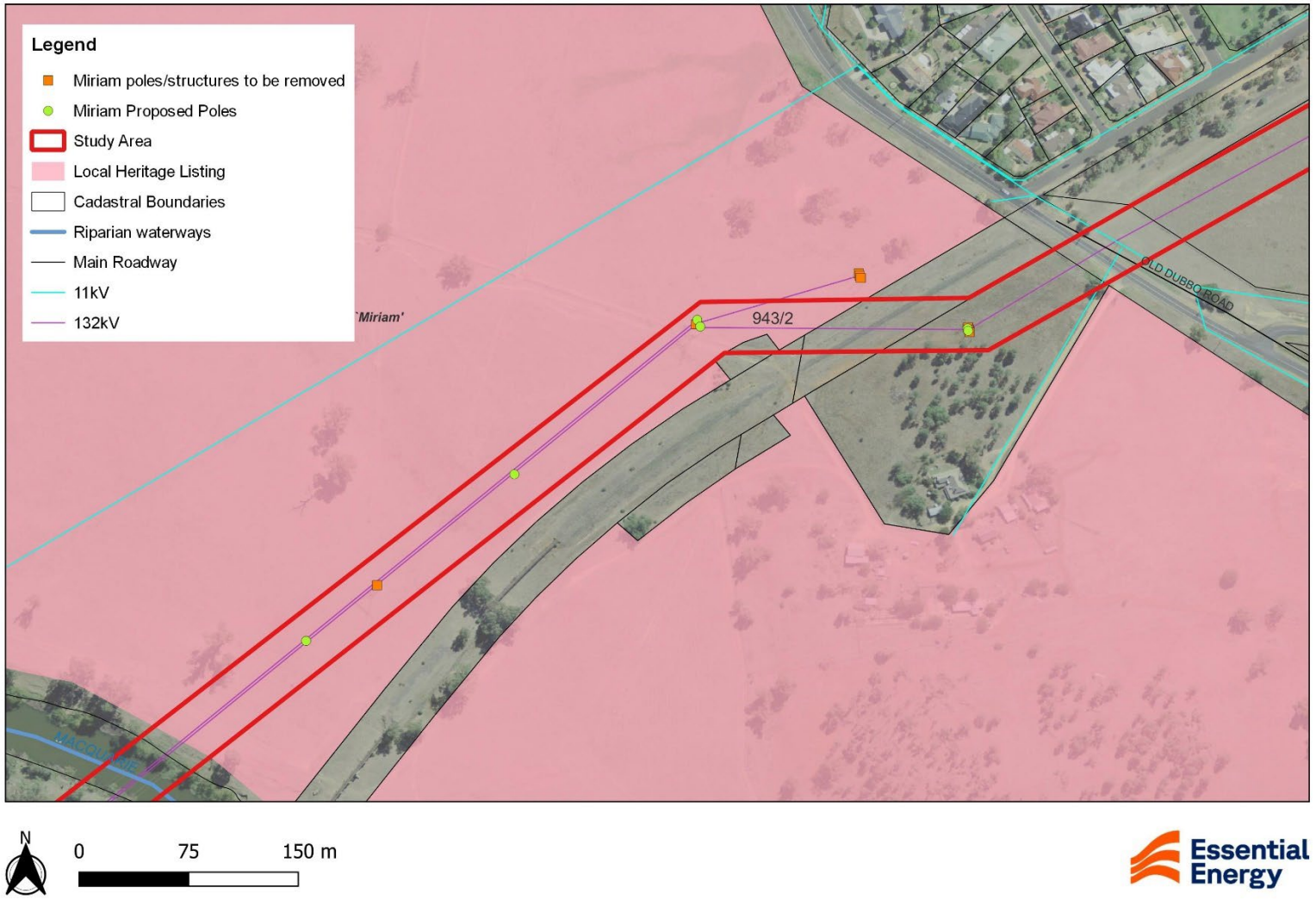

Figure 30: Proposal interaction with Miriam – locally listed heritage item

6.7.3 ENVIRONMENTAL MITIGATION MEASURES

The following mitigation measures would be applied:

- All construction work would be undertaken within the assessed areas of the proposal site only
- In the unlikely event that a previously unknown heritage site or object is located during construction of the proposal, works would cease immediately in that area and a representative from Essential Energy's Environmental Services would be notified. Works with the potential to disturb the object would not resume until the object had been properly identified, and appropriate action taken

6.7.4 CONCLUSION

The proposal is unlikely to have a significant impact upon non-Aboriginal heritage in the area. Given the mitigation measures outlined in this assessment, the overall environmental risk is considered to be low.

6.8 Contamination

6.8.1 EXISTING ENVIRONMENT

6.8.1.1 Desktop Assessment

A search of the NSW EPA 'Contaminated Land – Record of Notices' (EPA, 2024a) and 'List of NSW Contaminated Sites Notified to EPA' (EPA, 2024b) did not identify any contaminated sites within or in the near vicinity of the proposal site. The closest records are located on Cobra Street to the North of the proposal site.

A search of NSW Department of Primary Industries (DPI) Cattle Tick Dip Site Locator did not indicate any tick dip sites within or in the immediate vicinity of the proposal site.

The contaminants that may be encountered potentially include hydrocarbons and heavy metals in road reserves and chemicals associated with wood preservation in the immediate vicinity of existing power poles.

6.8.1.2 Site Inspection

Inspection of the proposal site by Essential Energy's Environmental Senior Specialist, on 28 and 29 January 2025 indicated that the majority of the proposal site has undergone significant previous disturbance in the form of regular cultivation and cropping or broadscale earthworks to facilitate the construction of the South Lakes residential subdivision. Within the proposal site inspected, there was no visual or olfactory evidence of hydrocarbon spills, or visual evidence of asbestos containing materials (ACM).

6.8.2 ASSESSMENT OF IMPACT

There are no known records of contamination at the proposal site. While surface soils and subsoils may have been subjected to periodic pesticide and fungicide use during agricultural activities, it is not expected that significant contamination would have resulted from the application of these chemicals. The lack of olfactory or visual evidence of contamination and understanding of prior land use, indicate that the risk of encountering significant areas of contamination is considered low.

Due to the historic use of some of the site for road reserves, and the majority as a powerline corridor, potential contaminates may include hydrocarbons, heavy metals and chemicals associated with wood preservation, along with insecticides, fungicides and herbicides. However, given the considerable ground disturbance that has taken place through use of the project site, with no known areas of contamination, the risk of encountering significant areas of contamination is considered low, and could be managed on-site during construction.

The potential for offsite sources of contamination to impact the proposal site is considered low as there is limited potential sources of contamination given the use of surrounding land for agricultural purposes.

Spillage of diesel, lubricating oils or other chemicals could occur during refuelling and/or maintenance of construction plant/equipment and vehicles, whilst leakage of fuels or oils could occur from poorly maintained construction plant/equipment and vehicles, during construction work. Any on-site chemical spill or leak could adversely affect the water quality of surrounding waterways. The risk of chemical spills and leaks is expected to be minor, provided that adequate mitigation measures are implemented (see **Section 6.8.3**).

6.8.3 ENVIRONMENTAL MITIGATION MEASURES

The following mitigation measures will be adopted if and where required:

- It is intended to reuse surplus spoil beneficially on site, where possible
- Essential Energy's *CEOP8064 Management of Excavated Material; Guideline for Construction Sites* will be consulted to determine the most appropriate beneficial reuse or disposal method for excavated materials, should it be required
- In the event of encountering any suspected contamination in the work area, it will be separated and contained on site until it can be classified in accordance with the EPA (2014) *Waste Classification Guidelines*, and then disposed of at a facility that is lawfully able to accept the waste
- Control measures will be implemented to manage risks associated with the handling of fuel through using spill trays when undertaking in field re-fuelling
- Sediment and erosion control structures will be established and maintained in accordance with The Blue Book to minimise potential impacts on receiving watercourses.

6.8.4 CONCLUSION

The proposal will have very low likelihood of interaction with contaminated soils, the mitigation measures outlined in this assessment, the overall environmental risk is considered to be low.

6.9 Electric and Magnetic Fields

6.9.1 EXISTING ENVIRONMENT

6.9.1.1 Introduction

Electric and Magnetic Fields (EMF) are part of the natural environment and are present in the Earth's core and the atmosphere. EMF is also produced wherever electricity or electrical equipment are in use. Powerlines, electrical wiring, household appliances and electrical equipment all produce EMF.

The EMF associated with electrical equipment, whilst interrelated, are not dependent on each other and can exist independently. The electric field is associated with the voltage of the equipment and the magnetic field is associated with the current (amperage). In combination, these fields cause energy to be transferred along electric wires.

An electric field is a region where electric charges experience an invisible force. The strength of this force is related to the voltage, or pressure, which forces electricity along wires. Electric fields are strongest closest to their source, and their strength diminishes rapidly with distance from the source, in much the same way as the warmth of a fire decreases with distance. Many common materials – such as brickwork or metal – block electric fields, so they are readily shielded and, for all practical purposes, do not penetrate buildings. They are also shielded by human skin, such that the electric field inside a human body will be at least 100,000 times less than the external field. (WHO, 2007)) Being related to voltage, the electric fields associated with HV aerial lines and electrical substations remain relatively constant over time, except where the operating voltage changes.

A magnetic field is a region where magnetic materials experience an invisible force produced by the flow of electricity (known as electric current and measured in Amperes). The strength of a magnetic field depends on the size of the current and decreases as distance from the source increases. The magnetic field strength

resulting from an electrical installation varies continually with time and is affected by a number of factors including:

- The total electric load
- The size and nature of the equipment
- The design of the equipment
- The layout and electrical configuration of the equipment and its interaction with other equipment

While electric fields are blocked by common materials, this is not the case with magnetic fields. This is why locating equipment in enclosures or underground will eliminate any external electric field but not the magnetic field.

Alternating electric and magnetic fields are produced by any electric wiring or equipment carrying alternating current (AC). This current does not flow steadily in one direction but oscillates backwards and forwards at a frequency1[1] of 50Hz and hence the fields produced by AC systems oscillate at the same frequency. This frequency falls into a range referred to as extremely low frequency (ELF), so the electric and magnetic fields are referred to as ELF fields.

6.9.1.2 Electromagnetic Radiation

It is not uncommon for the EMF associated with electrical equipment to be confused with electromagnetic radiation (EMR). The fact that, in many jurisdictions, agencies which regulate the various forms of EMR are also involved in the setting of guidelines/standards for EMF tends to add to this confusion.

EMR is a term used to describe the movement of electromagnetic energy through the propagation of a wave. This wave, which moves at the speed of light in a vacuum, is composed of electric and magnetic waves which oscillate (vibrate) in phase with, and perpendicular to, each other. This is in contrast to EMF, where the electric and magnetic components are essentially independent of one another.

EMR is classified into several types according to the frequency of its wave; these types include (in order of increasing frequency): radio waves, microwaves, terahertz radiation, infra-red radiation, visible light[2], ultraviolet radiation, X-rays, and gamma rays. Whereas EMR causes energy to be radiated outwards from its source e.g., light from the sun or radio-frequency signals from a television transmitter, EMFs cause energy to be transferred along electric wires.

In the context of the EMF/health issue, the distinction between EMF and EMR is addressed by the New Zealand Ministry of Health in its public information booklet "Electric and Magnetic Fields and Your Health" (NZ Ministry of Health, 2009) as follows:

> *"The electric and magnetic fields around power lines and electrical appliances are not a form of radiation. The word "radiation" is a very broad term but generally refers to the propagation of energy away from some source. For example, light is a form of radiation, emitted by the sun and light bulbs. ELF fields do not travel away from their source but are fixed in place around it. They do not propagate energy away from their source. They bear no relationship, in their physical nature or effects on the body, to true forms of radiation such as x-rays or microwaves."*

6.9.1.3 Overview of EMF Health Issue

Research into EMFs and health is a complex area involving many scientific disciplines – from biology, physics and chemistry to medicine, biophysics, and epidemiology. Many of the health issues of interest to researchers are quite rare. In this context, it is well accepted by scientists that no study considered in isolation will provide a meaningful answer to the question of whether or not EMFs can contribute to adverse health effects. In order to make an informed conclusion from all of the research, it is necessary to consider

[1] Frequency is a measure of the number of times per second a wave oscillates or vibrates. The most common unit of measurement of frequency is the Hertz (Hz) where 1 Hz is equal to 1 cycle per second.

[2] Visible light is a group (spectrum) of frequencies which can be sensed by the eyes of humans and various other creatures.

the science in its totality. Over the years, governments and regulatory agencies around the world have commissioned independent scientific review panels to provide such overall assessments.

Extremely Low Frequency (ELF) Fields

The possibility of adverse health effects due to the EMFs associated with extremely low frequency electrical equipment has been the subject of extensive research throughout the world. To date adverse health effects have not been established.

While EMFs involve both electric and magnetic components, electric fields are relatively constant over time, are readily shielded and, in the health context, are generally no longer associated with the same level of interest as magnetic fields. Nevertheless, high electric field strengths, such as those associated with high voltage equipment in major substations or powerlines can approach a level at which "nuisance shocks" can occur and this phenomenon needs to be managed. Magnetic fields are not readily shielded, are more ubiquitous and remain the subject of some debate. Accordingly, much of the remainder of this section is directed towards magnetic fields.

The most recent scientific reviews by authoritative bodies are reassuring for most potential health issues. However, statistical associations[3] between prolonged exposure to elevated magnetic fields and childhood leukaemia have persisted. This led the International Agency for Research on Cancer (IARC) [World Health Organisation (WHO) IARC, 2001] in 2002 to classify magnetic fields as a "possible carcinogen"[4]

The fact that, despite over 30 years of laboratory research, no mechanism for an effect has been established, lends weight to the possibility that the observed statistical associations reflect some factor other than a causal relationship. This point is made in the 2001 report of the UK National Radiological Protection Board's (NRPB) Advisory Group, chaired by eminent epidemiologist, the late Sir Richard Doll (United Kingdom National Radiological Protection Board, 2001)

> *"In the absence of clear evidence of a carcinogenic effect in adults, or of a plausible explanation from experiments on animals or isolated cells, the evidence is currently not strong enough to justify a firm conclusion that such fields cause leukaemia in children" (page 164)*

6.9.1.4 Health Guidelines for Extremely Low Frequency Electric and Magnetic Fields

The WHO recognises two international EMF/Health guidelines:

- *Guidelines for Limiting Exposure to Time-varying Electric and Magnetic Fields (1Hz to 100kHz)* produced by the International Commission on Non-Ionising Radiation Protection (ICNIRP, 2010)
- *Standard C95.1,* produced by the International Committee on Electromagnetic Safety, Institute of Electrical and Electronics Engineers (IEEE) in the USA.

In July 2015, the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) officially adopted the more conservative of the above two, the ICNIRP 2010 Guidelines, in full, stating:

> *"The ICNIRP ELF guidelines are consistent with ARPANSA's understanding of the scientific basis for the protection of the general public (including the foetus) and workers from exposure to ELF EMF."* (ARPANSA, 2015)

In line with the regulator's advice, Essential Energy has applied the current international ICNIRP guideline reference levels to this assessment.

The reference levels for both electric and magnetic fields contained in the current ICNIRP guidelines are summarised in **Table 11**.

[3] It should be noted that a statistical association does not necessarily reflect a cause-and-effect relationship.

[4] IARC publishes authoritative independent assessment by international experts of the carcinogenic risks posed to humans by a variety of agents, mixtures, and exposures.

Table 11: Health Guideline Reference Levels

PARAMETER	ICNIRP 2010 REFERENCE LEVELS
Electric Fields – General Public	5 kV/m (kilovolts per metre)
Electric Fields – Occupational	10 kV/m
Magnetic Fields – General Public	2,000 milligauss (mG)
Magnetic Fields – Occupational	10,000 mG

In applying the guidelines, it is to be noted that, unlike earlier versions, the various limits are now independent of duration of exposure.

It is also important to recognise that the numerical limits, e.g., 2,000 mG, are based on established health effects. In ICNIRP's fact sheet on the guidelines (ICNIRP, 2010), it notes that:

> *"It is the view of ICNIRP that the currently existing scientific evidence that prolonged exposure to low frequency magnetic fields is causally related with an increased risk of childhood leukaemia is too weak to form the basis for exposure guidelines. Thus, the perception of surface electric charge, the direct stimulation of nerve and muscle tissue and the induction of retinal phosphenes are the only well-established adverse effects and serve as the basis for guidance."*

Being based on established biological effects (which occur at field levels much higher than those normally encountered in the vicinity of electrical equipment), the (numerical) exposure limits in the guidelines and standards cannot be said to define safe limits for possible health effects, should these exist, from magnetic fields at levels normally encountered in the vicinity of electrical equipment.

It is in this context that precautionary measures for ELF magnetic fields such as "Prudent Avoidance" have arisen.

6.9.1.5 Prudent Avoidance for Extremely Low Frequency Magnetic Fields

Regarding the potential health effects from ELF magnetic fields, while compliance with the relevant guideline is important in protecting people from established health effects, it does not necessarily address possible health effects, should they exist, from fields at levels normally encountered in the vicinity of electrical equipment. The possibility of such effects has been comprehensively studied over several decades worldwide but, to this day, there is no clear understanding of how ELF electric or magnetic fields at low levels could pose a threat to human health.

Since the late 1980s, many reviews of the scientific literature have been published by authoritative bodies. There have also been several inquiries such as those by Sir Harry Gibbs in NSW (Gibbs, 1991) and Professor Hedley Peach in Victoria (Peach, 1992). These reviews and inquiries have consistently found that:

- Adverse health effects have not been established
- The possibility cannot be ruled out
- If there is a risk, it is more likely to be associated with the magnetic field than the electric field

Both Sir Harry Gibbs and Professor Peach recommended a policy of prudence or prudent avoidance, which Sir Harry Gibbs described in the following terms:

> *"... [doing] whatever can be done without undue inconvenience and at modest expense to avert the possible risk ..."*

In 1999, the United States of America (USA) National Institute of Environmental and Health Sciences (NIEHS) (1999) found:

> *"In summary, the NIEHS believes that there is weak evidence for possible health effects from ELFEMF exposures, and until stronger evidence changes this opinion, inexpensive and safe reductions in exposure should be encouraged." (Page 38)*

The practice of 'prudent avoidance' has been adopted by the (Australian) Energy Networks Association (ENA) and most Australian power utilities, including Essential Energy.

The World Health Organisation has also addressed the notion of prudence or precaution on several occasions, including in its 2007 publication Extremely low frequency fields. Environmental Health Criteria, Vol. 238 (WHO, 2007), which states:

> *"...the use of precautionary approaches is warranted. However, it is not recommended that the limit values in exposure guidelines be reduced to some arbitrary level in the name of precaution. Such practice undermines the scientific foundation on which the limits are based and is likely to be an expensive and not necessarily effective way of providing protection."*

It also states:

> *"Provided that the health, social and economic benefits of electric power are not compromised, implementing very low-cost precautionary procedures to reduce exposure is reasonable and warranted."*

Given the inconclusive nature of the science, it is considered that a prudent approach continues to be the most appropriate response in the circumstances. Under this approach, subject to modest cost and reasonable convenience, power utilities and transport authorities should design their facilities to reduce the intensity of the fields they generate, and locate them to minimise the fields that people, especially children, encounter over prolonged periods. While these measures are prudent, it cannot be said that they are essential or that they will result in any benefit.

In the Australian context, ENA's position, as adopted in their EMF Management Handbook (Energy Networks Association, 2016), states:

> *"Prudent avoidance does not mean there is an established risk that needs to be avoided. It means that if there is uncertainty, then there are certain types of avoidance (no cost / very low-cost measures) that could be prudent."*

It also states:

> *"Both prudent avoidance and the precautionary approach involve implementing no cost and very low cost measures that reduce exposure while not unduly compromising other issues."*

6.9.2 ASSESSMENT OF IMPACT

The location of the proposal has been selected on the basis of replacing the existing 132kV overhead powerline, excluding the realignment proposed at TWPZ. Therefore, the proposed development (outside of the realignment at TWPZ) will not introduce a significant new source of EMF into a location that previously had low sources of EMF.

The nearest sensitive receivers are the residences along Argyle Avenue, with residences on the northern (seven residences) and southern (six residences) side of the roadway being approximately 16m from the powerline conductor. Through South lakes, such as residences on Fountain Circuit, additional sensitive receivers are between 16m and 20m from the powerline conductor. Throughout South Lakes the proposal will be within the existing cleared corridor. These sensitive receivers are shown in **Figure 3** to **Figure 8**. The increased height of the poles will in some cases increase the separation distances from these sensitive receivers from the current powerline arrangement. As stated above, the project within the proximity of these closest sensitive receivers will not introduce a significant new source of EMF into a location that previously had low sources of EMF.

At TWPZ the realignment will relocate the powerline towards Camp Road. Sufficient distance remains such that nearby residences are still on the opposite side of Camp Road such that sufficient buffer distance is provided and it is unlikely that the powerline will expose these sensitive receivers to EMF.

The magnetic field strength resulting from an electrical installation varies continually with time and is influenced by a number of factors, including:

- The total electrical load at any given point in time
- The size and nature of equipment
- Design of equipment
- The layout and electrical configuration of the equipment and its interaction with other equipment.

According to Connel Wagner 2008, EMF is highest when directly under the centreline of the powerline, which quickly diminishes with distance from the centreline. EMF modelling for a proposed powerline in Mullumbimby indicated levels of below 20mG (2μT) beneath the powerline, which reduced to less than 5mG (0.5μT) at 15m and 2mG (0.2μT) at 25m. Essential Energy completed EMF modelling on a proposed dual circuit high capacity 132kV powerline near Queanbeyan, NSW. Under worst case scenario conditions, for example, highest proposed feeder current rating, highest proposed feeder temperature and opposing phase orientation the highest magnetic field level recorded along the alignment was 33mG or 3.3μT. At 10m from the powerline magnetic field levels reduced to 11mG or 1.1 μT.

To put the above modelling in perspective, reference is made to Table 3.1 from the Energy Networks Association (ENA) *EMF Management Handbook*, January 2016, where magnetic field strength from typical household electrical appliances is provided and is adapted in **Table 12**.

Table 12: Magnetic Field Measurement Ranges from Typical Household Appliances

Magnetic field Source	Range of Measurement in μT
electric stove	0.2-3
refrigerator	0.2-0.5
electric kettle	0.2-1
toaster	0.2-1
television	0.02-0.2
personal computer	0.2-2
electric blanket	0.5-3
hair dryer	1-7
pedestal fan	0.02-0.2

Potential EMF created from the powerline would be in largely similar to the EMF levels that currently exist along the alignment. Historical modelling indicates that powerline at this voltage are significantly below adopted health reference levels and similar to typical household appliances

The proposal incorporates prudent EMF avoidance measures into the standard designs for powerlines. The design of the proposal has minimised the magnetic field as far as technically reasonable and within the context of "...[doing] whatever can be done without undue inconvenience and at modest expense to avert the possible risk [to health]", consistent with Gibbs Inquiry (1991).

6.9.3 CONCLUSION

The proposal will comply with all relevant national and international guidelines. The resulting magnetic fields from the proposal site are within the range of fields expected from electricity infrastructure in the area. The overall environmental risk is considered to be low.

6.10 Visual and Aesthetics

6.10.1 APPROACH

The following visual amenity assessment approach was applied to evaluate the potential visual impacts associated with the project. It is based on a professionally recognised system developed by the United States Forest Service (1974), and similar methods adopted by the Forestry Commission of Tasmania (1983) and the NSW Department of Planning (1980).

The approach used in this assessment is as follows:

- The existing visual environment of the site is described (in terms of landscape character, scenic quality, visual and landscape sensitivity and major viewpoints)
- A brief description is made of the proposed visual changes
- An impact assessment is then undertaken, assessing both the changes to the site itself, and any impacts to views from surrounding areas

The visual impact of the proposed activity has been determined though the interaction of visual modification and visual sensitivity. These are discussed in more detail in the following sections. The 'visual impact matrix', illustrated in **Table 13**, is used to determine the potential visual impact of the proposed activity by combining a ranking of high, medium and low for both visual modification and visual sensitivity.

Table 13: Visual Impact Matrix

		VISUAL SENSITIVITY		
		High	**Medium**	**Low**
VISUAL MODIFICATION	**High**	High Impact	High Impact	Moderate Impact
	Medium	High Impact	Moderate Impact	Minor Impact
	Low	Moderate Impact	Minor Impact	Minor Impact

6.10.1.1 Visual modification

Visual modification expresses the visual interaction between the proposal and the existing visual environment. It is the visual contrast between pre and post-development, and is a combination of the appearance of the development (size, form, colour, texture), absorptive capacity of the landscape setting, and the distance from which the development is viewed. Visual modification is expressed here as high, medium or low.

High visual modification

A high degree of visual modification would result if the proposed developments are a major element and contrast strongly with the existing landscape. The contrast is likely to occur if there is little or no natural screening or integration created by vegetation, or if there is an open plain. For example, powerlines passing over vegetated ridge tops also usually represent a high visual modification, particularly if it is a new powerline passing through otherwise undisturbed vegetated terrain and the viewer is parallel to the line.

Medium visual modification

A medium degree of visual modification would result if the proposed developments are visible and contrast with the landscape but are integrated to some degree. This would happen if the surrounding vegetation and/or topography provide some measure of visual screening, backgrounding or other form of visual integration of the development with its setting. An example of a medium visual modification is an urbanised streetscape with existing powerlines and/or established trees on the roadside.

Low visual modification

A low degree of visual modification occurs if there is minimal visual contrast and a high level of integration of size, form, colour or texture between the development and the environment. This would occur if there is a high degree of visual integration of the development into the existing landscape or a low level of visual modification of the existing visual setting is achieved. A low visual modification may reflect a situation where the development may be noticeable, but it does not markedly contrast with the existing landscape, as is the case with upgrading existing powerlines.

Throughout the study area, the degree of visual modification is highly dependent on the distance the viewer is from a new development. As the distance from the new development to the viewing location increases, the development becomes less prominent, and therefore its visual modification is less.

Visual modification is also affected by the angle at which a new development is viewed. In general, the visual modification when viewing the new development at right angles is less than when viewing in parallel, depending on the distance from the new development.

6.10.1.2 Visual Sensitivity

Visual sensitivity is a measure of how critically a change to the existing landscape would be viewed from various viewpoints. This is dependent on a number of viewer characteristics, such as the number of viewers affected, land use, existing vegetation patterns, distance of the development from viewers, and the visibility of the development from critical viewing locations.

High visual sensitivity

Occupiers of residential properties with long viewing periods adjacent or within close proximity to the proposal. High sensitive areas can also apply to users of outdoor recreational areas, including reserved land or nature recreation such as walking, swimming, fishing or trail riding. This is particularly the case where their attention is focussed, in part, on the landscape and amenity that is being affected by the proposed development.

Medium visual sensitivity

Medium sensitivity would apply to circumstances in which viewers have intermittent exposure, such as outdoor workers and outdoor recreation users, however, for the recreational user, attention is focussed predominantly on the activity they are viewing, such as a sporting event, rather than the proposed development. In addition, medium sensitivity would also apply to occupiers of residential properties with long viewing periods at a distance from or partially screened from the proposed development or project area.

Low visual sensitivity

Low sensitive viewers include predominantly those groups that have a short term view of the proposed development. This would be limited to mainly road users, trains or transport routes that are passing through or adjacent to the study area. Low sensitivity would also apply where viewers are adequately screened from the proposed development so that their viewing periods are limited to short periods.

6.10.2 EXISTING VISUAL ENVIRONMENT (LANDSCAPE DESCRIPTION)

The proposal site is situated on a predominantly cleared and highly disturbed landscape. The majority of the proposal site is within an existing 132kV overhead powerline corridor, excluding an area of re-alignment within TWPZ.

Current land use and historic disturbance in the form of agricultural activities including cropping and grazing has occurred on the rural zoned larger lots in the western-most portion of the line. Individual paddock trees and some larger stands of vegetation are present adjoining the existing powerline easement. The topography is characterised by low rolling hills. Sparse rural residences are within this western portion of the project.

The TWPZ forms the southern most portion of the line and has been subject to clearing and is understood to have previously been used as a Department of Defence site. Within Lot 3 DP721260 and Lot 192, Lot 196, and Lot 207, DP 753233 of the TWPZ, a new alignment will be required. The aforementioned realignment will facilitate the development of the TWPZ 'Serengeti' exhibit, which includes access tracks through to eco-cabin accommodation. Construction of this recently approved development commenced in early/mid 2025. The topography within the TWPZ land increases in elevation towards the Newell Highway.

The northeastern portion of the proposal is within the residential subdivision of South Lakes between the Dubbo South ZS and Old Dubbo Road. The visual landscape within the subdivision includes limited upper storey vegetation due to the high density of residential dwellings, though landscaped vegetation is present in recreational spaces that accommodate the powerline easement and stormwater management infrastructure. The topography through the residential estate of south lakes is mostly flat.

The nearest sensitive receivers are the residences along Argyle Avenue, with residences on the northern (seven residences) and southern (six residences) side of the roadway being approximately 16m from the powerline. Through South lakes, such as residences on Fountain Circuit, additional sensitive receivers are between 16m and 20m from the powerline. Throughout South Lakes the proposal will be within the existing cleared corridor. These sensitive receivers are shown in **Figure 3** to **Figure 8**.

6.10.3 ASSESSMENT OF IMPACT

6.10.3.1 Visual modification

The proposal will require the installation of 20-30m tall galvanised steel poles, installation of conductor and communications cabling, mostly within the existing cleared corridor of the current overhead 132kV powerline, excluding the aforementioned realignment through TWPZ. There will be a high degree of integration as the infrastructure to be installed will be within the same alignment and cleared corridor. Some additional clearing has been considered in the ecological assessment, and will potentially increase exposure of the powerline infrastructure to a limited number of receivers.

The poles to be installed will be galvanised steel, with the potential to cause glare during certain times of day, at certain viewing locations. Glare will reduce with weathering of the poles over time.

The realignment through the TWPZ land will be partially screened by existing vegetation (planted in the west and regrowth in the east near Obley Road) along Camp Road.

The development may be noticeable, but as an existing powerline exists along the alignment, the proposal will not markedly contrast with the existing landscape, as this will involve upgrading existing powerlines. Long term visual modification is therefore assessed as low, due to the minor change from the existing visual setting due to the proposal predominately replacing the existing 132kV overhead infrastructure.

6.10.3.2 Visual sensitivity

The nearest sensitive receivers are the residences along Argyle Avenue, with residences on the northern (seven residences) and southern (six residences) side of the roadway being approximately 16m from the powerline. Through South lakes, such as residences on Fountain Circuit, additional sensitive receivers are between 16m and 20m from the powerline. Throughout South Lakes the proposal will be within the existing cleared corridor. These sensitive receivers are shown in **Figure 3** to **Figure 8**.

These nearest sensitive receivers along Argyle Avenue have direct line of sight of the proposal site from their façades, with street trees along road verges and in the central median strip of Argyle Avenue providing partial screening.

Many residences within the South Lakes residential estate, beyond those on Argyle Avenue also have direct line of site from their façades, or from their backyards, dependant on their location. The pole replacements are predominately within very similar locations, with the exception of an existing pole removal to the north of fountain circuit, and some differing pole locations to current along Paterson Circuit, where dual poles will be replaced with single poles. Available vegetation screening decreases between Argyle Avenue and Old Dubbo Road due to less mature street tree plantings, and less landscaping within the infrastructure corridor.

Residents within the South Lakes residential area, either adjacent or within close proximity will experience long viewing periods of the proposed development. Furthermore, extended views would be expected to occur when commuting throughout the estate. These receivers are considered to have a high visual sensitivity.

The Dubbo Observatory is located on Camp Road. The realignment on the TWPZ land will bring the aboveground infrastructure closer to the telescope. The proposal will not generate light at night, and is considered unlikely to restrict the telescopes field of view.

Receivers on lands within the more rural environs of the proposal site, west of the TWPZ, are considered as medium sensitivity due to:

- Integration through being located within the footprint of the current corridor and replacing the existing infrastructure
- Distance from powerline
- Due to the vegetative screening provided by vegetation in most circumstances

6.10.4 SUMMARY OF POTENTIAL IMPACTS

Visual modification has been assessed as low. Visual sensitivity for the closest residential receivers within South Lakes subdivision, is considered to be high (noting a high degree of integration) and medium for receivers in the more rural areas of the proposal. In accordance with the visual impact matrix, the proposed activity is likely to result in a moderate visual impact for the closest receivers.

Whilst the proposal has been determined to have a moderate visual impact in accordance with the visual impact matrix, powerlines by their nature are considered to be low impact due to their size, scope and intensity. This is because power poles, although high in height, are spaced sporadically along an alignment. Powerlines, and in particular, the poles, do not block significant amounts of sunlight, and generally do not significantly impede views, nor do they impact upon privacy. The poles will be galvanised which in certain conditions have the potential to cause glare. The galvanised poles will fade with exposure to weather, which typically would be expected between 12-18 months.

Furthermore, powerlines are an essential service provision that benefits the broader Australian population and the economy, including the transition to renewables. As such, powerlines, like other utilities, are generally permissible within all planning zones and are a reasonable and necessary development.

6.11 Waste

6.11.1 ASSESSMENT OF IMPACT

Waste material generated from the proposal would generally comprise the following:

- General construction waste including but not limited to cardboard, paper, wood, mesh, steel, concrete, and other damaged or excess construction materials and materials from the demolition of the existing powerline
- General refuse generated by personnel including putrescible wastes, food scraps, packaging and other domestic wastes
- Surplus excavated soil material from pole footings and pole butts from any timber poles removed
- Vegetation debris from clearing works associated with tree felling and site preparations.

Any surplus soil that cannot be reused on site will be assessed against the virgin excavated natural material (VENM) criteria, any relevant waste exemption and order, or classified and disposed of at a facility lawfully able to accept the waste.

The proposed activity is not expected to result in the creation of excessive materials for disposal, with opportunities to utilise surplus material on site or through waste reclamation and exemption orders.

Operation of the proposal is not expected to generate any substantial quantities of waste material.

6.11.2 ENVIRONMENTAL MITIGATION MEASURES

The following mitigation measures will be employed to minimise and manage impacts to waste:

- All wastes that are generated as a result of the project that require offsite disposal will be considered in accordance with the Waste Classification Guidelines (EPA, 2014)
- All waste material will be reused, recycled, or disposed of at a facility lawfully capable of receiving the waste.

6.11.3 CONCLUSION

The proposal is not anticipated to generate a large quantity of waste. Given the mitigation measures outlined in this assessment, the overall environmental risk is considered to be low.

6.12 Bushfire

6.12.1 EXISTING ENVIRONMENT

The proposal site is predominately mapped as vegetation category three (3) by the NSW Bushfire Prone Land Mapping, where the proposal exits the residential estate. This is due to the lack of upper storey vegetation on the cultivated land that occurs over the majority of the alignment. To the east of the Newell Highway to Buddens Lane, patches of category 1 land is present. Two further patches are present at the lot adjoining the northern most end of Rifle Range Road and the lot adjoining the FGSF. **Figure 31** demonstrates the bushfire prone land mapping for the proposal site.

According to the NSW Rural Fire Service – Guide for Bush Fire Prone Land Mapping (November 2015), vegetation category 3 is considered to be medium bush fire risk vegetation, being higher than category 2, but lower than category 1. Vegetation mapped as category 3 includes grasslands, which is the predominant vegetation cover across the powerline alignment. Category 1 land is the highest risk for bushfire and comprises forests and woodlands where present within the proposal footprint.

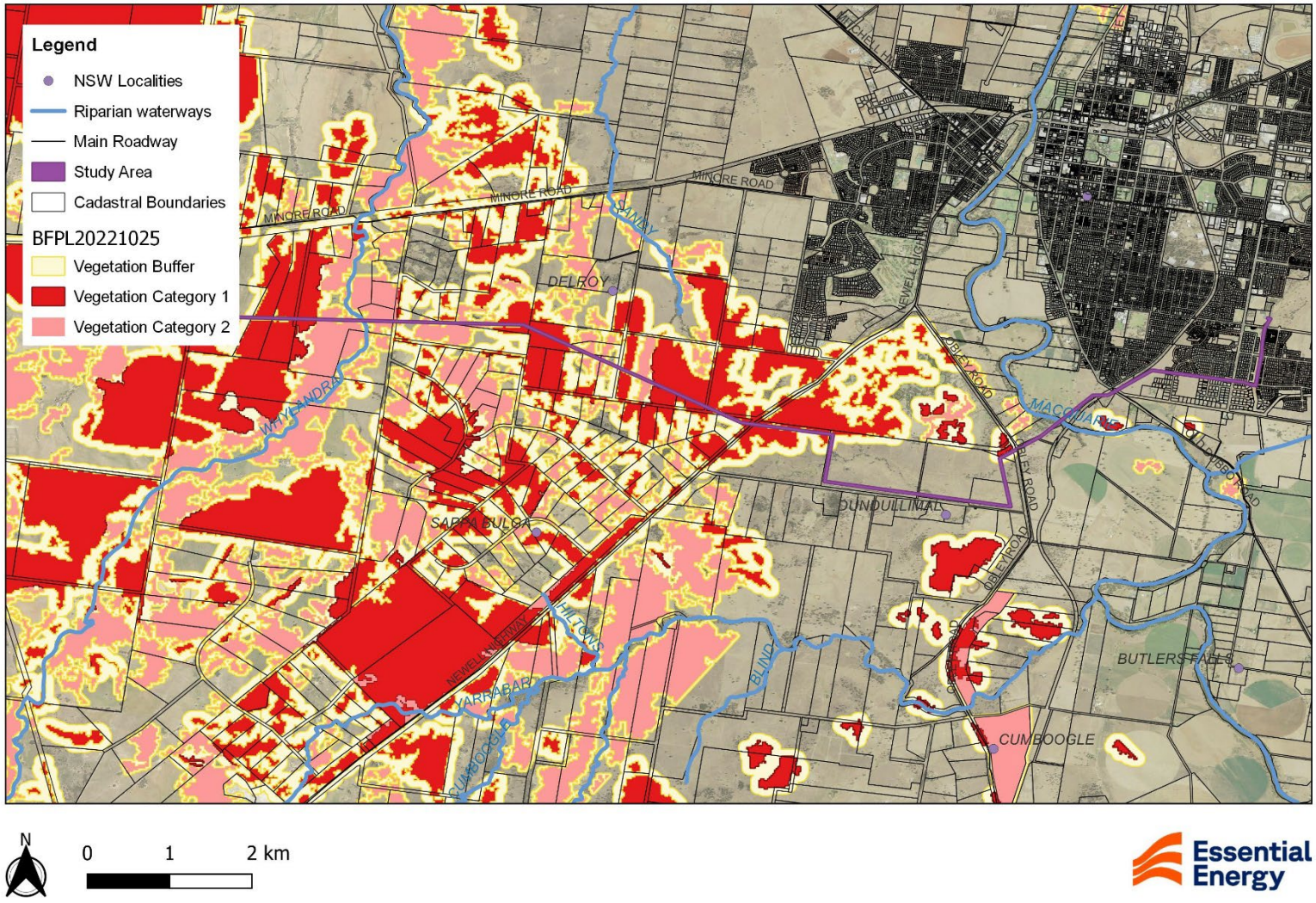

Figure 31: Bushfire Prone Land Mapping within the proposal site

6.12.2 ASSESSMENT OF IMPACT

The majority of the proposed footprint has been predominately cleared for the existing 943/2 overhead powerline. The realignment within the TWPZ land has been historically cleared with narrow pockets of native vegetation remaining along drainage lines and at property boundaries. Activities with the potential to generate a spark will be avoided where possible during times of heightened bushfire risk.

In considering the various construction activities, the following potential fire ignition sources have been identified in **Table 14.**

Table 14: Potential construction bushfire risk

ACTIVITY RISK	DESCRIPTION OF WORKS
On-site hot works (if required)	Metal grinding, cutting and welding have the potential to create uncontrolled sparks
Catalytic converter-fitted vehicle exhaust system	Catalytic converters run extremely hot and can ignite tall flammable grass
Discarded cigarette butts from smokers	Littering of cigarette butts can provide an ignition source of flammable vegetation

Higher voltage powerlines provide higher bush fire mitigation due to their height, materials, design and monitoring/safety systems. Furthermore, stricter vegetation controls are enforced for vegetation in and around higher voltage powerline to reduce fire risks. Whilst they are do not pose a zero risk, they are substantially lower than that for distribution networks and a well-maintained powerline, or one within a low density vegetation area, is unlikely to ignite fires.

6.12.3 ENVIRONMENTAL MITIGATION MEASURES

For construction-related bush fire risk activities, the following mitigation measure will be employed:

- Where any hot work is required, a job safety assessment is to be performed to consider the risk of uncontrolled sparks during activities and potential to ignite fires. Such activities to be restricted or prohibited during declared total fire bans
- Vehicles to use dedicated identified access pathways
- Smoking to only occur in designated smoking areas with sufficient facilities in place to appropriate dispose of ash and butts

Ongoing vegetation maintenance would occur to ensure safe clearance distances are maintained within the powerline corridor.

6.12.4 CONCLUSION

The proposal is not anticipated to substantially add to the bushfire risk. The overall environmental risk is considered to be low.

6.13 Traffic and Access

6.13.1 EXISTING ENVIRONMENT

The northeastern portion of the proposal site encompasses the local road network that services the South Lakes residential subdivision, between Dubbo South ZS and Old Dubbo Road. The roads that will provide project access to the proposal site include:

- Boundary Road
- Wheelers Lane

- Azure Avenue
- Amadeus Avenue
- Argyle Avenue
- Crossroads Drive
- Holmwood Drive
- Paterson Circuit
- Old Dubbo Road

The proposal site then traverses southwest from Old Dubbo Road through less urbanised areas, with the following roads providing access to the proposal site:

- Obley Road
- Camp Road
- Newell Highway (classified Road)
- Rifle Range Road
- Buddens Road
- Dungary Road
- Curries Road

The Forest Glen Solar Farm is accessed from Minore Road and Delroy Road. Delroy Road has undergone recent upgrade to facilitate the traffic associated with the Solar Farm development.

6.13.2 ASSESSMENT OF IMPACT

During construction, the work site will receive multiple vehicle movements per day ranging from light utility vehicles through to heavy commercial machinery, trucks and semitrailers. Local road users may be subject to minor delays during the delivery of equipment or materials to the proposal site.

Float trucks will be required to deliver large earth moving plant to and from site. Light vehicles will deliver construction staff to site during construction. Upon commissioning, on-going traffic to the site will be limited to regular inspection / monitoring and maintenance purposes. Existing farm tracks will also provide access to the powerline during construction and operation.

Local road users may be subject to minor delays during the delivery of equipment or materials to the proposal site.

Temporary road closures will be required where proposed overhead conductors are to be spanned between the newly installed poles, and during existing conductor removal activities, over roadways. This will be required at:

- Boundary Road
- Azure Avenue
- Argyle Avenue
- Wheelers Lane
- Crossroads Drive
- Holmwood Drive
- Old Dubbo Road
- Obley Road
- Newell Highway (classified road)

- Rifle Range Road
- Buddens Road
- Dungary Road

Argyle Avenue has the existing and proposed powerline traversing a centre median strip/stormwater easement through the centre of the road. Works in this locality will require consultation with adjoining landowners to facilitate safe movements to and from residences. The construction activities will require lane closures and traffic control in the form of detours due to construction equipment needing to occupy at least one lane of the roadway.

During operation, the proposal would only be accessed irregularly by maintenance personnel. The proposal would not strain the capacity of the road system or have significant negative impact on the existing condition of the road assets.

6.13.3 ENVIRONMENTAL MITIGATION MEASURES

The following mitigation measure will be employed:

- The need for a traffic management plan (TMP) for the construction phase would be determined and, if required, completed prior to works commencing. The TMP would outline requirements for the safe and continued use of local transport corridors during construction
- Local road users will be advised in advance through signage and consent obtained from the DRC for the proposed temporary closure of roads throughout construction.

6.13.4 CONCLUSION

The proposal would have traffic and access impacts during construction and maintenance operations. The impacts would be short-term and minor. Upon implementation of the mitigation measures outlined in this assessment, the overall environmental risk is considered to be low.

6.14 Land Use

6.14.1 EXISTING ENVIRONMENT

An existing 132kV overhead powerline is present in the landscape and the works proposed will replace this infrastructure within the current corridor, with the exception of a realignment through the TWPZ and a minor increase in cleared corridor width. Exiting from the Dubbo South ZS, the proposal traverses land zoned R2 – low density residential land, as classified by the Dubbo Regional Local Environmental Plan 2022. The alignment then traverses RE1-public recreation land through to Argyle Avenue. From Argyle Avenue through to Old Dubbo Road, both RE1 and R2 zoned land is present. The powerline crosses the disused railway line (zoned SP2-Infrastructure) and traverse C3-Environmental Land through to the northern bank of the Macquarie River. The Macquarie River is zoned W2- Recreational Waterways. Southwest of the Macquarie River and the TWPZ land through to the Newell Highway is zoned SP3 – Tourist, noting that a small section of the proposal enters in RE1. The Newell Highway is zoned as SP2. West of the Newell Highway the proposal interacts with a small section of R5- large lot residential zoned land, north of Rifle Range Road. As the powerline continues west the land is zone RU2 – Rural landscape to the boundary with the Forest Glen Solar Farm. The FGSF is zoned RU1 – Primary Production.

6.14.2 ASSESSMENT OF IMPACT

The footprint occupied by the proposed powerline will be minimal and cause a negligible reduction in remaining land for ongoing use for agricultural purposes / or recreation in urban areas upon decommissioning of the existing poles. The proposed powerline will have a high degree of integration into the current environment given that it will be replacing an existing powerline, within (mostly) the same alignment, with most structures in very similar locations to present arrangement.

6.14.3 ENVIRONMENTAL MITIGATION MEASURES

The following measures should be adhered to during the construction phase of the proposed activity:

- Consultation about the proposed works and schedule will be undertaken directly with landowners
- The site should be left in a tidy condition at the conclusion of construction activities

6.14.4 CONCLUSION

Any impacts on land use are likely to be minor and will enable the continuation of current agricultural land use and residential/recreational use with limited to no long-term impacts or impediments. Given the nature of existing land uses, the overall environmental risk is considered to be low.

6.15 Social and Economic

6.15.1 EXISTING ENVIRONMENT

The proposal site is located in the Dubbo Regional Council LGA, within the Central West and Orana region of NSW. The population with the LGA is 52,000 people, covers 7,536km^2 and includes the city of Dubbo, the town of Wellington and the villages of:

- Geurie
- Wongarbon
- Stuart town
- Mumbil
- Ballimore
- Elong Elong
- Eumungerie (Dubbo 2020).

Dubbo is expected to be the place of highest growth as the major urban centre for the Orana region. Dubbo is well serviced by road, rail and air transport. The main industries in the Dubbo Regional LGA are health, retail, education, government services, tourism, manufacturing, construction, agriculture, business services and transport. The region is also well positioned as a growing mining services centre with mining and exploration projects, both established and emerging, across the surrounding region (DRC 2020).

Dubbo 2020, characterises the social profile of the local area, identifying:

- Projected population growth between 2016 to 2036 is from 51,018 to 60,866 people
- median age within the Dubbo region is 37
- 4.6% speak languages other than English
- 15.1% identify as Aboriginal and/or Torres strait islander
- Has an unemployment rate of 3.5%, below the NSW average of 4.99%
- Largest employer is health care and social assistance
- Largest number of businesses are in the agriculture, forestry and fishing sector

6.15.2 ASSESSMENT OF IMPACT

An improvement to the electricity supply network provides many benefits to the broader community through a secure and reliable electricity supply.

In the absence of further augmentation to the high voltage supply network, there is an increased risk of supply interruptions. This would detrimentally impact on economic and social development of the region

and potentially prove to be disruptive to existing commercial enterprises and to residences throughout the local area.

The proposal would support the energy transition, including solar power, and connections into the National Electricity Grid outlined as part of the vision and planning priorities in the DRC Local Strategic Planning Statement 2020 (DRC, 2020). The proposal supports Objective 2 of the Central West and Orana Regional Plan 2041 (DPE, 2022b) by supporting the State's transition to Net Zero by 2050.

The proposal is unlikely to affect community resources; this may include the use of community infrastructure roads, water, and waste management services. The proposal is unlikely to cause substantial change or disruption to the community through loss of neighbourhood cohesion, access to facilities, community identity, or cultural character.

Electricity is an essential service in the human environment, by virtue of enhancing productivity, comfort, safety, health and the economy. The benefits of a secure and reliable electricity supply are evident in every aspect of our lives. Construction and operation of the proposed new powerline will enable the connection of a number of new major customers to the grid, whilst ensuring a safe and reliable electricity supply to the broader Central-west Orana region.

6.15.3 ENVIRONMENTAL MITIGATION MEASURES

The following mitigation measures will be employed to manage and minimise potential negative social and economic impacts:

- Management of construction traffic in the vicinity of construction works, including communication with existing local residents and road users
- Signs and barriers would be erected around construction work sites, where appropriate, to minimise the possibility of personnel injuries and prevent placing the public at risk.

6.15.4 CONCLUSION

Construction will be temporary in nature, and apart from some changes to the visual amenity, long-term impacts are not expected.

Negative social impacts would be short-term and minor. Longer term positive impacts are expected due to the proposal supporting the Central-west Orana REZ, the economic and social opportunities that will flow from that development, and the security and reliability of electricity supply with increasing demand. Given the mitigation measures outlined in this assessment, the overall environmental risk is considered to be low.

6.16 Cumulative Impacts

6.16.1 FOREST GLEN SOLAR FARM

The Forest Glen Solar Farm (FGSF) and an associated zone substation and switching station is an approved state significant development, currently undergoing construction. The proposal assessed in this REF is to assist in facilitating the electricity generated by this solar farm being distributed to the grid.

6.16.2 FURTHER CONNECTION TO THE FOREST GLEN SWITCHING STATION

In addition to the powerline assessed in this document, there are additional powerlines and augmentation works proposed, separate to this assessment, and are likely in the future:

- A new 11kV and 132kV powerline between the Forest Glen switching station and the existing powerlines to the north of the FGSF, parallel to Minore Road.
- Potential future connections as other renewable energy generators establish

The works related to this proposal and those mentioned above will be staged at different times, but will also occur in quite distinct areas, with the exception of connection works close to the Forest Glen Switching Station. Additional vegetation clearing will be required, however, such clearing will be limited in extent.

6.16.3 TWPZ SERENGETI EXHIBIT

TWPZ is currently constructing the Serengeti exhibit, a project that received development consent under Part 4 of the EP&A Act, earlier this year. The exhibit includes accommodation, new access and internal roadways throughout the site to connect to Camp Road to the south. Recreational facilities (including pools and waterplay), restaurant and function facilities and animal housing are proposed. The area will notably house giraffes and involve 'safari' style visitor experiences. Early consultation with TWPZ identified that relocating the powerline would be desirable, to limit visual impact of the powerline to visitors, and zoo keeping practices for the giraffe within the proposed and existing layout of the area.

6.16.4 RIFLE RANGE ROAD – RESIDENTIAL SUBDIVISION

Construction works are underway at a residential subdivision, the southern extent of which is accessed from Rifle Range Road. The proposed alignment is within the existing corridor in this locality. Initial vegetation clearing in the vicinity of the proposed alignment has commenced.

6.16.5 INTERACTIONS WITH OTHER DEVELOPMENTS WITHIN THE LOCALITY

Prospective solar farm developments are identified within the area west of Dubbo, however, are in different stages of project development.

6.16.6 CONCLUSION

Based on the range of environmental impacts associated with the proposal subject to assessment in this REF, and the known existing and proposed developments in the locality, there is potential for cumulative impacts. However, given the relatively small disturbance footprint beyond the existing corridor, and the localised extent of potential impacts during construction and operational phases of the proposal, the potential cumulative impact to other environmental factors during construction and operation of the proposal has been minimised to the greatest extent possible, and would not be significant. Any residual, minor impacts identified in this section of the REF can be mitigated and managed through the range of measures outlined in this section and summarised in **Table 15.**

6.17 Summary of Environmental Mitigation Measures

The environmental mitigation measures outlined in this document would be incorporated into the Project Construction Environmental Management Plan (CEMP). These safeguards would minimise any potential adverse impacts arising from the proposed works on the surrounding environment. The mitigation measures are summarised in **Table 15**.

Table 15: Summary of Mitigation Measures

ASPECT	ENVIRONMENTAL MITIGATION MEASURES	TIMING
General	All environmental mitigation measures must be incorporated within the Construction Environmental Management Plan (CEMP), or relevant works plan as applicable for the proposed works.	Pre-works.
Consultation	Consultation has been undertaking, and is on-going in accordance with **Table 5**.	Project planning and pre-works. Project planning and pre-works. During works.
Licences, Permits, Approvals and Notifications	Notification to the local council in accordance with section 45 of the *Electricity Supply Act 1995*.	40 days notice of the proposed works must be given. Essential Energy's Design Services will be responsible for this notification. This notification was sent on 10 April 2025. Design services have been corresponding with DRC since the provision of this letter.
	Section 138 approval in accordance with the *Roads Act 1994* for work over the Newell Highway.	This approval has been obtained by the Design services team.
Air Quality	Any potential dust-borne materials transported to and from the activity site will be covered at all times during transportation Any temporary stockpiles of surplus excavated material will be covered or wet down during dry and windy conditions All vehicles and machinery will be well maintained according to manufacturer requirements to ensure emissions are kept within acceptable limits.	During works

Geology and Soil	Risks associated with sediment and erosion will be managed in accordance with The Blue Book – Managing Urban Stormwater: Soils and Construction (Landcom 2004) Disturbed areas will be stabilised as soon as practicable following construction activities Essential Energy's *CEOP8064 Management of Excavated Material; Guideline for Construction Sites* will be consulted to determine the most appropriate beneficial reuse or disposal method for any surplus excavated materials	During works.
Water Quality and Hydrology	Control measures will be implemented to manage risks associated with the handling of fuel through using spill trays when undertaking in field re-fuelling Disturbed areas will be managed consistent with the requirements of the Blue Book to minimise potential impacts to waterways. Sediment fencing will be erected, where required, downslope of disturbed areas, and impacts would be minimised where practicable. The implementation of overland discharge of sediment laden water across grassed areas within the easement.	During works
Noise and Vibration	Work that has the potential to create and audible noise at the nearest sensitive receiver, will be between 7am and 6pm Monday to Saturday. When in the South Lakes residential subdivision construction works on Saturday will be restricted to 8am to 1pm. On occasions works outside these hours may be undertaken with agreement from adjacent landowners or where the following requirements are met: Neighbours (and other sensitive receivers) adjacent to the works or the local council or the NSW Environment Protection Authority (EPA) have been notified; and	During works

	Where the works are required to take place in the vicinity of private access ways or driveways, consultation with individual residents would be undertaken to advise residents of the planned timing of the works. All plant and equipment will be operated and maintained in accordance with the manufacturer's specifications. Any noise complaint will be investigated with additional control measures put in place if required.	
Flora and Fauna	Any change in design affecting land outside the proposal site assessed in this report will require further consideration To minimise clearing of EECs the boundary of the EEC will be identified A staged habitat removal process is recommended when identified habitat is to be removed, where practicable. Immediately prior to commencement vegetation removal involving hollow bearing trees, the tree to be inspected for fauna If fauna is detected, the animal is to be allowed to leave the site without any coercion or a local wildlife rescue service is to be contacted to facilitate the safe removal of the animal from the worksite Erosion and Sediment Control measures will be considered consistent with Landcom's Managing Urban Stormwater, Soils & Construction Guidelines (The Blue Book. Landcom 2004). Where possible segments of trees removed from tree lopping to be placed in adjoining habitat where agreed upon with landowner Provide spill kits around temporary construction ancillary facilities All food scraps and rubbish are to be appropriately disposed of to discourage feral animals Essential Energy has a general biosecurity duty under the Biosecurity Act 2015 to prevent, eliminate or minimise biosecurity risk so far as is reasonably	Pre-works, during works and post works.

	practicable. Field crews shall follow procedures as outlined in Essential Energy's Operational Guideline: Biosecurity Risk Management (CERM1000.96) to prevent, eliminate or minimise biosecurity risk so far as is reasonably practicable, with particular reference to vehicle and equipment hygiene practises Only place stockpiles in low value vegetation or cleared sites within the assessed project footprint.	
Aboriginal Heritage	No land and ground disturbance activities may occur outside the study area. Should the parameters of the proposal extend beyond the assessed areas, then further archaeological assessment may be required. Contractors should be provided with the locations of WPZ-OS4, WPZ-OS5, DLGA-OS-02 and Dundullimal Reserve Open Site 2 (DR-OS2sothatexclusion fencing can be established and inadvertent harm avoided. No track maintenance may occur outside of the existing footprint of the access track (and as shown by 'no track maintenance' zones shown on Figure 27, to avoid inadvertent harm to WPZ-OS4 and WPZ-OS5. In the unlikely event that an Aboriginal heritage site or object is located during the construction phase of the project, works will cease in that area and a representative from Essential Energy's Environmental Services will be notified. Works with the potential to disturb the object would not resume until the object had been properly identified, and appropriate action taken If human remains are uncovered, works must immediately cease, and the NSW Police department and Essential Energy's Environmental Services team will be notified	During works
Non-Aboriginal Heritage	All construction work would be undertaken within the assessed areas of the proposal site only In the unlikely event that a previously unknown heritage site or object is located during construction of the proposal, works would cease immediately	During works

	in that area and a representative from Essential Energy's Environmental Services would be notified. Works with the potential to disturb the object would not resume until the object had been properly identified, and appropriate action taken.	
Contamination	It is intended to reuse surplus spoil beneficially on site, where possible Essential Energy's *CEOP8064 Management of Excavated Material; Guideline for Construction Sites* will be consulted to determine the most appropriate beneficial reuse or disposal method for excavated materials In the event of encountering any suspected contamination in the work area, it will be separated and contained on site until it can be classified in accordance with the EPA (2014) *Waste Classification Guidelines*, and then disposed of at a facility that is lawfully able to accept the waste Control measures will be implemented to manage risks associated with the handling of fuel through using spill trays when undertaking in field re-fuelling Sediment and erosion control structures will be established and maintained in accordance with The Blue Book to minimise potential impacts on receiving watercourses.	During works
Electric and Magnetic Fields	The proposal will comply with all relevant national and international guidelines Siting the location of the proposed powerlines from sensitive residential receivers greatly minimises any potential residual EMF exposure risk	Project planning and design
Waste	All wastes that are generated as a result of the project that require offsite disposal will be considered in accordance with the Waste Classification Guidelines (EPA, 2014) All waste material will be reused, recycled, or disposed of at a facility lawfully capable of receiving the waste.	During works
Bushfire	Where any hot work is required, a job safety assessment is to be performed to consider the risk of uncontrolled sparks during activities and potential to ignite	Post construction

	fires. Such activities to be restricted or prohibited during declared total fire bans Vehicles to use dedicated identified access pathways. Smoking to only occur in designated smoking areas with sufficient facilities in place to appropriate dispose of ash and butts Ongoing vegetation maintenance would occur to ensure safe clearance distances are maintained for the powerlines.	
Traffic and Access	The need for a traffic management plan (TMP) for the construction phase would be determined and, if required, completed prior to works commencing. The TMP would outline requirements for the safe and continued use of local transport corridors during construction Local road users will be advised in advance through signage and consent obtained from the DRC for the proposed temporary closure of roads throughout construction.	Pre-works and during works
Land Use	Consultation about the proposed works and schedule will be undertaken directly with landowners The site should be left in a tidy condition at the conclusion of construction activities.	During works
Social and Economic	Management of construction traffic in the vicinity of construction works, including communication with local residents and road users Signs and barriers would be erected around construction work sites, where appropriate, to minimise the possibility of personnel injuries and prevent placing the public at risk.	Pre-works and during works

7. Ecologically Sustainable Development

Ecologically sustainable development (ESD) is an attempt to provide the best outcomes for the human and natural environments both now and into the indefinite future. One of the most often cited definitions of sustainability is development that "meets the needs of the present without compromising the ability of future generations to meet their own needs". Sustainability relates to the continuity of economic, technical, social, institutional and environmental aspects of human society, as well as the non-human environment.

The existing environment has been described throughout **Section 0** this REF for the various aspects of the natural environment assessed as part of this proposed activity.

The proposal has been assessed against the following four principles of ESD listed in the Protection of the Environment Administration Act 1991.

The four principles of ESD are:

- The precautionary principle: section 6(2)(a)(i)(ii)
- The principle of inter-generational equity: section 6(2)(b)
- The principle of biological diversity and ecological integrity: section 6(2)(c)
- The principle of improved valuation of environmental resources: section 6(2)(d)(i)(ii)(iii).

An assessment of the proposal against the principles is provided below.

7.1 Precautionary Principle

The precautionary principle states that:

'If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, public and private decisions should be guided by:

1) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and

2) an assessment of the risk weighted consequence of various options.'

For the precautionary principle to be applicable, two pre-conditions must be satisfied; "*first it is not necessary that serious or irreversible environmental damage has actually occurred – it is the threat of such damage that is required. Secondly, the environmental damage threatened must attain the threshold of being serious or irreversible*"[5].

If there is no threat of serious or irreversible environmental damage, there is no basis upon which the precautionary principle can apply.

Environmental investigations, including quantitative ecological impact assessment and Aboriginal heritage due diligence assessment supported by a site inspection, have been undertaken during the preparation of this REF to ensure that the potential environmental impacts are understood with a high degree of certainty. The spatial scale of impacts would be local and isolated to the immediate construction area. Therefore, it can be concluded that this proposal will not result in a threat of serious or irreversible damage.

Mitigation measures have also been proposed in this REF to minimise the identified potential impacts of the project. A Construction Environmental Management Plan (CEMP) will be developed and implemented as a

[5] Telstra Corporation Limited v Hornsby Shire Council [2006] NSWLEC 133, Preston CJ at 129

precautionary measure, and no mitigation measures have been deferred due to a lack of scientific certainty. The proposal is therefore consistent with the precautionary principle.

7.2 Principle of Inter-generational Equity

The principle of inter-generational equity states that:

'The present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.'

To the extent possible, all environmental impacts and appropriate mitigation measures have been identified. The proposal would not harm the health, diversity and productivity of the environment to such an extent that future generations would not be able to benefit. The proposal will have the positive benefit of facilitating the connection of renewable energy projects into the grid.

The proposal is therefore consistent with the principle of inter-generational equity.

7.3 Principle of Biological Diversity and Ecological Integrity

The principle of biological diversity and ecological integrity states that:

'*Conservation of biological diversity and ecological integrity should be a fundamental consideration.*'

The proposal comprises the construction of a dual circuit 132kV overhead powerline predominately within an existing cleared powerline corridor, with the exclusion of a minor realignment within a previously cleared landscape within TWPZ owned land. An ecological impact assessment, supported by site inspections has been prepared, which concluded the proposal will not result in a significant impact to the ecological values present in the proposal site, as described in **Section 6.5**.

7.4 Improved Valuation of Environmental Resources

The principle of improved valuation of environmental resources states that:

'*Environmental factors should be included in the valuation of assets and services such as:*

- *Polluter pays – that is, those who generate pollution and waste should bear the cost of containment, avoidance and abatement*
- *The users of goods and services should pay prices based on the full life cycle of costs of providing those goods and services, including the use of natural resources and assets and the ultimate disposal of any waste*
- *Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms that enable those best placed to maximise benefits or minimise cost to develop their own solutions and responses to environmental problems.'*

The proposal has been designed taking into consideration the least possible impact on the environment. All costs associated with the containment, avoidance and abatement of pollution have been factored into the design of this proposal. The proposal will have the positive benefit of facilitating the connection of renewable energy projects into the grid.

8. Construction Environmental Management Plan

8.1 Introduction

A Construction Environmental Management Plan (CEMP) outlines the environmental objectives of a project, the environmental mitigation measures to be implemented, the timing of implementation, responsibilities for implementation and management, and a review process to determine the effectiveness of the strategies.

The construction contractor(s) would be required to develop a project-specific CEMP that addresses the scope of works to be undertaken. The CEMP would detail how the works would be undertaken to comply with all environmental laws, Essential Energy's environmental policy, and the environmental mitigation measures described in this REF.

The key objectives of the CEMP would include:

- Ensuring that the works are carried out in accordance with legislative requirements and relevant non-statutory policies
- Ensuring that the works are carried out in accordance with the requirements detailed in this REF, including all requirements outlined in any relevant approvals, permits or licences and the mitigation measures described in **Section 0** and **Table 15**.
- Ensuring that employees engaged to undertake the works comply with the conditions detailed in the CEMP
- Identifying management responsibilities and reporting requirements to demonstrate compliance with the CEMP

It is also noted that the CEMP would be a working document and may be amended over the course of the project.

If a particular activity falls outside the scope of the REF and CEMP, and it would increase the environmental impact, the activity is not permitted to continue without an appropriate environmental assessment under the EP&A Act.

8.2 Implementation of the CEMP

The CEMP would be a working document and would be amended should strategies initially implemented be found to be inadequate to manage environmental impacts. The CEMP would typically:

- Establish environmental goals and objectives
- Detail the conditions of approval
- List actions, timing and responsibilities for implementation that arise from the mitigation measures recommended in this REF
- Detail statutory requirements
- Provide a framework for reporting on relevant matters on an ongoing basis
- Detail training requirements for personnel in environmental awareness and best practice environmental management systems
- Outline emergency procedures, including contact names and corrective actions
- Detail process surveillance and auditing procedures
- List complaint handling procedures

- Detail quality assurance procedures.

8.2.1 AUDITING SCHEDULE OF THE CEMP

Auditing of the proposal is a method that Essential Energy may use to establish whether the contractor is conducting activities in accordance with their current environmental management plans and whether the management plans are providing an effective tool to control adverse environmental impacts.

The following activities are proposed to achieve the audit's purpose:

- Review the on-site implementation of the contractor's CEMP
- Review the documentation process to determine if planned works have received endorsement to proceed
- Monitor the compliance of construction activities with the project determination and environmental legislation
- Review the outcomes of any previous audit(s) and determine if there has been any change in the environmental performance of the construction contractor
- Identify opportunities to improve on-site environmental management practices.

The benefits of conducting the environmental audit are to allow:

- Feedback on the CEMP implementation process to assist both the contractor and project manager to improve the future preparation of site environmental management documentation
- Improve the planning of construction projects through documentation and impact assessment to ensure best environmental management practices are implemented on site
- Improve environmental management processes on site.

9. Environmental Checklist

In accordance with section 5.5 of the EP&A Act and clause 171 of the EP&A Reg, Essential Energy, when assessing the environmental impact of an activity on the environment, must consider the factors identified in **Table 16** and **Table 17** below.

Table 16: Section 5.5 requirements

REQUIREMENT	SECTION REFERENCE
For the purpose of attaining the objects of this Act relating to the protection and enhancement of the environment, a determining authority in its consideration of an activity shall, notwithstanding any other provisions of this Act or the provisions of any other Act or of any instrument made under this or any other Act, examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity	Section 2, 6, 7 and 8
Without limiting the above, a determining authority shall consider the effect of an activity on any wilderness area (within the meaning of the *Wilderness Act 1987*) in the locality in which the activity is intended to be carried on	N/A – there are no wilderness areas within or close to the activity area

Table 17: Clause 171 Checklist

SECTION 171	SECTION REFERENCE
The environmental impact on a community *The proposal is predominately within the cleared corridor of an existing powerline and will replace the current infrastructure. A minor realignment is proposed within the TWPZ owned land.* *Impacts on the community have been considered by this REF. These include noise, dust, social and visual impacts. With the exception of noise and visual, these have been assessed to be low. Potential noise and visual impacts have been assessed as moderate. During the construction phase noise impacts will be short term and transitory and in nature. Operational noise generated by the proposal will be minimal. In accordance with the visual impact matrix, the proposed activity is likely to result in a moderate visual impact for the closest receivers with line of sight to the proposal, mostly within the South Lakes residential subdivision.*	Sections 6.1, 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 6.10, 6.11, 6.12, 6.13 6.14 and 6.15
The transformation of a locality *The proposal is predominately within the cleared corridor of an existing powerline and will replace the current infrastructure. A minor realignment is proposed within the TWPZ owned land.* *The proposal has been determined to have a moderate visual impact in accordance with the visual impact matrix, this is not the same as a significant impact. Powerline infrastructure is considered to be relatively low impact due to their size, scope and intensity. The powerline will not block significant amounts of sunlight, and will not significantly impede views, or impact upon privacy.*	Sections 6.10, 6.14 and 6.15

The proposed activity is unlikely to result in a significant transformation of the locality.	
The environmental impact on the ecosystems of the locality *Impacts to threatened species, populations and ecological communities from the construction, operation and maintenance of the powerline have been assessed in this REF, and will not result in a significant impact.*	Sections 6.5 and 7
Reduction of the aesthetic, recreational, scientific, or other environmental quality or value of a locality *The proposed activity is likely to result in a moderate visual impact to sensitive receivers, though is located in an existing cleared corridor that is already subject to overhead electrical infrastructure, which will be replaced and thus will not significantly reduce current aesthetic or recreational value within the South Lakes residential subdivision. The realignment within the TWPZ land is to better integrate the powerline with the 'Serengeti' development currently under construction. There is negligible impact to on-going landuse as the new powerline will effectively replace the current powerline. Environmental impacts can be managed through implementation of mitigation measures in this REF.*	Sections 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 6.10, 6.14, 6.15 and 6.16
The effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations The proposal is not anticipated to have any impact upon Aboriginal heritage in the area. Given the mitigation measures outlined in this assessment, the overall environmental risk is considered to be low. *Impacts to the significance of Local and State listed heritage items are not anticipated to be more than minor or inconsequential, and will not be significant. Where the sites interact with the proposal, so will have a high degree of integration and the works will remove redundant poles/structures in the vicinity of the sites.*	Sections 6.6, 6.7
The impact on the habitat of protected fauna (within the meaning of the *Biodiversity Conservation Act*, 2016) *The proposed activity is not likely to significantly impact threatened fauna species and their habitat.*	Section 6.5
The endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air *It is not anticipated that the proposal will endanger any species of animal, plant or other form of life, whether living on land, in water, or in the air.*	Section 6.5
Long-term effects on the environment *While localised impacts may occur at the construction sites, these impacts will be temporary and of short duration. Long-term adverse environmental effects are not anticipated.*	Section 6 and 7
Degradation of the quality of the environment *This risk is considered low with the implementation of the management measures included in this REF.*	Sections 6.1, 6.2, 6.3, 6.5, 6.8 and 6.10.

Risk to the safety of the environment *There is the potential risk to the environment from spillage of materials during construction of the proposal. Implementation of the mitigation measures contained in **Section 6** of this REF will ensure that potential environmental risks are minimised.*	Sections 6.1, 6.2, 6.3, 6.8, 6.11, 6.12, 6.13, 6.14 and 7
Reduction in the range of beneficial uses of the environment *No long-term reduction in the range of beneficial uses of the environment is anticipated as a result of the proposal.*	Section 6 and 7
Pollution of the environment *Risk of pollution to the environment is considered low and can be managed with implementation of mitigation measures provided in this REF.*	Section 6
Environmental problems associated with the disposal of waste *Waste generated by the proposed works will be minor. All wastes that are generated by the project will be appropriately disposed of in accordance with the Waste Classification Guidelines (EPA, 2014).*	Section 6.11
Increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply *The proposal is unlikely to increase demands upon rare natural resources.*	Section 6
The cumulative environmental effect with other existing or likely future activities *Based on the range of environmental impacts associated with the proposal subject to assessment in this REF, and the interaction of elements within or in connection with the proposal, or with other existing or proposed developments within the locality, the potential for some cumulative impacts exists. However, given the relatively small disturbance footprint beyond the existing corridor, and the localised extent of potential impacts during construction and operational phases of the proposal, the potential cumulative impact to other environmental factors during construction and operation of the proposal has been minimised to the greatest extent possible, and would likely not be significant. Any residual, minor impacts identified in this REF can be mitigated and managed through the range of measures outlined in this **Chapter 6** and summarised in **Table 15**.*	Section 6.16
The impact on coastal processes and coastal hazards, including those under projected climate change conditions *The proposal is not located on the coast.*	Section 3.3 and 6.3
Applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1 *The proposal would support the push for renewables, including solar power, and connections into the National Electricity Grid outlined as part of the vision and planning priorities in the DRC Local Strategic Planning Statement 2020 (DRC, 2020). The proposal, through the connection of a new solar farm, supports Objective 2 of the Central West and Orana Regional Plan 2041 (DPE, 2022b) by supporting the State's transition to Net Zero by 2050 and deliver the Central–West Orana Renewable Energy Zone.*	Section 6.15

Other relevant environmental factors *No other relevant environmental factors have been identified during the preparation of this REF*	N/A

10. Conclusion

This REF has been prepared to assess the environmental impacts associated with the construction, operation and maintenance of the 9GG 132kV overhead powerlines rebuild, from Forest Glen Solar Farm to Dubbo South Zone Substation. Essential Energy is a determining authority as defined in the EP&A Act. As such, the activity has been assessed under Part 5, Division 5.1 of the EP&A Act.

The proposal would enable the upgrade of the local electricity network to increase overall network capacity and enable large load and generators to connect, placing Essential Energy in a better position to meet customers' future electricity needs.

The proposal complies with the provisions of section 5.5 of the EP&A Act and clause 171 of the EP&A Reg as shown in **Section 9**.

The proposal and its associated environmental impacts are unlikely to have a significant impact on the environment. The proposal would strengthen Essential Energy's electricity network in the broader area, maximising the social and economic benefits, whilst minimising any adverse environmental impacts.

11. References

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Appendix A: Design Plans

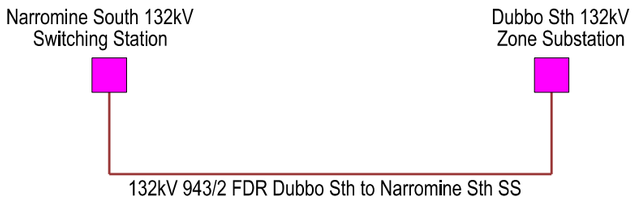
Cell Legend

- New Pole Transmission
- Pole to be recovered
- Fibre Splice OH
- New Stay
- OPGW OH Cond
- 132kV OH Cond
- 11kV OH Cond
- 11kV UG Cable
- PAD Substation
- Pole Mounted Substation
- Zone Substation
- Railway

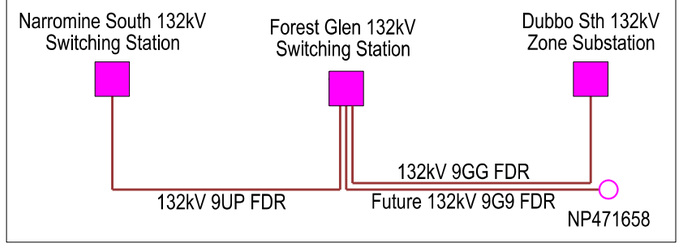
REFERENCE FILES
806986-R2 - Construction Plan
806986-O1 - Overhead Construction Schedule
806986-S1 - Conductor Schedule and Stringing Charts
806986-I1 - Overhead Profiles
806986 WHSE Compliance Tool
806986-M1 Staking Table

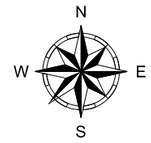
REFERENCE FILES
P001823_01C - Transmission Line Identfication Survey
REF_806986_Feeder_9GG_Dubbo_Sth-Forest_Glen
24045 - Pole Footing and Stay Anchor Pile Design

Subtransmission Connection Diagram - Existing



Subtransmission Connection Diagram - Proposed

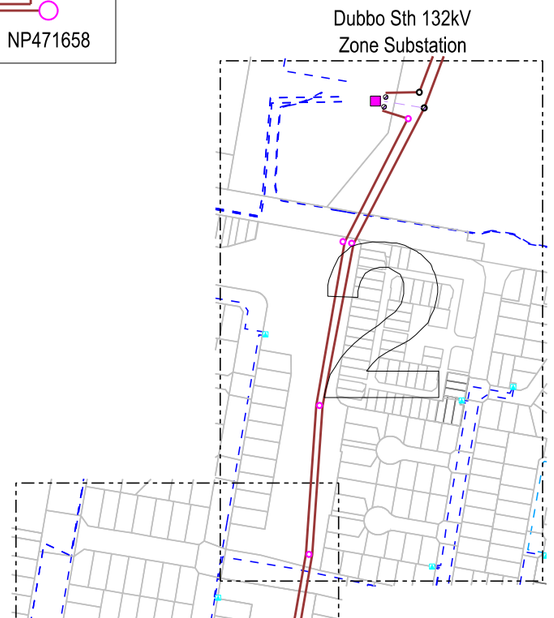




PROJECT NOTES

1. Insulation level 132kV.
2. Limit state design in accordance with AS/NZS 7000:2016.
3. Ultimate wind pressure 1109Pa @ 15°C.
4. Everyday temperature 15°C.
5. Maximum thermal rating 100°C.
6. Overhead earthwires are 96 core OPGW.
7. 9GG 132kV phase conductors are Phosphorus 37/3.75 AAAC/1120.
8. 9G9 132kV phase conductors are Dual (bundled) Phosphorus 37/3.75 AAAC/1120.
9. Earth resistance test shall be completed at every pole before OPGW bonds are connected.
10. UG Services are not shown on plan for clarity. Refer to Transmission Line Identification Survey P001823_01C for locations of all UG services.

ROUTE OVERVIEW



To - Forest Glen SS 132kV
Refer to Construction Plan 806986-R2

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES
132KV 9GG DUBBO STH TO FOREST GLEN SS
Dubbo
9GG DUBBO STH TO FOREST GLEN SS
CONSTRUCTION PLAN SECTION 1

Essential Energy

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SIZE :A3		
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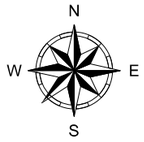
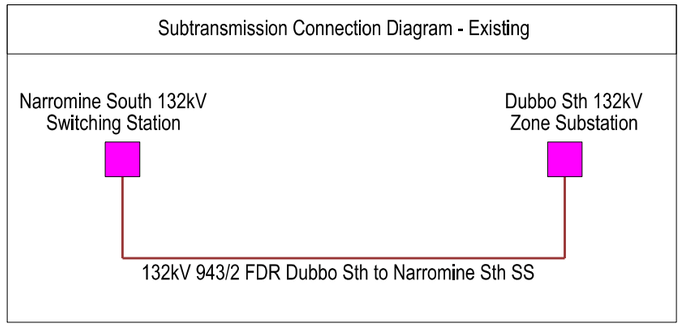
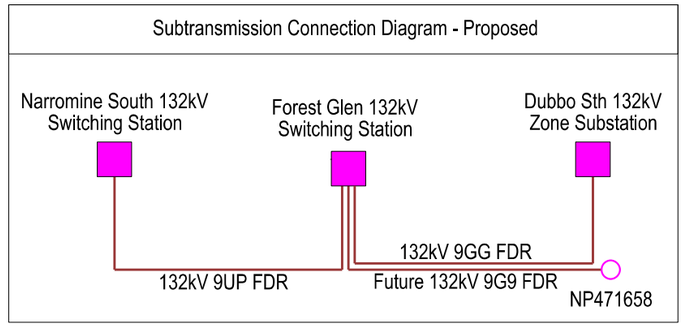
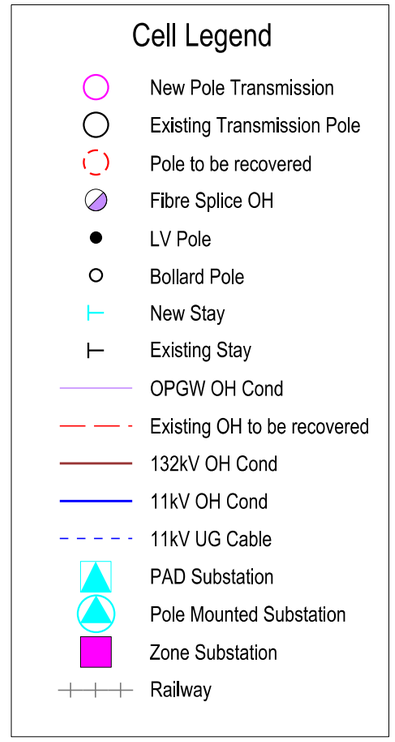




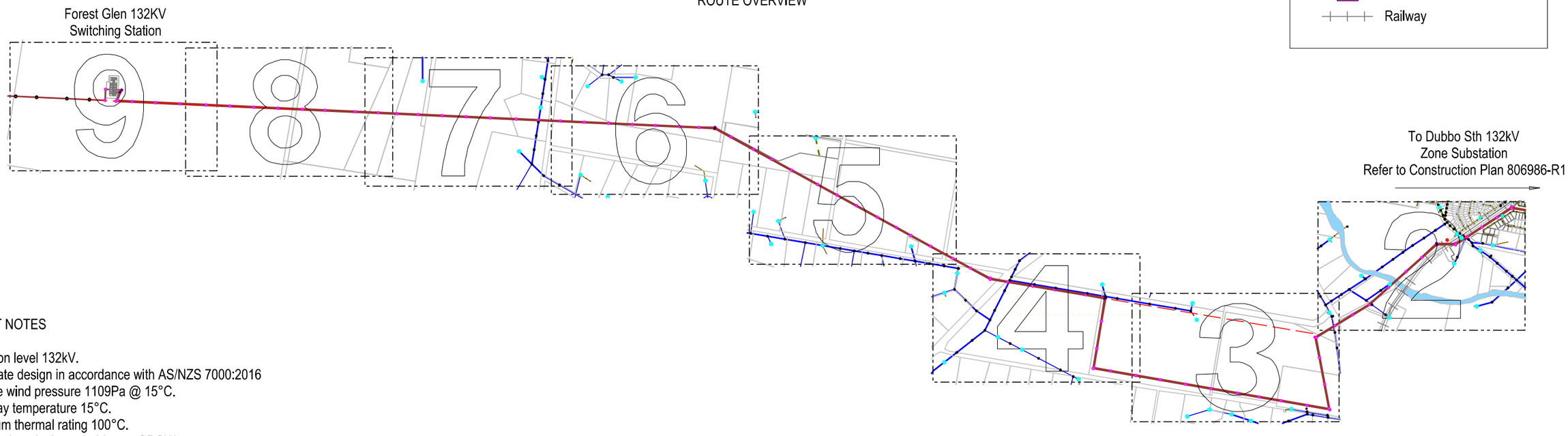




REFERENCE FILES
P001823_01C - Transmission Line Identification Survey
REF_806986_Feeder_9GG_Dubbo_Sth-Forest_Glen
24040 - Pole Footing and Stay Anchor Pile Design
24045 - Pole Footing and Stay Anchor Pile Design

REFERENCE FILES
806986-R1 - Construction Plan
806986-O1 - Overhead Construction Schedule
806986-S1 - Conductor Schedule and Stringing Charts
806986-I1 - Overhead Profiles
806986 WHSE Compliance Tool
806986-M1 - Staking Table

ROUTE OVERVIEW



PROJECT NOTES

1. Insulation level 132kV.
2. Limit state design in accordance with AS/NZS 7000:2016
3. Ultimate wind pressure 1109Pa @ 15°C.
4. Everyday temperature 15°C.
5. Maximum thermal rating 100°C.
6. Overhead earthwires are 96 core OPGW.
7. 9GG 132kV phase conductors are Phosphorus 37/3.75 AAAC/1120.
8. 9G9 132kV phase conductors are Dual (bundled) Phosphorus 37/3.75 AAAC/1120.
9. Earth resistance test shall be completed at every pole before OPGW bonds are connected.
10. UG Services not shown for clarity. Refer to Transmission Line Identification Survey P001823_01C for locations of all UG services.

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES
132KV 9GG DUBBO STH TO FOREST GLEN SS
Dubbo
9GG DUBBO STH TO FOREST GLEN SS
CONSTRUCTION PLAN SECTION 2

Essential Energy

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AZURE AV

30-11775

1222337
1728

Installation of pole NP475292 will require removal of medium sized gum tree

BOUNDARY RD

1130170
3232

NP475295

CE50516

TO SHEET 3

401
1199356

NP475294

CE50515

96 Core OPGW

132kV Phosphorus 37/3.75 AAAC/1120

96 Core OPGW

CE50514

132kV Dual Phosphorus 37/3.75 AAAC/1120

NP475292

CE50513

NP475293

NP475291

B
R
W

DUBBO SOUTH 132kV
ZONE SUBSTATION

132kV FDR 9GG

132kV FDR 9G9

B
W
R

B
W
R

NP475291

Hydrogen 7/4.50 AAAC

Hydrogen 7/4.50 AAAC

CE50512

NP471657

1301426
101

NP471658

Remove 2 x Temporary stays after final tensioning of conductors

R
W
B

VENETIAN CT

AQUARIUS CT

FOUNTAIN CCT

30-79464

30-20183

Cell Legend

New Pole Transmission	132kV OH Cond
Existing Transmission Pole	OPGW OH Cond
Pole to be recovered	11kV UG Cable
Fibre Splice OH	LV OH Cond
HV Pole	LV UG Cable
HV / LV Pole	Street Light - Column
New Stay	Vibration Damper
Existing Stay	PAD Substation
OHEW OH Cond	Pole Mounted Substation
UG Fibre	Zone Substation
Existing OH to be recovered	Easement

W N S E

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES

132KV 9GG DUBBO STH TO FOREST GLEN SS

Dubbo

9GG DUBBO STH TO FOREST GLEN SS
CONSTRUCTION PLAN SECTION 1

Essential Energy

SCALE :1:1500
SIZE :A3

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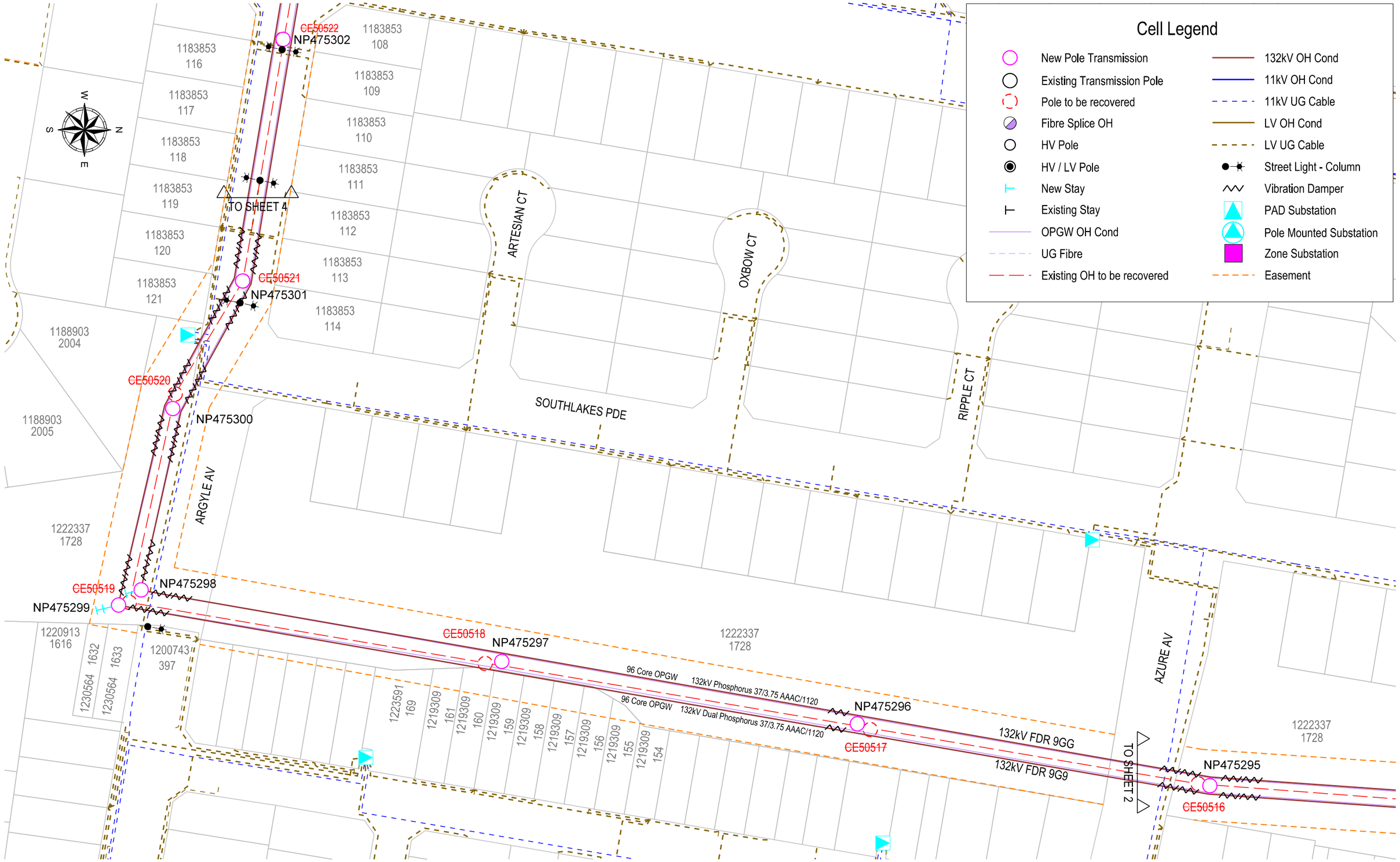

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0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES

132KV 9GG DUBBO STH TO FOREST GLEN SS

Dubbo

9GG DUBBO STH TO FOREST GLEN SS CONSTRUCTION PLAN SECTION 1

Essential Energy

SCALE :1:1500		
SIZE :A3		
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WALDORF PL

PEABODY PL

CROSSROADS DR

RAFFLES CT

HILTON PL

WHEELERS LANE

SHINDYS RD

47 943
46 943

NP475305

530
1303733

TO SHEET 5

30-78963

NP475304

241
1222846

45 943
44 943

96 Core OPGW

132kV Phosphorus 37/3.75 AAAC/1120

96 Core OPGW

132kV Dual Phosphorus 37/3.75 AAAC/1120

132kV FDR 9GG

132kV FDR 9G9

NP475303

CE50523

CE50522

TO SHEET 3

NP475302

N

W

E

S

Cell Legend

- New Pole Transmission
- Existing Transmission Pole
- Pole to be recovered
- Fibre Splice OH
- HV Pole
- HV / LV Pole
- New Stay
- Existing Stay
- OPGW OH Cond
- UG Fibre
- Existing OH to be recovered
- 132kV OH Cond
- 11kV OH Cond
- 11kV UG Cable
- LV OH Cond
- LV UG Cable
- Street Light - Column
- Vibration Damper
- PAD Substation
- Pole Mounted Substation
- Zone Substation
- Easement

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES

132KV 9GG DUBBO STH TO FOREST GLEN SS

Dubbo

9GG DUBBO STH TO FOREST GLEN SS
CONSTRUCTION PLAN SECTION 1

Essential Energy

SCALE :1:1500

SIZE :A3

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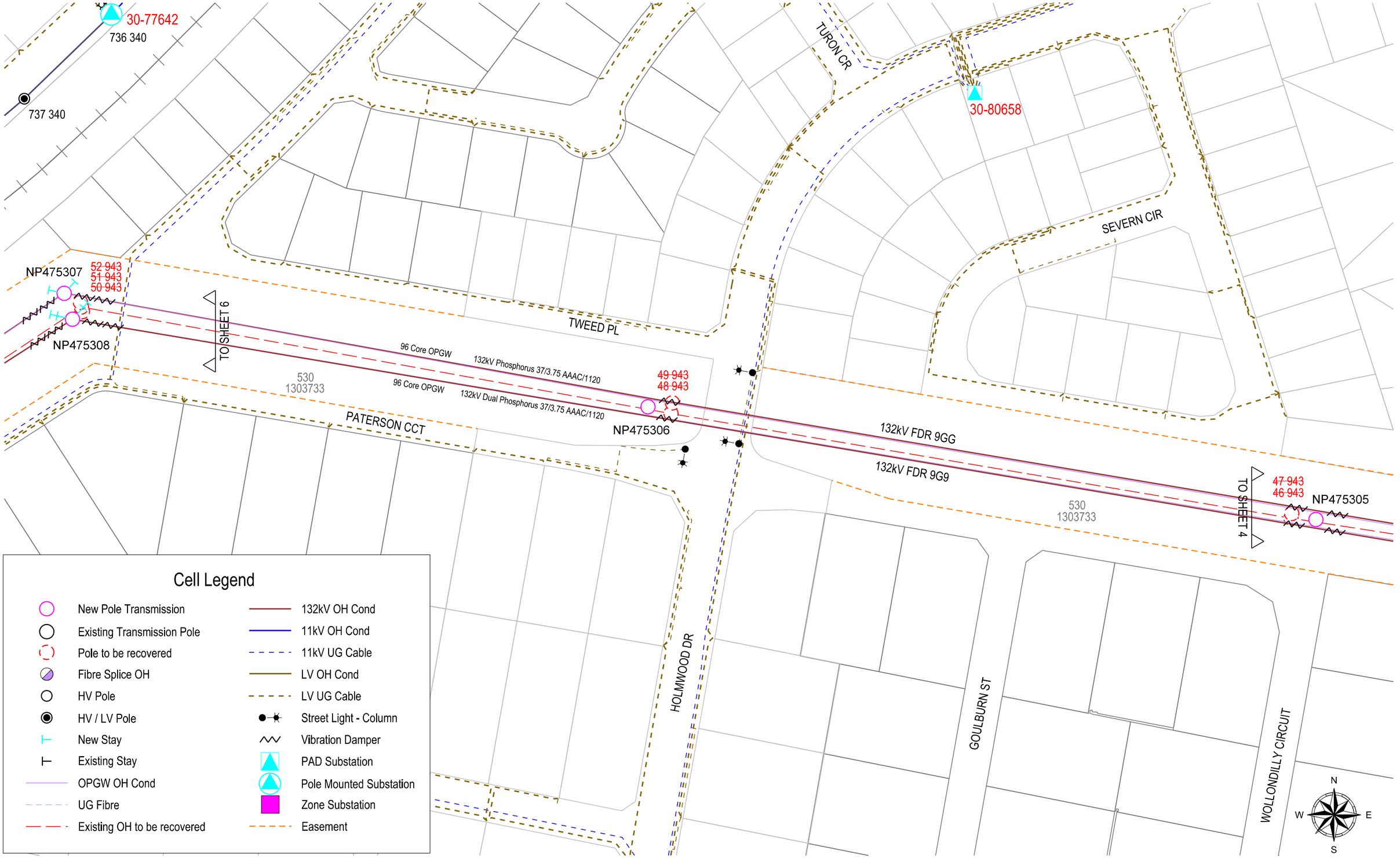

Cell Legend

- New Pole Transmission
- Existing Transmission Pole
- Pole to be recovered
- Fibre Splice OH
- HV Pole
- HV / LV Pole
- New Stay
- Existing Stay
- OPGW OH Cond
- UG Fibre
- Existing OH to be recovered
- 132kV OH Cond
- 11kV OH Cond
- 11kV UG Cable
- LV OH Cond
- LV UG Cable
- Street Light - Column
- Vibration Damper
- PAD Substation
- Pole Mounted Substation
- Zone Substation
- Easement

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES

132KV 9GG DUBBO STH TO FOREST GLEN SS

Dubbo

9GG DUBBO STH TO FOREST GLEN SS CONSTRUCTION PLAN SECTION 1

Essential Energy

SCALE :1:1500

SIZE :A3

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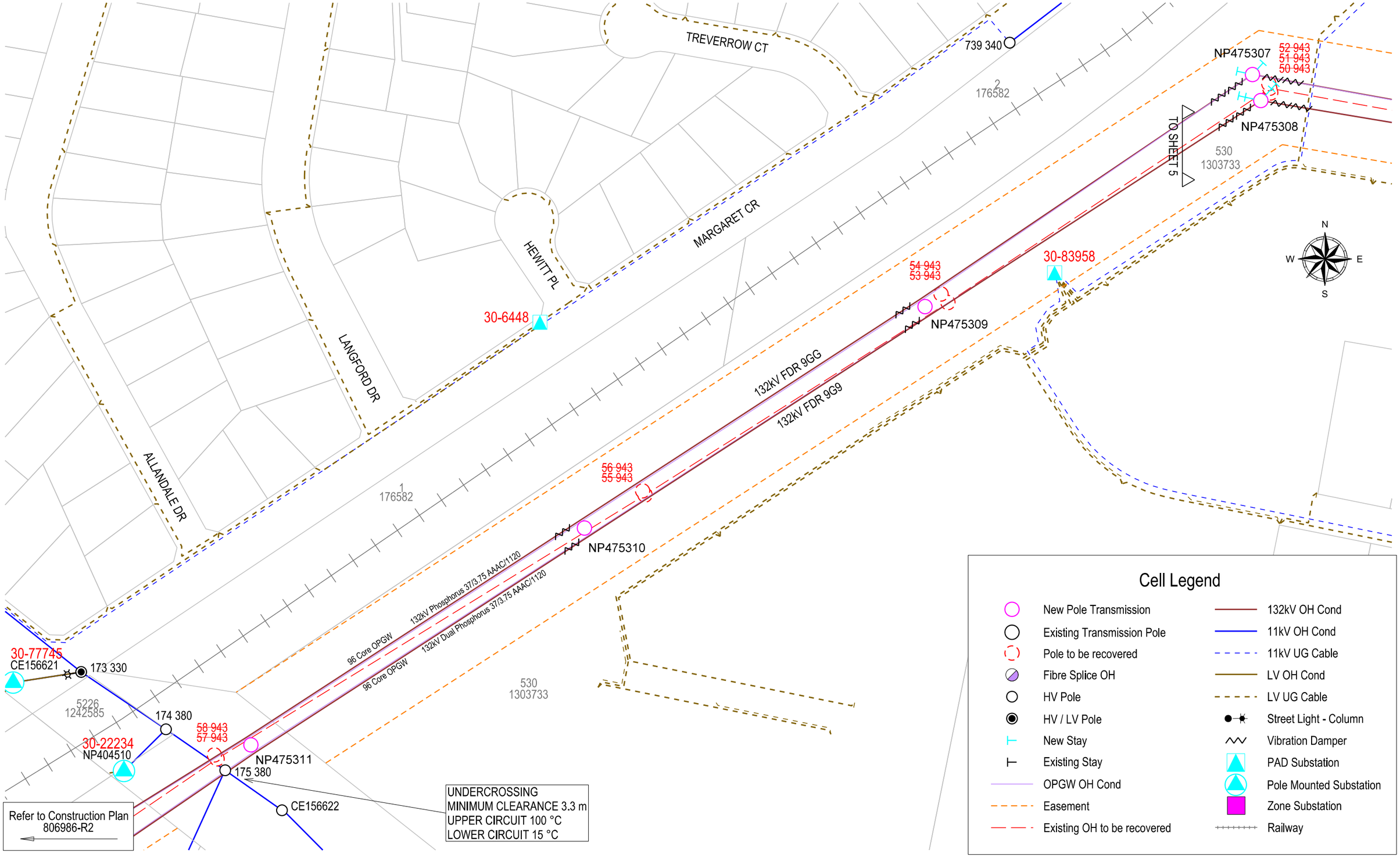

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES

132KV 9GG DUBBO STH TO FOREST GLEN SS

Dubbo

9GG DUBBO STH TO FOREST GLEN SS CONSTRUCTION PLAN SECTION 1

Essential Energy

SCALE :1:1500

SIZE :A3

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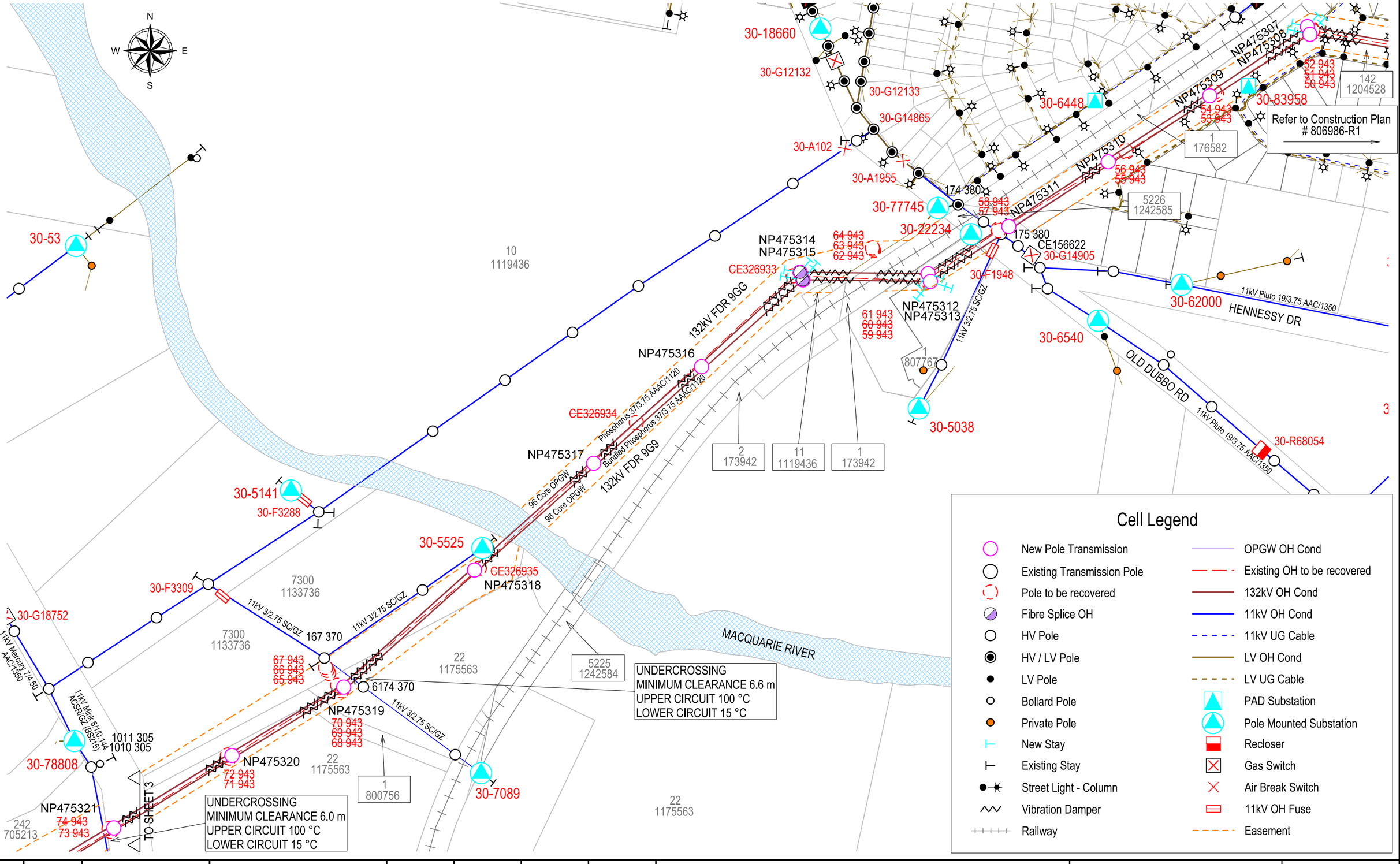

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES
132KV 9GG DUBBO STH TO FOREST GLEN SS
Dubbo
9GG DUBBO STH TO FOREST GLEN SS
CONSTRUCTION PLAN SECTION 2

Essential Energy

SCALE :1:5000
SIZE :A3

DRAWING NUMBER	SHT	VER
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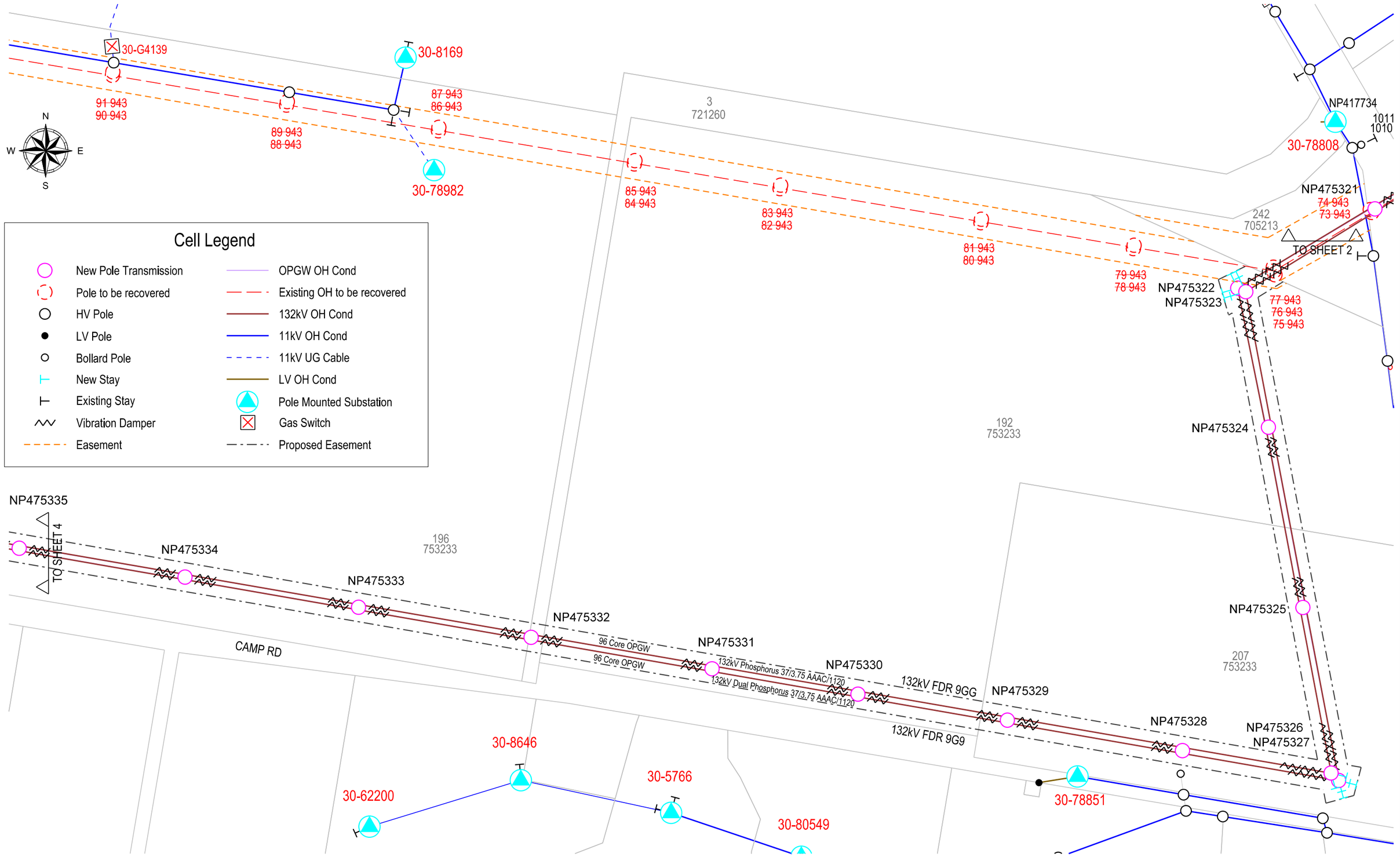

Cell Legend

New Pole Transmission	OPGW OH Cond
Pole to be recovered	Existing OH to be recovered
HV Pole	132kV OH Cond
LV Pole	11kV OH Cond
Bollard Pole	11kV UG Cable
New Stay	LV OH Cond
Existing Stay	Pole Mounted Substation
Vibration Damper	Gas Switch
Easement	Proposed Easement

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES

132KV 9GG DUBBO STH TO FOREST GLEN SS

Dubbo

9GG DUBBO STH TO FOREST GLEN SS CONSTRUCTION PLAN SECTION 2

Essential Energy

SCALE :1:5000

SIZE :A3

DRAWING NUMBER	SHT	VER
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CAUTION
Telstra Fibre Optic Cable in close proximity to NP475346 (Peg 56). Cable must be located by a certified locator prior to commencing any work

UNDERCROSSING
MINIMUM CLEARANCE 5.8 m
UPPER CIRCUIT 100 °C
LOWER CIRCUIT 15 °C

NP475350
110 943
109 943
TO SHEET 5
NP475349
108 943
107 943
RIFLE RANGE RD
NP475347
NP475348
106 943
105 943
104 943
103 943
102 943
NP475346
26 306
27 306
30-G15631
Mink 6/1/0.144 ACSR/GZ (BS215)
11kV Raisin 3/4/2.50 ACSR/GZ
96 Core OPGW
96 Core OPGW
132kV Phosphorus 37/3.75 AAAC/1120
132kV Dual Phosphorus 37/3.75 AAAC/1120
NP475345
101 943
100 943
NP475344
99 943
98 943
NP475343
97 943
96 943
NP475341
NP475342
95 943
94 943
93 943
92 943
30-5180
11kV 3/2.75 SC/GZ
30-5097
9
245143
10
245143
30-5479
30-F3009
NEWELL HWY
37 306
11kV Mink 6/1/0.144 ACSR/GZ (BS215)
30-A1966
30-R13820
191
655828
30-F17568
30-L3022
30-28
30-80435
CAMP RD
30-476
NP475340
132kV FDR 9G9
132kV FDR 9GG
196
753233
NP475339
NP475337
NP475338
NP475336
NP475335
TO SHEET 3

N
W
E
S

Cell Legend

- New Pole Transmission
- Pole to be recovered
- Fibre Splice OH
- HV Pole
- LV Pole
- Bollard Pole
- New Stay
- Existing Stay
- Vibration Damper
- OPGW OH Cond
- Existing OH to be recovered
- 132kV OH Cond
- 11kV OH Cond
- LV OH Cond
- Easement
- Proposed Easement
- Pole Mounted Substation
- Recloser
- Gas Switch
- 11kV OH Fuse
- LV OH Fuse

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES
132KV 9GG DUBBO STH TO FOREST GLEN SS
Dubbo
9GG DUBBO STH TO FOREST GLEN SS
CONSTRUCTION PLAN SECTION 2

Essential Energy

SCALE :1:5000
SIZE :A3

DRAWING NUMBER	SHT	VER
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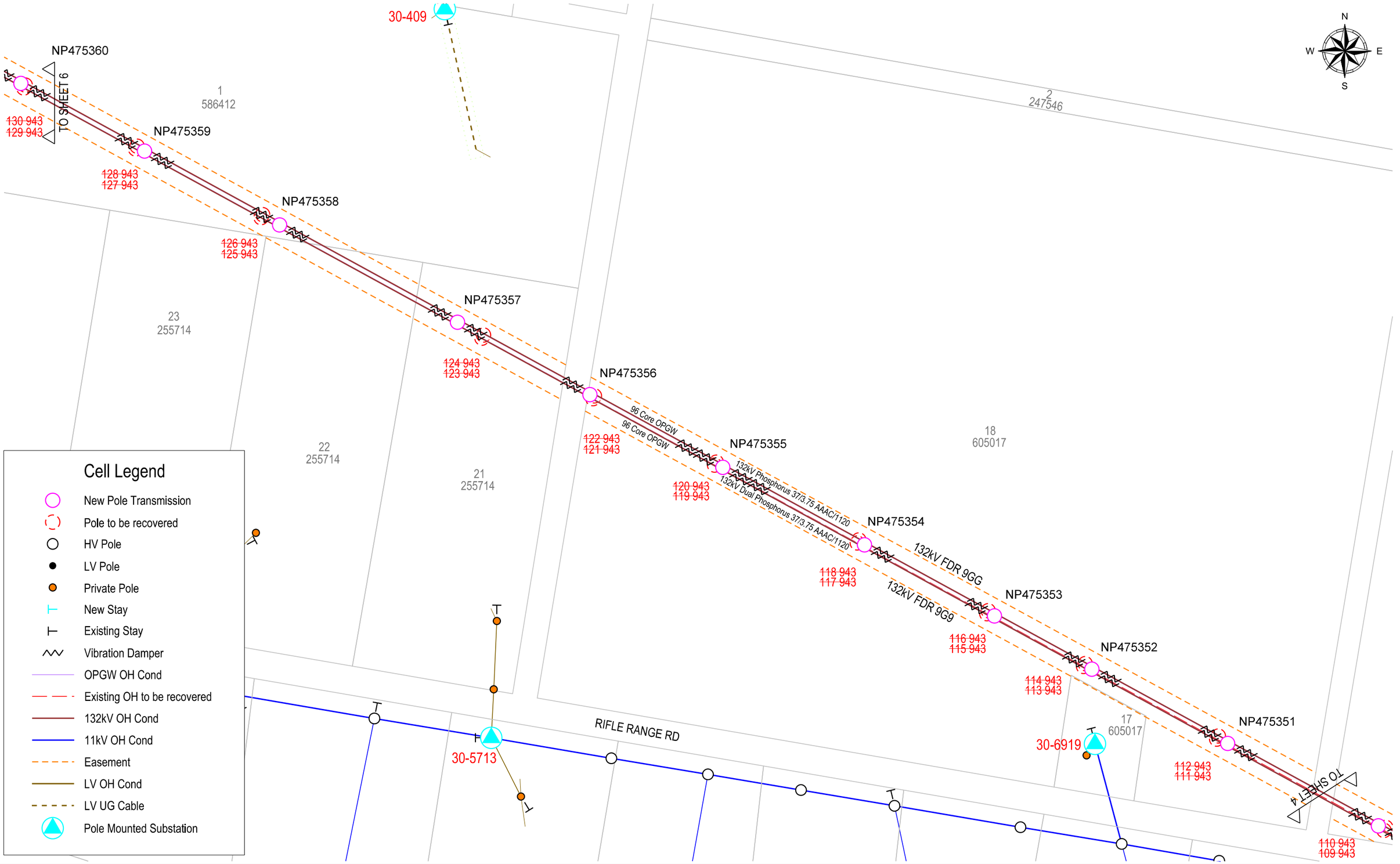

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES

132KV 9GG DUBBO STH TO FOREST GLEN SS

Dubbo

9GG DUBBO STH TO FOREST GLEN SS CONSTRUCTION PLAN SECTION 2

Essential Energy

SCALE	SIZE	DRAWING NUMBER	SHT	VER
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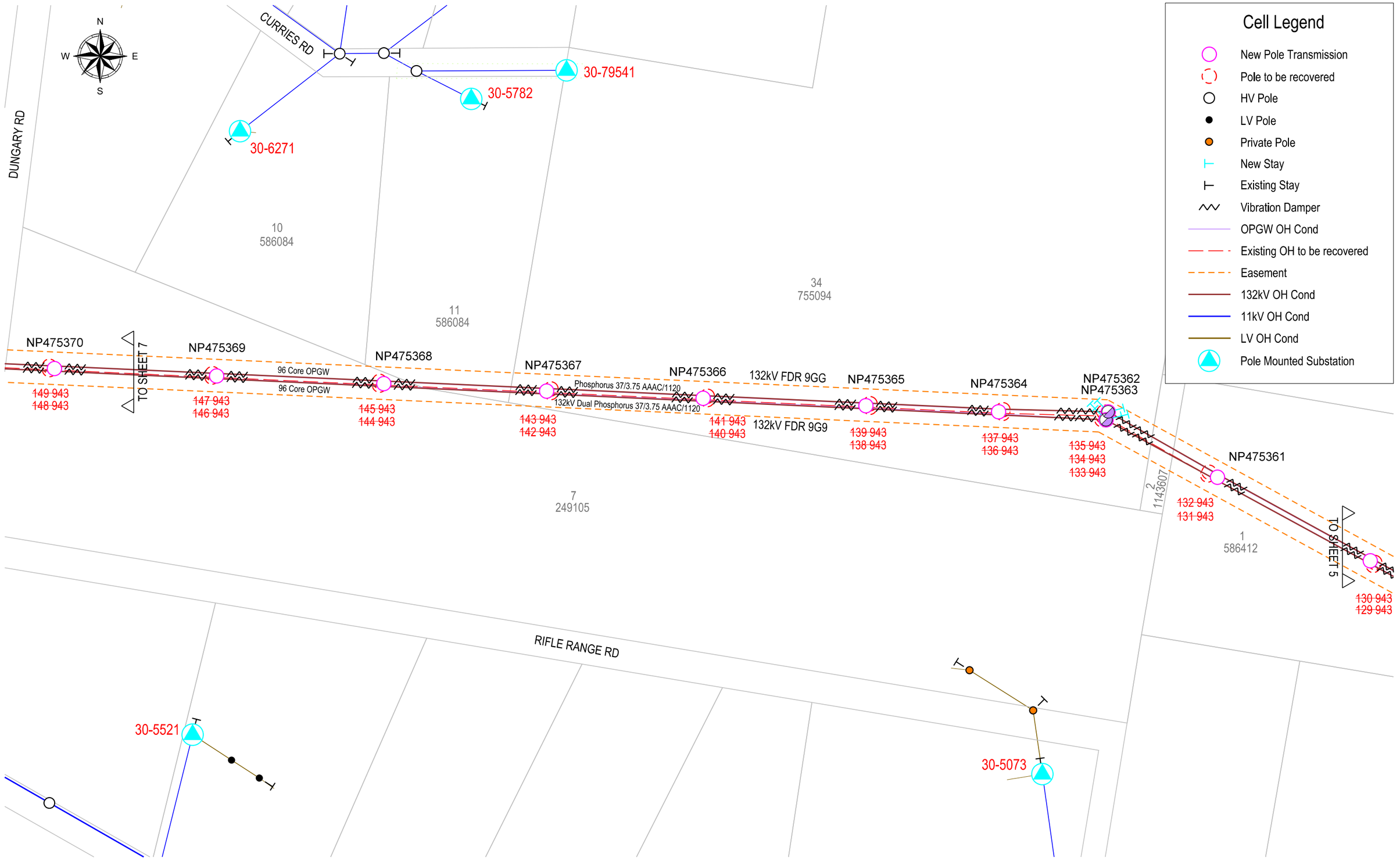

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES

132KV 9GG DUBBO STH TO FOREST GLEN SS

Dubbo

9GG DUBBO STH TO FOREST GLEN SS CONSTRUCTION PLAN SECTION 2

Essential Energy

SCALE :1:5000

SIZE :A3

DRAWING NUMBER	SHT	VER
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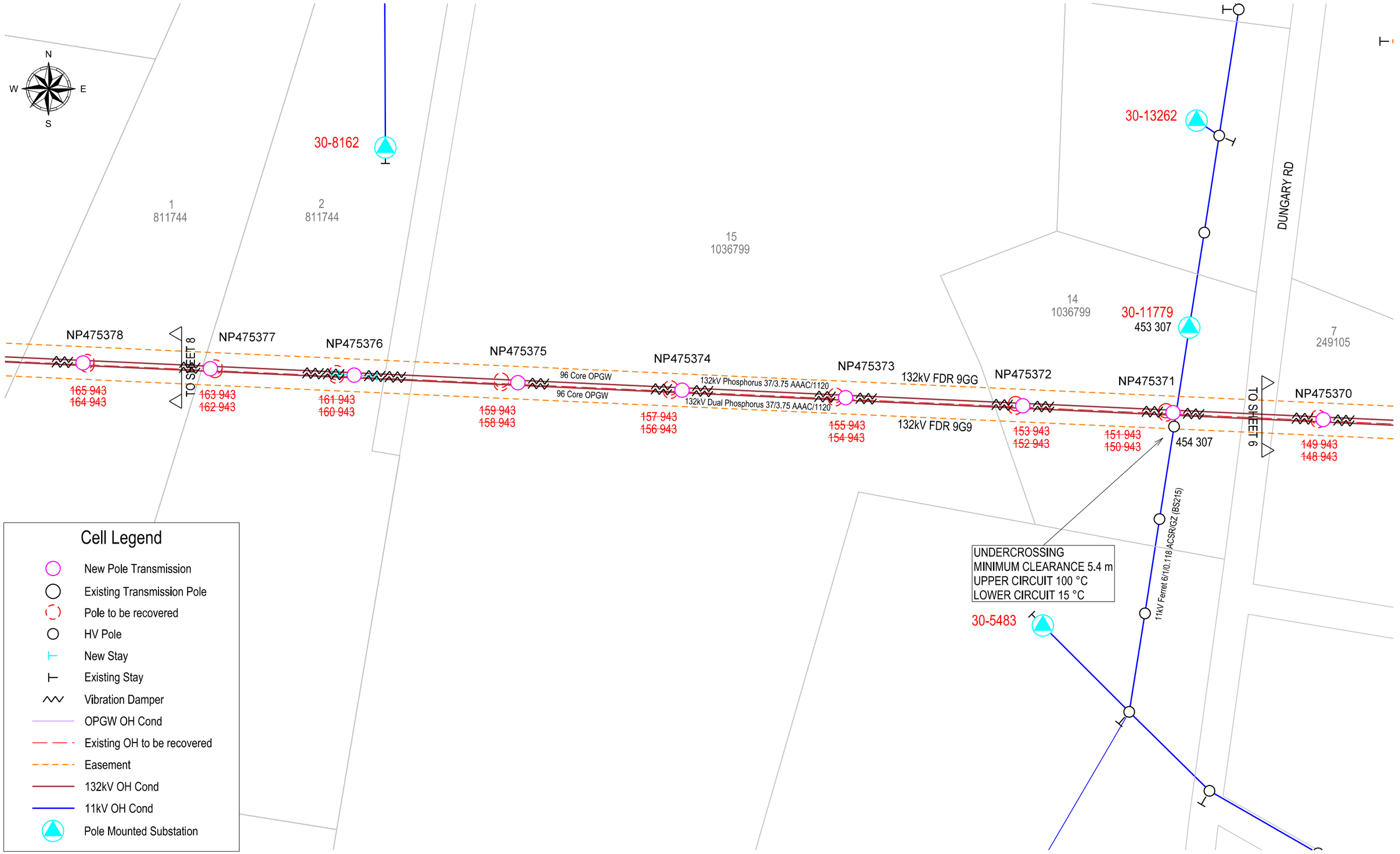

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES

132KV 9GG DUBBO STH TO FOREST GLEN SS

Dubbo

9GG DUBBO STH TO FOREST GLEN SS CONSTRUCTION PLAN SECTION 2

Essential Energy

SCALE :1:5000

SIZE :A3

DRAWING NUMBER	SHT	VER
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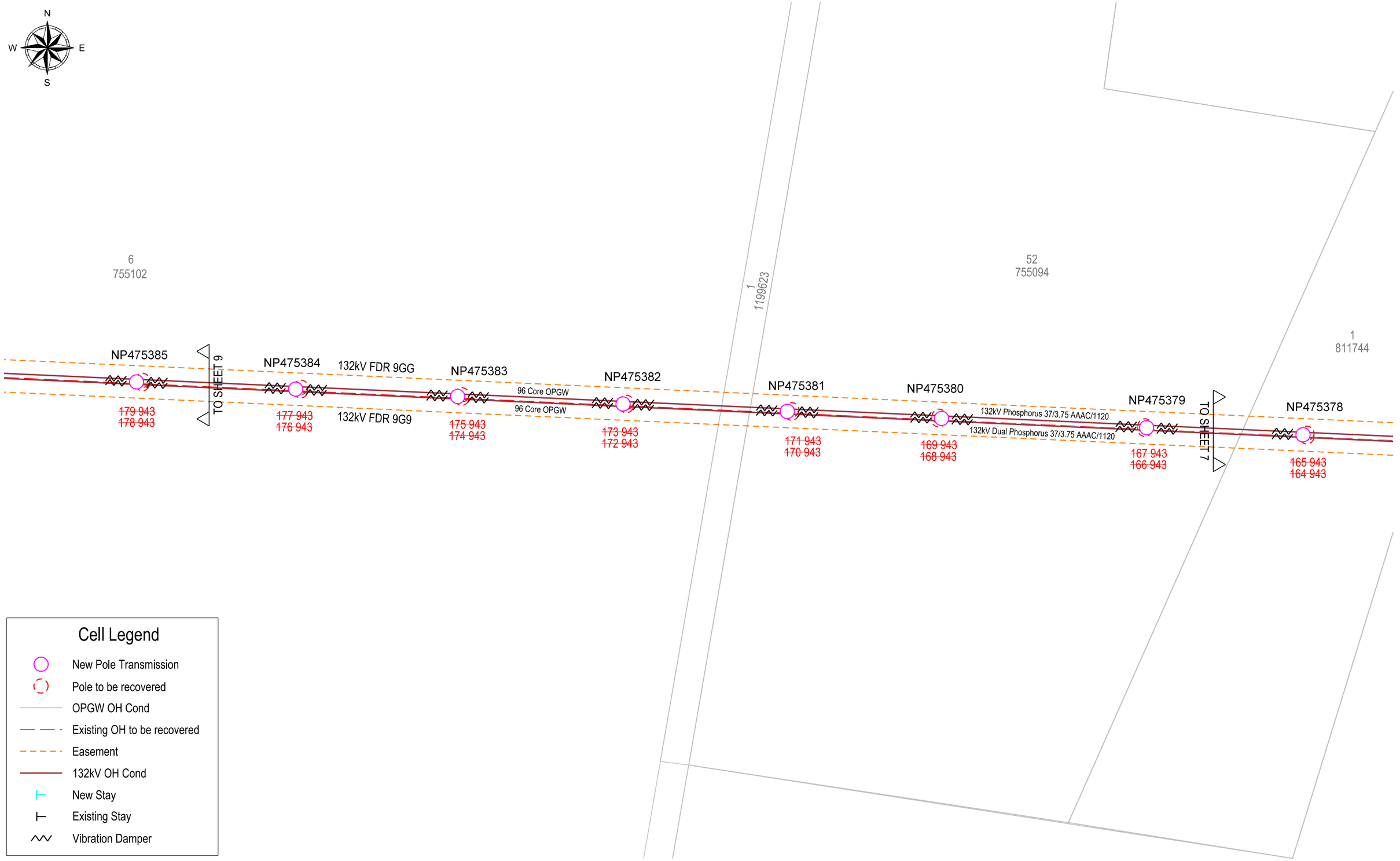


Cell Legend

- New Pole Transmission
- Pole to be recovered
- OPGW OH Cond
- Existing OH to be recovered
- Easement
- 132kV OH Cond
- New Stay
- Existing Stay
- Vibration Damper

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES

132KV 9GG DUBBO STH TO FOREST GLEN SS

Dubbo

9GG DUBBO STH TO FOREST GLEN SS CONSTRUCTION PLAN SECTION 2

Essential Energy

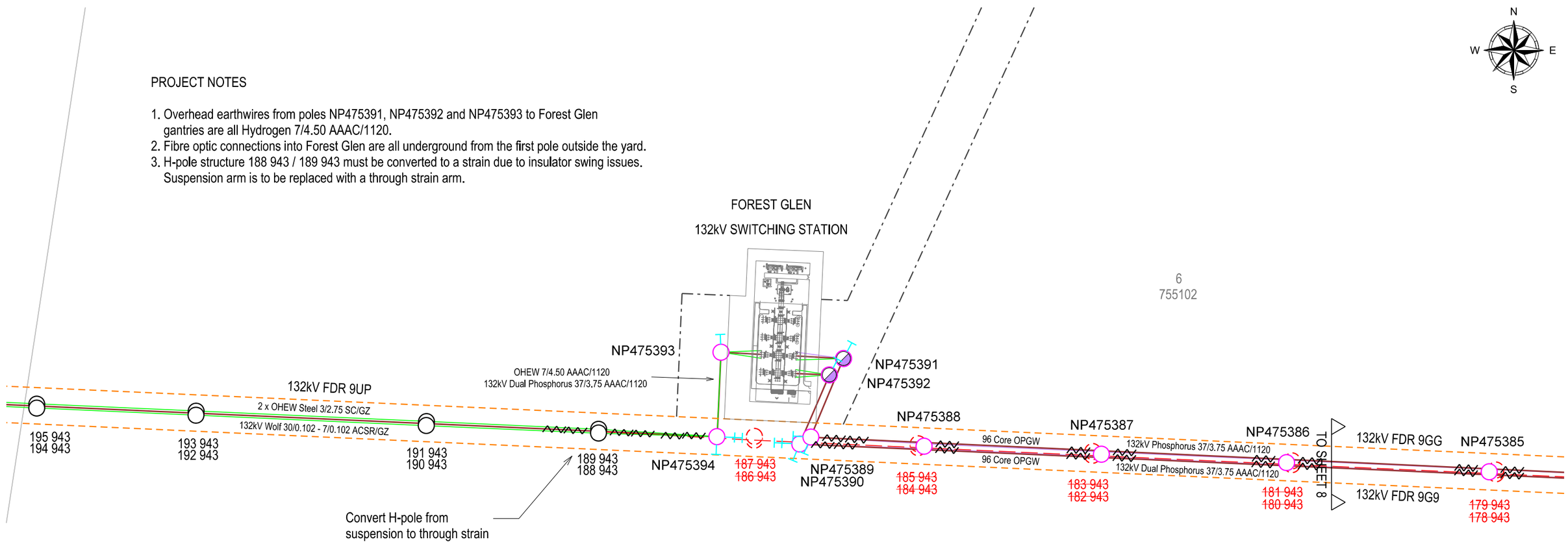
SCALE :1:5000

SIZE :A3

DRAWING NUMBER	SHT	VER
806986-R2	8/9	0

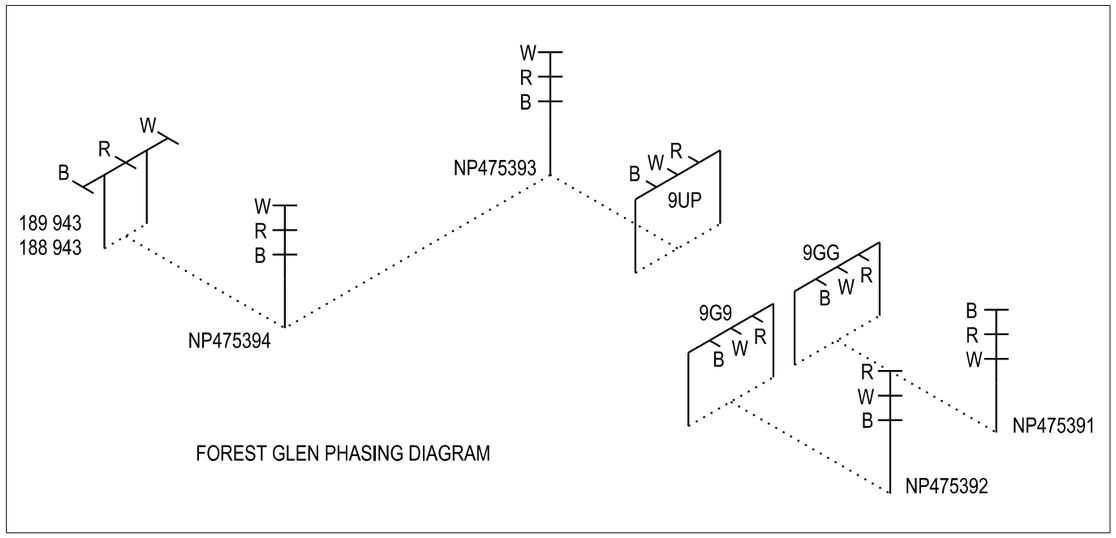
PROJECT NOTES

1. Overhead earthwires from poles NP475391, NP475392 and NP475393 to Forest Glen gantries are all Hydrogen 7/4.50 AAAC/1120.
2. Fibre optic connections into Forest Glen are all underground from the first pole outside the yard.
3. H-pole structure 188 943 / 189 943 must be converted to a strain due to insulator swing issues. Suspension arm is to be replaced with a through strain arm.



Cell Legend

- New Pole Transmission
- Existing Transmission Pole
- Pole to be recovered
- Fibre Splice OH
- OPGW OH Cond
- OHEW OH Cond
- Existing OH to be recovered
- Easement
- Proposed Easement
- 132kV OH Cond
- New Stay
- Existing Stay
- Vibration Damper



FOREST GLEN PHASING DIAGRAM

VER	DATE	PURPOSE	REMARKS	DESIGNED	DRAWN	REVIEWED	APPROVED
0	09/04/2025	CONSTRUCTION		I.LETHEREN	S.WISEMAN	T.KRAMEL	J.WORTH

TRANSMISSION LINES
132KV 9GG DUBBO STH TO FOREST GLEN SS
Dubbo
9GG DUBBO STH TO FOREST GLEN SS
CONSTRUCTION PLAN SECTION 2

Essential Energy

SCALE :1:5000
SIZE :A3

DRAWING NUMBER	SHT	VER
806986-R2	9/9	0

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Appendix B: Biodiversity Assessment Report (OzArk 2025a)

BIODIVERSITY ASSESSMENT REPORT

FOREST GLEN TO DUBBO SOUTH

943/2 AND 9GG REBUILD 132KV FEEDER

NEW ALIGNMENT WITHIN TARONGA WESTERN PLAINS ZOO, NSW

DUBBO REGIONAL COUNCIL LOCAL GOVERNMENT AREA

JULY 2025

Report prepared by

OzArk Environment & Heritage

for Essential Energy

OzArk
Environment & Heritage

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DOCUMENT CONTROLS

Proponent	Essential Energy		
Purchase order number			
Document description	Biodiversity Assessment Report		
	Name	**Signed**	**Date**
Client's reviewing officer			
Client's representative managing this document		**OzArk representatives managing this document**	
Tim Haydon		Dr Sylvester A. Obeng-Darko (SO), Dr Crystal Graham (CG), Dr David Orchard (DO), Lucca Brozler (LB)	
Location		**OzArk job number**	
S:\OzArk EHM Data\Clients\Essential Energy\Forest Glen Solar Farm to Zoo ETL_November 2024\Ecology\Reporting		#4719	
Document status: Final	**Version**	**Date**	**Action**
Internal Draft Series	V1.0 V1.1 V1.2 V1.3 V1.4 V1.5 V1.6	12/03/2025 18/03/2025 23/03/2025 10/04/2025 14/04/2025 21/05/2025 10/06/2025	SO to DO DO to SO SO to CG CG to SO SO to CG CG edit LB edit
First Draft for Client Review	V2.0 V2.1	7/07/2025 9/07/2025	LB to client LB client edits
Final Report for Client	V3.0	9/07/2025	LB to client
Prepared for		**Prepared by**	
Tim Haydon Environmental Senior Specialist Essential Energy PO Box 5730 Port Macquarie NSW 2444 P: 04 0100 8181 E: tim.haydon@essentialenergy.com.au		Dr Sylvester A. Obeng-Darko Project Ecologist OzArk Environment & Heritage 145 Wingewarra Street (PO Box 2069) Dubbo NSW 2830 P: 02 6882 0118 E: Sylvester@ozarkehm.com.au	

Acknowledgement

OzArk acknowledge Traditional Owners of the area on which this assessment took place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by Essential Energy (the client) to conduct an ecological assessment for the proposal to rebuild an overhead powerline between Dubbo and the Forest Glen Solar Farm (FGSF), including a new alignment corridor within the Taronga Western Plains Zoo (TWPZ). The proposal involves the installation of roughly 17 km of 132 kV overhead powerline, extending from the Dubbo South substation to the FGSF (the proposal). Structures 1–19 and Structures 85–100 are not included in the current assessment as the ground surface has been entirely disturbed or the land has undergone previous assessment.

Field surveys were conducted by Project Ecologists Dr Sylvester Obeng-Darko on the 29th of January 2025 and Project Ecologist Dr Alain Ngute on the 30th and 31st of January 2025, along the alignment corridor between Forest Glen and South Dubbo, which includes the proposed new alignment within the TWPZ. In total, 17.87 ha of native vegetation belonging to eight Plant Community Types (PCTs) was recorded during this assessment:

- PCT 26 – Weeping Myall open woodland of the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion.
- PCT 70 – White Cypress Pine woodland on sandy loams in central NSW wheatbelt.
- PCT 74 – Yellow Box - River Red Gum tall grassy riverine woodland of NSW South Western Slopes Bioregion and Riverina Bioregion.
- PCT 78 – River Red Gum riparian tall woodland / open forest wetland in the Nandewar Bioregion and Brigalow Belt South Bioregion.
- PCT 81 – Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion.
- PCT 248 – Mixed box eucalypt woodland on low sandy-loam rises on alluvial plains in central western NSW.
- PCT 267 – White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion
- PCT 469 – White Cypress Pine - Narrow-leaved Ironbark - Buloke grassy open forest of the Dubbo region, southern Brigalow Belt South Bioregion.

According to the BioNet Vegetation Classification Database, many of the detected PCTs have associated Threatened Ecological Communities (TECs).

The occurrence of PCT 26 fits the criteria for the *Biodiversity Conservation Act* 2016 (BC Act)-listed Endangered Ecological Community (EEC): *Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions*, therefore, up to 0.10 ha of this EEC will be impacted by this proposal.

The occurrence of PCT 74 fits the criteria for the BC Act-listed Critically Endangered Ecological Community (CEEC): *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions*, therefore, up to 1.24 ha of this CEEC will be impacted by this proposal.

The occurrences of PCT 81, 248 and 267 all fit the criteria for the BC Act-listed EEC: *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions*, therefore, up to 14.65 ha of this EEC will be impacted by this proposal.

In summary, the maximum potential extent of TECs likely to be impacted by the proposal is 15.99 ha; of these, 1.24 ha are BC Act-listed CEECs and 14.75 ha are BC Act-listed EECs; no *Environment Protection and Biodiversity Conservation* Act 1999 (EPBC Act)-listed TECs will be impacted by the proposal.

Three habitat trees were identified within the subject site, featuring a total of three small, two medium, and one large hollow(s). Additionally, two trees within the TWPZ easement contained bird nests, bilby burrows were observed within the zoo, and an aggregation of rocks were located within the alignment corridor.

One major perennial watercourse (the Macquarie River) and 13 non-perennial watercourses occur within the subject site. The Macquarie River contains Key Fish Habitat as recognised by the Department of Primary Industries – Fisheries and Protected Riparian Land (PRL) as per NSW Department of Climate Change, Energy and the Environment (NSW DCCEEW). Sections of the alignment corridor are located within PRL specifically, between poles 23 and 24 and poles 71 and 72. Although watercourses occur within the subject site, no dredging or reclamation works are required for the proposal and fish passage would not be blocked. Therefore, the client is not required to give the Minister written notice of the proposed work in accordance with Section 199 of the *Fisheries Management Act* 1994 (FM Act).

The aquatic EEC: *The aquatic ecological community in the natural Darling River Endangered ecological occurs* within the subject site. A test of significance conducted in accordance with the FM Act concluded that the proposal would not constitute a significant impact on this EEC.

The Macquarie River and/or the nearby creeks contain the mapped distributions of:

- Silver Perch (*Bidyanus bidyanus*), listed as Vulnerable under the FM Act and Critically Endangered under the EPBC Act
- Southern Purple spotted Gudgeon (*Mogurnda adspersa*), listed as Endangered under the FM Act

- Murray-Darling Basin population of Eel Tailed Catfish (*Tandanus tandanus*), listed as an Endangered population under the FM Act
- Western population of Olive Perchlet (*Ambassis agassizii*), listed as an Endangered population under the FM Act
- Trout cod (*Maccullochella macquariensis*), listed as endangered under both the FM Act and EPBC Act

Based on the tests of significance conducted for the threatened fish species or populations mapped in the subject site, it is highly unlikely that the proposal will have a significant impact on any of the predicted populations of threatened fish.

The field survey recorded 52 native and 33 introduced flora species, including nine species listed as High Threat Exotic (HTE) weeds under the Biodiversity Assessment Method 2020 (BAM). Additionally, six species are listed as Weeds of National Significance, with Coolatai Grass (*Hyparrhenia hirta*) also being a Priority Weed within the Central West Local Land Services region. No threatened flora species were detected during the field survey.

Sixty-nine threatened or migratory fauna species or populations listed under the BC Act, FM Act, and/or EPBC Act and 19 BC and/or EPBC Act-listed threatened flora species were assessed as having a moderate or greater likelihood of occurring at the subject site based on habitat requirements. An EPBC Act protected matters search identified four wetlands of international importance, six TECs, 47 threatened species and 12 migratory species that are predicted or known to occur within 10 km of the subject site. No significant impact on a threatened or migratory species that is likely to result in the extinction of a local population is expected as a result of the proposal.

Based on the results of this Biodiversity Assessment Report (BAR), this proposal does not trigger the need to prepare a Species Impact Statement (SIS) or a Biodiversity Development Assessment Report (BDAR) in accordance with Section 7.8 of the BC Act, nor does it trigger the need to refer the matter to the Minister for the Department of Climate Change, Energy, the Environment and Water.

This assessment covers the current form of the proposal. Any change to the scope of work may require re-assessment. If entry into the NSW Biodiversity Offsets Scheme (BOS) is triggered by a changed scope, additional field work and reporting completed according to the BAM may be required.

CONTENTS

FIGURES

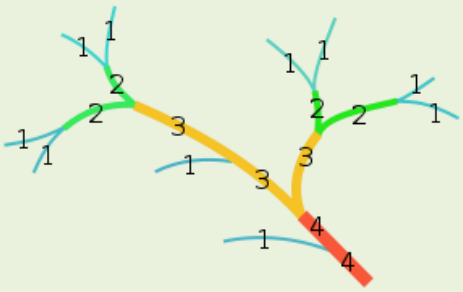
TABLES

GLOSSARY OF TERMS

Term	Description

Areas of outstanding biodiversity	An area of outstanding biodiversity value is:
	• an area important at a State, national or global scale, and
	• an area that makes a significant contribution to the persistence of at least one of the following:
	  • multiple species or at least one threatened species or ecological community
	  • irreplaceable biological distinctiveness
	  • ecological processes or ecological integrity
	  • outstanding ecological value for education or scientific research.
	The declaration of an area may relate, but is not limited, to protecting threatened species or ecological communities, connectivity, climate refuges and migratory species (BC Act).

Cumulative impact	The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Refer to Clause 228(2) of the EP&A Regulation 2000 for cumulative impact assessment requirements.
Direct impacts	Are those that directly affect the habitat of species and ecological communities and of individuals using the study area. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat (OEH 2018).
Habitat	The area occupied or used, including areas periodically or occasionally occupied or used, by any threatened species or ecological community and includes all the different aspects (both biotic and abiotic) used by species during the different stages of their life cycle (OEH 2018).
Important population	Is a population that is necessary for a species' long-term survival and recovery; this may include populations identified as such in recovery plans, and/or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range (DE 2013).
Indirect impact	Occur when project-related activities affect species or ecological communities in a manner other than direct loss within the subject site. Indirect impacts may sterilise or reduce the habitability of adjacent or connected habitats. Indirect impacts can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, reduction in viability of adjacent habitat due to edge effects, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, noise, light spill, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas (OEH 2018).
Invasive species	Is an introduced species, including an introduced (translocated) native species, which out-competes native species for space and resources, or which is a predator of native species. Introducing an invasive species into an area may result in that species becoming established. An invasive species may harm listed threatened species or ecological communities by direct competition, modification of habitat or predation.
Local occurrence (EEC)	The ecological community present within the study area. However, the local occurrence may include adjacent areas if the ecological community on the study area forms part of a larger contiguous area of the ecological community and the movement of individuals and exchange of genetic material across the boundary of the study area can be clearly demonstrated.
Local population (in regard to a threatened or migratory species)	A local population of a threatened plant species comprises those individuals occurring in a defined area or a cluster of individuals extends into habitat adjoining and contiguous with the study area where the individuals could reasonably be expected to cross-pollinate.

Term	Description
	A local population of fauna species comprises those individuals known or likely to occur in a defined area, as well as any individuals occurring in adjoining areas (contiguous or otherwise) that are known or likely to utilise habitats in the study area. The local population of migratory or nomadic fauna species comprises those individuals likely to occur in the study area from time to time (DECC 2007).
Low condition (vegetation)	Either: a) woody native vegetation with native over-storey percent foliage cover less than 50% of the lower value of the over-story percent foliage cover benchmark for that vegetation type, and where either: • less than 50% of ground cover vegetation is indigenous species, or • greater than 90% of ground cover vegetation is cleared or b) native grassland, wetland, or herb field where either: • less than 50% of ground cover vegetation is indigenous species, or • more than 90% of ground cover vegetation is cleared. Note: The percentages for the ground cover calculations must be made in a season when the proportion of native ground cover vegetated compared to non-native ground cover vegetation is likely to be at its maximum.
Moderate to good condition (vegetation)	If native vegetation is not in low condition (above), it is in moderate to good condition.
Mitigation	Action to reduce the severity of an impact.
Mitigation measure	Any measure that prevents, reduce, or controls adverse environmental effects of a project.
NSW (Mitchell) landscape	Landscapes with relatively homogeneous geomorphology, soils, and broad vegetation types, mapped at a scale of 1:250,000 (OEH 2018).
Proposal	Is considered to include 'all activities likely to be undertaken within the subject site to achieve the objective of the proposed development' (DECC 2007).
Risk of extinction	The likelihood that the local population will become extinct either in the short-term or in the long-term as a result of direct or indirect impacts on the viability of that population.
Search area	Is considered to 'include the lands that surround the subject site for a distance of 10 km' (DECC 2007). The study region has been used to search information sources to establish the landscape context of the subject site.
Significant impact	A 'significant impact' is an impact which is important, notable, or of consequence, having regard to its context or intensity.
Strahler stream order	Strahler stream orders are used to define stream size based on a hierarchy of tributaries, based on the diagram below. 
Study area	Means the subject site and any additional areas which are likely to be affected by the proposal, either directly or indirectly. The study area should extend as far as is necessary to take all potential impacts into account (OEH 2018).
Subject site	Means the area directly affected by the proposal. The subject site includes the footprint of the proposal and any ancillary works, facilities, accesses, or hazard reduction zones that support the construction or operation of the development or activity (OEH 2018).
Target species	A species that is the focus of a study or intended beneficiary of a conservation action or connectivity measure.

ABBREVIATIONS

Term	Description
^{0}C	Degrees Celsius
AOBV	Areas of Outstanding Biodiversity Value
ASL	Above Sea Level
BAM	Biodiversity Assessment Method 2020
BAR	Biodiversity Assessment Report
BDAR	Biodiversity Development Assessment Report
BC Act	NSW *Biodiversity Conservation Act 2016*
BOS	NSW Biodiversity Offsets Scheme
CAMBA	China-Australia Migratory Bird Agreement
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
DCCEEW	Commonwealth Department of Climate Change, Energy the Environment and Water
DoE	Department of Environment
DPI	NSW Department of Primary Industries
DPIE	NSW Department of Planning, Industry and Environment
EEC	Endangered ecological community
EIS	Environmental Impact Statement
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
ESCP	Erosion and Sediment Control Plan
FM Act	NSW *Fisheries Management Act 1994*
GDEs	Groundwater dependent ecosystems
GPS	Global Positioning System
ha	Hectare
HTE	High Threat Exotic
IBRA	Interim Biogeographic Regionalisation of Australia. Each region is a land area made up of a group of interacting ecosystems repeated in similar form across the landscape.
JAMBA	Japan-Australia Migratory Bird Agreement
KFH	Key Fish Habitat
KTP	Key Threatening Process
LEP	Local Environmental Plan
LGA	Local Government Area
mm/cm/m/m2/km	Millimetre/centimetre/metre/square metre/kilometre
MNES	Matters of National Environmental Significance
NPW Act	NSW *National Parks and Wildlife Act 1974*
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
PCT	Plant Community Type
PMST	Protected Matters Search Tool
PW	Priority Weed
RAMSAR	Convention on Wetlands of International Importance

Term	Description
REF	Review of Environmental Factors
ROKAMBA	Republic of Korea-Australia Migratory Bird Agreement
SEPP	State Environmental Planning Policy
SIS	Species Impact Statement
TECs	Threatened Ecological Communities
TSPD	Threatened Species Profile Database
VIS	Vegetation information system
WoNS	Weeds of National Significance

1 INTRODUCTION

OzArk Environment & Heritage (OzArk) has been engaged by Essential Energy (the client) to conduct an ecological assessment for the proposal to rebuild an overhead powerline between Dubbo and the Forest Glen Solar Farm (FGSF), including a new alignment corridor within the Taronga Western Plains Zoo (TWPZ). The proposal involves the installation of roughly 17 km of 132 kV overhead powerline (the proposal), primarily within a cleared area, extending from the Dubbo South substation to the FGSF. Structures 1–19 and Structures 85–100 are not included in the current assessment as the ground surface has been entirely disturbed, or the land has undergone previous assessment. The proposal location of the site is shown in **Figure 1-1**.

This Biodiversity Assessment Report (BAR) assesses the potential impacts of the proposal on biodiversity. This biodiversity assessment has been undertaken in accordance with Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and considers whether the proposal is likely to significantly affect threatened species, in accordance with Section 7.2 of the *Biodiversity Conservation Act* 2016 (BC Act).

1.1 PROJECT LOCATION AND CONTEXT

1.1.1 Regional Context

The regional context of the proposal is explored in **Table 1-1** and depicted in **Figure 1-1**.

Table 1-1. Regional context for the project.

Criteria	Value
Interim Biogeographic Regionalisation for Australia (IBRA Region)	• Brigalow Belt South • Darling Riverine Plains
Interim Biogeographic Regionalisation for Australia Sub-region (IBRA Sub-Region)	• Pilliga (subject site) • Inland Slopes (search area) • Talbragar Valley (search area)
State	• NSW
Local Government Area	• Dubbo Regional Council
Nearest town	• Dubbo
Nearest park, state forest or reserve	• Sappa Bulga (within search area) • Beni (Within search area)
NSW (Mitchell) landscapes	• Goonoo Slopes (subject site) • Geurie Granites (subject site) • Macquarie Alluvial Plains
Nearest waterway (Name, Type)	• One major river crosses the subject site (Macquarie River) • Thirteen minor perennial watercourses including Whylandra Creek cross the subject site.
Surrounding land use	• 1.1.1 Nature Conservation (Private Park) • 2.1.0 Grazing native vegetation

Criteria	Value
	• 1.3.0 Other minimal use
Surrounding land zone	• RE2 Private Recreation • SP3 - Tourist (subject site) • E1 - National Parks and Nature Reserves (study area) • RU1 – Primary Production (study area)

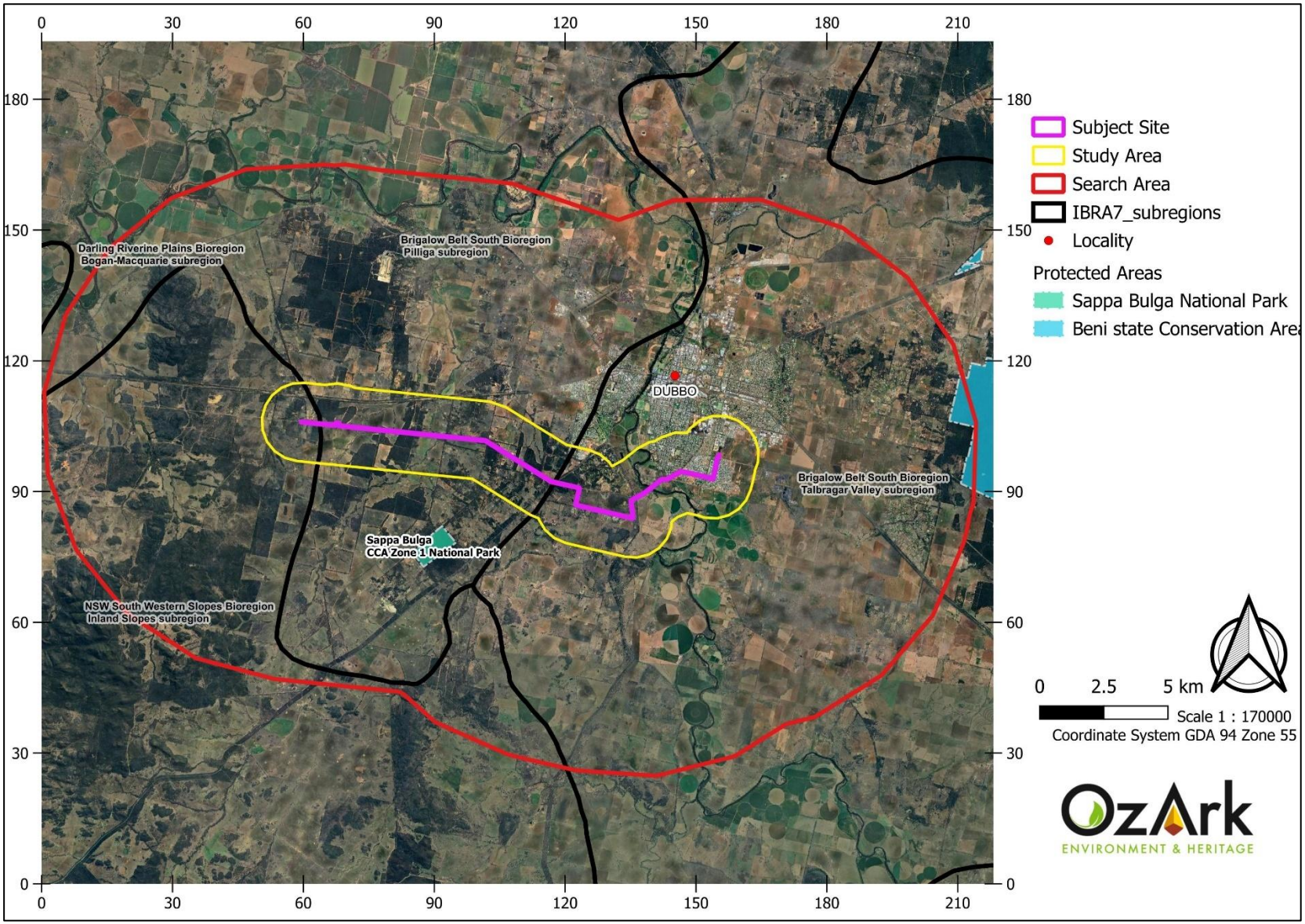


Figure 1-1. Map showing the regional location of the proposal.

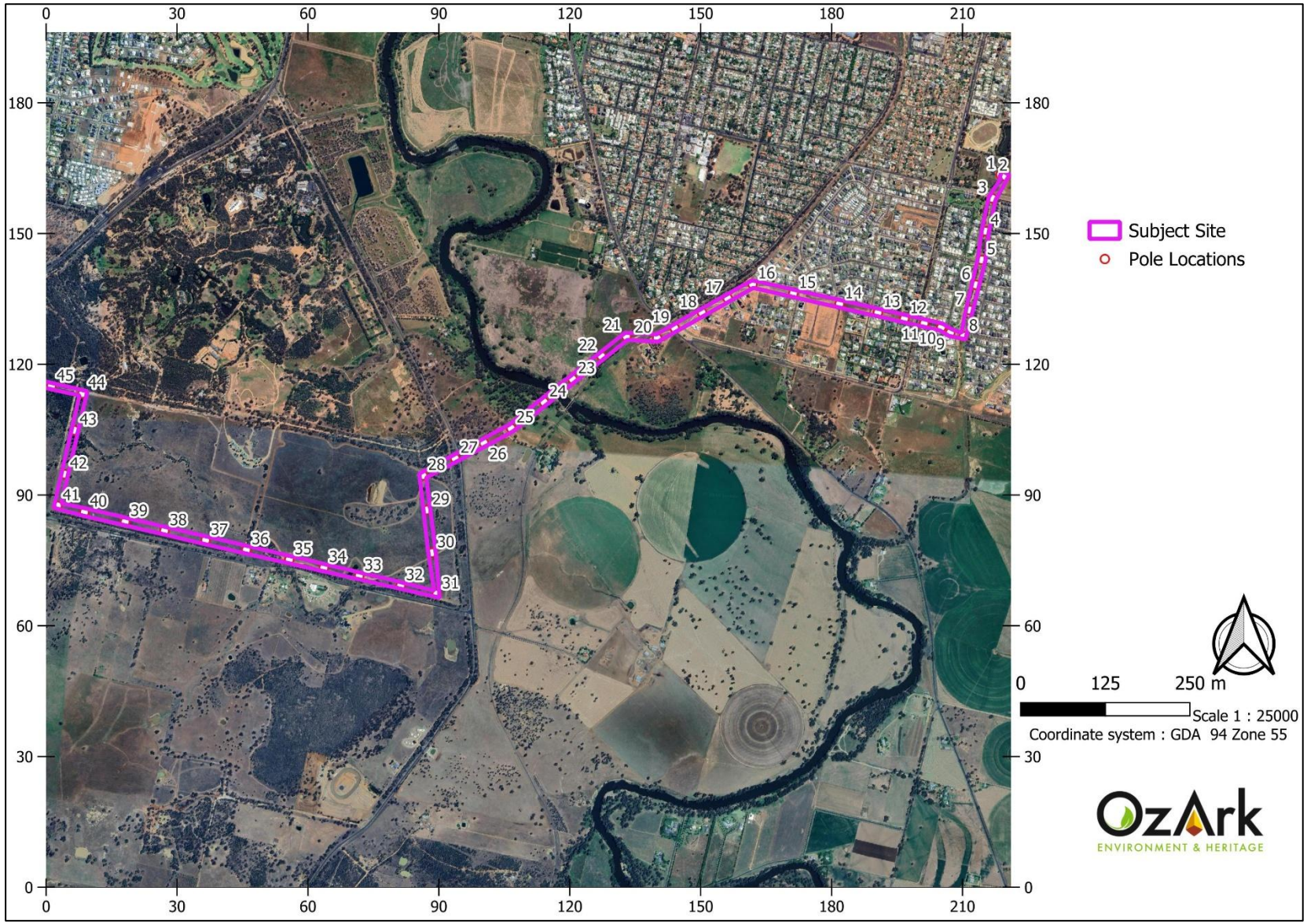


Figure 1-2. The subject site showing new power poles (poles 1 – 45).

Figure 1-3. The subject site showing new power poles (poles 46 – 71).

Figure 1-4. The subject site showing new power poles (poles 72 – 100).

Note: the ecological survey did not extend beyond pole 84, as beyond pole 84 the project enters the project footprint of the FGSF. This area will be disturbed by the solar farm activities, and where exclusion zones exist in the FGSF approval, no vegetation removal will be required beyond the existing overhead cleared corridor.

1.1.2 Search area, Study area, Subject site

This report uses the following terms to describe and contextualise the development location:

10 km search area the area within a 10 km radius of the subject site. This 10 km buffer has been used to search information sources to establish the landscape context of the subject site (**Figure 1-1**).

Study area the area within a 1,500 m radius of the subject site. Native vegetation has been mapped within this 1,500 m buffer to provide some context regarding the connectivity and cover of native vegetation in the area affected by the proposal, and to inform the impact assessment of the proposal (**Figure 1-1**).

Subject site the footprint of the proposal and the area directly affected by the development activities (**Figure 1-1** to **Figure 1-4**).

2 STATUTORY AND PLANNING CONTEXT

2.1 COMMONWEALTH LEGISLATION

2.1.1 *Environment Protection & Biodiversity Conservation Act* 1999 (EPBC Act)

To assist with nationally listed matters assessments, the Matters of National Environmental Significance, the Significant impact guidelines 1.1. Environment Protection and Biodiversity Conservation Act 1999 (DoE 2013) are followed.

Birds listed in the following international agreements are classified as migratory birds under the EPBC Act.

- Japan-Australia Migratory Bird Agreement (JAMBA).
- China-Australia Migratory Bird Agreement (CAMBA).
- Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

Matters which fall under this legislation are addressed in **Sections 5.2, 5.3, 5.7** and **Appendix F**.

2.2 STATE LEGISLATION

2.2.1 *Environmental Planning and Assessment Act* 1979 (EP&A Act)

The EP&A Act is the principal planning legislation for NSW. It provides a framework for the overall environmental planning and assessment of proposals.

Part 5 of this Act requires that a determination be made as to whether a proposed action is likely to significantly affect threatened species or ecological communities, or their habitats listed on Schedule 1 and 2 of the BC Act. Where found, the assessment criteria under Part 7 Section 7.3 of the BC Act (the 'Assessment of Significance') will be drawn upon to determine whether there would be a significant effect on these species and hence whether a Species Impact Statement (SIS), or Biodiversity Development Assessment Report (BDAR; should the proponent elect that option) is required.

2.2.2 *Biodiversity Conservation Act* 2016 (BC Act)

The BC Act relates to the terrestrial environment and includes threatened species, ecological communities, key threatening processes and other protected animals and plants.

Section 7.3 of the BC Act contains a five-part test of significance for determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

Where a significant impact is likely to occur, the proponent must either opt into the NSW Biodiversity Offsets Scheme (BOS) and prepare a Biodiversity Development Assessment Report

(BDAR) or prepare a Species Impact Statement (SIS) for each significantly impacted BC listed entity.

BC Act-listed species and communities are addressed in **Sections 5.2** and **5.3** and **Appendix D**.

2.2.3 *Biosecurity Act* 2015

The Biosecurity Act aims to manage biosecurity risks from animal and plant pests and diseases, weeds, and contaminants in NSW. The Biosecurity Act imposes a general biosecurity duty to ensure that, so far as is reasonably practicable, any biosecurity risk is prevented, eliminated, or minimised. The proponent is required to manage the presence of weeds in the subject site.

2.2.4 *Local Land Services Act 2*013

The objects of the Act include 'to ensure the proper management of natural resources in the social, economic and environmental interests of the State, consistently with the principles of ecologically sustainable development. The Act regulates the clearing of native vegetation, however section 60(O)(b)(ii) excludes the need for consent under the LLS Act where the clearing is an activity carried out by a determining authority within the meaning of Part 5 of the EP&A Act 1979.

2.2.5 *Fisheries Management Act* 1994 (FM Act)

Part 7A of the FM Act along with schedules within the Act, list threatened aquatic and marine species, populations and ecological communities and key threatening processes which must be considered as part of obligations under Section 5.5 of the EP&A Act.

Section 199 of the FM Act states that a public authority (other than a local government authority) must, before it carries out or authorises the carrying out of dredging work or reclamation work—

(a) give the Minister written notice of the proposed work, and

(b) consider any matters concerning the proposed work that are raised by the Minister within 21 days after the giving of the notice (or such other period as is agreed between the Minister and the public authority).

A permit under Part 7 of the FM Act is also required for certain activities that could potentially obstruct the 'free passage of fish', in accordance with the definitions in Section 219 of the FM Act.

Refer to **Section 4.3** for further consideration of watercourses and requirements under the FM Act.

2.2.6 *Water Management Act* 2000 (WM Act)

The WM Act aims to provide for the 'sustainable and integrated management of the water sources of the state for the benefit of both present and future generations.'

The WM Act provides for the granting of various licenses and approvals, including for the use of water and water supply work. Additionally, the WM Act identifies provisions relating to 'controlled activities' carried out on 'waterfront land' (within 40 m of a riverbank, lake shore, or estuary's high water mark). Controlled activities include:

- erecting a building,
- carrying out works,
- removing material (e.g., plants and rocks),
- depositing material (e.g., gravel and fill),
- any activity which affects the quantity or flow of water in a water source.

Examples of controlled activities include:

- construction of watercourse crossings (e.g., bridges, bed level crossings),
- laying pipes and cables,
- sand and gravel extraction.

Public Authorities have an exemption under Clause 41 of the *Water Management (General) Regulation 2018*, therefore controlled activity approval is not required.

2.2.7 Dubbo Local Environmental Plan 2013

(1) This Plan aims to make local environmental planning provisions for land in the Dubbo Regional local government area in accordance with the relevant standard environmental planning instrument under section 3.20 of the Act.

(2) The particular aims of this Plan are as follows—

(aa) to protect and promote the use and development of land for arts and cultural activity, including music and other performance arts,

(a) to maintain the Dubbo Central Business District as the primary commercial centre for the Dubbo Regional local government area,

(b) to encourage residential development in West Dubbo,

(c) to encourage development that complements and enhances the unique character and amenity of the Dubbo Regional local government area,

(d) to provide high quality open spaces to meet the recreational needs of residents and visitors to the Dubbo Regional local government area,

(e) to conserve and protect the environmental and cultural heritage of the Dubbo Regional local government area,

(f) to make adequate provision for the development and improvement of cultural, educational, research and medical institutions,

(g) to ensure land zoned for industrial purposes is protected from development that is inconsistent with the objectives for development in the zone,

(h) to protect and conserve agricultural land, in recognition of the contribution of agriculture to regional economies,

(i) to restrict development in environmentally sensitive areas to minimise the risk of urban and natural hazards, including development on the floodplains of the Macquarie, Bell and Talbragar rivers and development on land at risk of salinity,

(j) to manage urban stormwater to prevent damage to downstream development,

(k) to implement ecologically sustainable development to conserve environmental resources for the benefit of current and future generations,

(l) to promote the integration of development and transport nodes to improve access to public transport and reduce dependence on private vehicles,

(m) to encourage diversity in housing to meet the changing needs of the population,

(n) to improve resilience to the effects of climate change.

The proposed subject site contains areas of high terrestrial biodiversity values, as per the Dubbo LEP (**Appendix A**). The application of the SEPP (Transport and Infrastructure) 2021 overrides the need to consider zoning controls, as developments covered by the SEPP (Transport and Infrastructure) 2021 are permissible on any land without consent. However, the SEPP (Transport and Infrastructure) 2021 provides consultation and notification provisions for certain interactions with Council-related infrastructure.

2.2.8 *State Environmental Planning Policy (Biodiversity and Conservation)* 2021

The *SEPP (Biodiversity and Conservation)* 2021 is the collation of biodiversity and conservation related SEPP. Chapters 3 and 4 aim to encourage the 'proper conservation and management of areas of natural vegetation that provide habitat for Koalas to ensure a permanent free-living population over their present range and reverse the current trend of Koala population decline'.

The SEPP only applies to developments under Part 4 of the EP&A Act, specifically excluding Part 5 activities, therefore the proposal is exempt.

The proposal's potential impacts to threatened species, including Koalas, have however been considered in this BAR (**Appendices D** and **F**).

3 METHODS

The ecological assessment was carried out in three stages:

1. Desktop searches and review of ecological databases and information to identify threatened species, populations or ecological communities listed in the BC Act, FM Act or the EPBC Act that have the potential to occur in the study area.

2. Field survey of the subject site for the purposes of:

   - collating lists of those plants present these being used to assist with the identification of the site' vegetation communities
   - determining the habitat structures present
   - determining habitat availability for fauna species recorded or expected to occur.

   Where a threatened species or community or habitat feature is identified, document the nature and extent of the protected matter and describe its 'viable local population' or occurrence. Searches for fauna species were conducted by overturning logs and rocks, searching in habitat features such as culverts and traces and signs of fauna were recorded such as scat and tracks.

3. Preparation of a written BAR that describes the impacts of the proposed activity on native vegetation and threatened species, populations and ecological communities, and provides recommendations to avoid, minimise and mitigate these impacts.

3.1 PERSONNEL

OzArk operates under NSW Department of Planning, Industry and Environment (DPIE) Scientific License 101908, NSW Department of Primary Industries (DPI) Accreditation as an Animal Research Establishment (accreditation number 53103), and the Secretary's Animal Care and Ethics Committee Animal Research Authority RVF21/954.

Field surveys were completed by Project Ecologists Dr Sylvester Obeng-Darko on the 29th of January 2025 and Project Ecologist Dr Alain Ngute on the 30th and 31st of January 2025. Reporting components were completed by Dr Sylvester A. Obeng-Darko, with quality control provided by Senior Ecologists Dr David Orchard and Dr Crystal Graham. Key details of personnel are provided in **Table 3-1**.

Table 3-1. Summary of OzArk personnel qualifications.

Name	Position	CV Details
Dr Alain Ngute	Project Ecologist	• Doctor of Philosophy (Landscape Ecology &Mgt) – University of the Sunshine Coast • Master of Research (Ecology and Wildlife Mgt) – University of Dschang • Master of Science (Ecology & Wildlife Mgt) – University of Dschang • Bachelor of Science (Zoology) – University of Dschang • First Aid CPR Training • WH&S Induction Training for Construction Work • Worker on Foot • 4WD Training
Dr Sylvester A Obeng-Darko	Project Ecologist	• Doctor of Philosophy (Plant Biology) – The University of Western Australia • Master of Science (Research) Biological Science – The University of Waikato, New Zealand • Bachelor of Science (Molecular Biology and Biotechnology – University of Cape Coast, Ghana • WH&S Induction Training for Construction Work
Dr Crystal Graham	Senior Ecologist	• BAM-accredited Assessor (BAAS#22024) • Postdoctoral Fellow – Smithsonian Tropical Research Institute • Doctor of Philosophy (Biology) – University of Sydney • Honours in Biology – University of Sydney • Bachelor of Advanced Science – University of Sydney • 4WD Training • First Aid Training • WH&S Induction Training for Construction Work • Worker at Heights Training
Dr David Orchard	Senior Ecologist	• BAM-accredited Assessor #BAAS21028 • Doctor of Philosophy (Agriculture) – Charles Sturt University • Graduate Diploma in Science (Botany) – University of New England • Bachelor of Arts (Honours)– Australia National University • First Aid Training • WH&S Induction Training for Construction Work • Rail Industry Worker Card

3.2 BACKGROUND RESEARCH

Preliminary assessments drew on local experience, previous reporting and information held on government databases and archives. Results of database searches were used to assist in identifying distributions, suitable habitats and known records of threatened species to increase the effectiveness of field investigations. Information sources reviewed included the following:

- NSW Government Web Map Service (WMS) layers for NSW Imagery (compiled imagery, NSW Property, NSW Base Map and NSW Topographic Map) (https://www.spatial.nsw.gov.au/).
- EPBC Protected Matters Search Tool (https://www.environment.gov.au/epbc/protected-matters-search-tool)
- NSW State Vegetation Type Map C2.0.M2.1 (https://datasets.seed.nsw.gov.au/dataset/nsw-state-vegetation-type-map)

- NSW DPI threatened fish indicative distribution maps (www.dpi.nsw.gov.au/fishing/species-protection/threatened-species-distributions-in-nsw/freshwater-threatened-species-distribution-maps)
- NSW BioNet Wildlife Atlas Vegetation classification (https://www.environment.nsw.gov.au/research/Visclassification.htm)
- NSW BioNet Threatened Biodiversity Data Collection (www.bionet.nsw.gov.au/)
- NSW BioNet Atlas (www.bionet.nsw.gov.au/)
- Register of Declared Areas of Outstanding Biodiversity Value (www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/about-threatened-species/critical-habitats)
- PlantNET, NSW Flora Online (www.plantnet.rbgsyd.nsw.gov.au/)
- NSW Department of Planning and Environment *Biodiversity Values Map* (https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap)
- Vulnerable Lands – Steep or Highly Erodible, Protected Riparian and Special Category land Mapping (https://datasets.seed.nsw.gov.au/dataset/vulnerable-land-protected-riparian73a9e)
- Acid Sulfate Soils Risk mapping (https://datasets.seed.nsw.gov.au/dataset/acid-sulfate-soils-risk0196c)
- Directory of Important Wetlands of Australia (DIWA) (https://www.environment.gov.au/water/wetlands/australian-wetlands-database/directory-important-wetlands)
- NSW wetlands mapping (https://datasets.seed.nsw.gov.au/dataset/nsw-wetlands047c7)

Database searches were undertaken before the field assessment to determine the predicted species and those threatened species previously recorded within 10 km of the subject site. The results of these searches led to the identification of key species for field survey effort and targeted searches. Results of the database searches are provided in **Appendix A**. A series of other background searches were performed to comply with legislative requirements (**Table 3-2**).

Table 3-2. Presence and/or proximity of environmental considerations.

Environmental Considerations	In the study area?
Land identified on the Biodiversity Values Map under the NSW *BC Act* 2016?	No
Area of Outstanding Biodiversity Value (AOBV) under the NSW *BC Act* 2016?	No
Critical habitat nationally?	No
An area reserved or dedicated under the *National Parks and Wildlife Act* 1974?	Yes
Is the proposal located within land reserved or dedicated within the meaning of the *Crown Lands Act* 1989 for preservation of other environmental protection purposes?	No
A World Heritage Area?	No

Environmental Considerations	In the study area?
Environmental Protection Zones in environmental planning instruments?	No
Lands protected under *SEPP (Biodiversity and Conservation)* 2021?	Yes, it does not apply to Part 5 developments
Land identified as wilderness under the *Wilderness Act* 1987 or declared as wilderness under the *National Parks and Wildlife Act* 1974?	No
Aquatic reserves dedicated under the *Fisheries Management Act* 1994?	No
Aquatic Threatened Ecological Community?	No
Wetland areas dedicated under the Ramsar Wetlands Convention?	No
Land subject to a conservation agreement under the *National Parks and Wildlife Act* 1974?	No
Land identified as State Forest under the *Forestry Act* 1916?	No
Acid sulphate area?	No
Protected riparian land?	Yes (**Figure 4-2**)
Mapped Key Fish Habitat?	Yes (**Figure 4-2**)

3.3 HABITAT ASSESSMENT

The results of the desktop review and the field assessment were collated and reviewed in the context of local ecological knowledge to determine the likelihood of occurrence of threatened species and ecological communities, and potential impacts of the proposal (**Appendix C**). For instance, some threatened species may be predicted to occur locally but, on assessment of the site, key habitat elements or conditions are not present, in which case the species is assessed as not being present or impacted.

The likelihood of occurrence of threatened species, populations or ecological communities was categorised as follows:

- 'Present' – the species was observed or has been previously recorded on the site.
- 'High' – a medium to high probability that a species uses the site, based on nearby records and suitable habitat being present.
- 'Moderate' – suitable habitat for a species occurs on the site, but the species has not been observed or previously recorded at the site.
- 'Low' – a very low likelihood that the species uses the site, based on lack of the preferred type and size of habitat.
- 'Absent' – habitat on-site and in the vicinity is unsuitable for the species.

The threatened species, populations, and ecological communities known or considered to have a moderate-high likelihood of occurring at the site, were then considered as to whether the extent and type of development would be likely to impact on them. Tests of significance were then completed for these species and ecological communities in accordance with the BC Act

(**Appendix D**), FM Act (**Appendix** E) and/or the assessment of significance under the EPBC Act (**Appendix F**), and the relevant guidelines for these assessments.

3.4 FIELD SURVEY

The objectives of the field survey were to:

- Identify native species and vegetation communities present.
- Describe the quality and value of the vegetation and the flora and fauna habitat at the development site.
- Determine if species, populations or ecological communities listed as threatened under the BC Act or EPBC Act are/may be present.
- Determine the significance of impact to any threatened entities present or likely to be present.

3.4.1 Vegetation surveys

Botanical surveys were conducted within, and up to 10 m beyond, the subject site. When surveying this area, the 'Random Meander Method' (Cropper 1993) was employed. This method involves conducting foot traverses through those sites that require investigation, during which time notes are made on the structure and floristic composition of the native vegetation present. The 'Random Meander Method' is employed until no new species have been recorded for at least 30 minutes. Plant identification followed nomenclature in the Royal Botanic Gardens PlantNet online database (Royal Botanic Gardens and Domain Trust, 2025).

Vegetation communities were classified based on the online NSW Master Plant Community Type Classification (NSW DCCEEW, 2023), which serves as the current state-wide system for identifying Plant Community Types (PCT). This classification system is used for vegetation mapping, development assessment and site planning purposes. It describes over 1,500 PCTs across the state, and groups the vegetation communities into vegetation Class and Formation / Sub-formation as per Keith (2004).

In this study PCTs were identified on the basis of the following inputs:

- NSW State Vegetation Type Map: C2.0.M2.1 (NSW DCCEEW, 2024a), which provides predictive mapping of PCTs in and around the subject site. This mapping is indicative only. It is not necessarily accurate at a fine scale for the purposes of the current study.
- Professional ecological knowledge about locally occurring vegetation types and landscape, soil, and topographic patterns, including transitions from one community to another and potential for intergrades between plant communities.
- Field survey results confirming the flora species present, vegetation structure, landscape position and soil type at the subject site and the extent and condition of native vegetation.

- The BioNet Vegetation Classification database was used to identify the candidate vegetation communities likely to be present based on the site conditions (flora species present, vegetation structure, bioregion, and landscape position and soil type) and the relevant published PCT descriptions.

If any of the PCTs were identified as having potential to be part of a TEC, the relevant identification guidelines (NSW Scientific Committee listing criteria and Commonwealth identification guides) were consulted to determine the status of the vegetation community on the subject site. These guidelines provide the identification criteria used to positively identify the community as being part of the TEC. Criteria includes location; species present; overstorey species; weed cover; number; and type of native species, including 'important' native species.

Plant identification followed nomenclature in the Royal Botanic Gardens PlantNet online database (Royal Botanic Gardens and Domain Trust, 2025).

When surveying the assessment area, a version of the Random Meander Method (Cropper 1993) was employed. This method entails traversing sites that require investigation by foot, during which notes are made on the structure and floristic composition of the native vegetation, as well as the availability of habitat for threatened species.

3.4.2 Fauna surveys

The subject site was searched for fauna and possible fauna habitat (e.g., hollow-bearing or nest-bearing trees) while undertaking floristic and habitat surveys. All habitat trees (i.e., hollow-bearing trees or trees containing nests) were GPS tagged. The size, number of hollows and/or type of nest were also recorded for each tree. Potential habitat such as rocks, logs, loose bark, and coarse woody debris was examined for cryptic species. Areas of suitable substrate were searched for animal tracks. Other evidence of fauna presence on the subject site, such as scats, feathers and sloughed skins were also recorded. Any culverts, crevices and structures were examined for nocturnal roosting fauna such as microbats.

Given the scope of works proposed, no targeted surveys such as live trapping, nocturnal searches, deployment of bat echolocation detectors and so forth, were carried out.

3.4.3 Aquatic surveys

Given the scope of the works, no formal aquatic surveys were conducted.

3.5 LIMITATIONS

This study is based upon the species data available at the time of the study, and the environmental conditions, season, and time constraints imposed by the project for the field survey. Specific limitations on this study include the following:

- The field survey was completed over three days. Owing to the short duration of the survey and the seasonal conditions at the time, the species list included (**Appendix B**) is not considered comprehensive as a greater diversity of species are likely to occur at the site.
- Fauna trapping, frog surveys, aquatic surveys, microbat ultrasonic call capture and analysis, and nocturnal spotlighting were not undertaken for the current assessment.

To overcome some of these limitations, a 'precautionary approach' for species presence has been adopted where required. If suitable habitat for a particular threatened species is present on the site or known to occur in the study area, then the species is assumed to also be present, and the impact assessment is completed on that basis (**Appendices D**-**F**).

The above-mentioned constraints were also considered when preparing the recommendations of avoiding, minimising, and mitigating potential impacts.

4 EXISTING ENVIRONMENT

4.1 BIOREGION

The subject site is located within the Pilliga and Talbragar Valley subregions of the Brigalow Belt South Bioregion, as well as the Inland Slopes subregion of the NSW South Western Slopes Bioregion, according to the Interim Biogeographic Regionalisation of Australia (IBRA) (Thackway & Cresswell, 1995; **Figure 1-1**). The wider search area encompasses the subregion and Bioregion mentioned above. The subregion is characterised by geology, landforms, soil types and vegetation as described in **Table 4-1**, **Table 4-2** and **Table 4-3**.

Table 4-1. Description of the Pilliga subregion of the subject site.

Bioregion	Brigalow Belt South
Subregion	Pilliga
Geology	Horizontal Jurassic quartz sandstones, limited shales, Tertiary basalt caps and plugs plus the sediments derived from these rocks.
Landforms	Stepped sandstone ridges with low cliff faces and high proportion of rock outcrop. Long gentle outwash slopes intersected by sandy stream beds and prior stream channels. A few patches of heavy clay. Includes the spectacular mountain landscape of volcanic domes, plugs and dykes in the Warrumbungles.
Soils	Shallow black earths and red loams on basalts. Extensive harsh texture contrast soils, linear patterns of deep yellow sand, stony red brown earths.
Vegetation	Shallow black earths and red loams on basalts. Extensive harsh texture contrast soils, linear patterns of deep yellow sand, stony red brown earths. White box with white cypress pine and kurrajong on the basalt hills. Blue-leaved ironbark, white gum, black cypress pine, whitewood, and rough-barked apple on stony sandstone plateau and streams. Narrow-leaved ironbark, white cypress pine, red stringy bark, patches of mallee and broom heath on gentler sandstone slopes. Pilliga box with grey box, poplar box, fuzzy box, bull oak, rosewood, wilga and budda on heavier soils in the west and north. River red gum lines all streams.

Table 4-2. Description of the Talbragar Valley subregion of the subject site.

Bioregion	Brigalow Belt South
Subregion	Talbragar Valley
Geology	Near horizontal Mesozoic quartz sandstone, conglomerates and shales with minor Tertiary basalt caps and extensive alluvial wash plains.
Landforms	Residual rocky hills, undulating long slopes and wash plains, wide valley floors with sandy streams.
Soils	Thin stony loams and texture contrast soils over most of the landscape with deeper sands and brown earths on valley floors.
Vegetation	Narrow-leaved ironbark, white cypress pine, white box on hills and slopes. Patches of black cypress pine, hill red gum, occasional kurrajong and scrubby acacia in rocky outcrops. Grey box, yellow box, rough-barked apple on valley floors. River red gum on larger streams and river oak on tributaries.

Table 4-3. Description of the Inland Slopes subregion of the subject site.

Bioregion	NSW South Western Slopes
Subregion	Inland Slopes
Geology	Ordovician to Devonian folded and faulted sedimentary sequences with inter-bedded volcanic rocks and large areas of intrusive granites.
Landforms	Steep, hilly and undulating ranges and granite basins. Occasional basalt caps, confined river valleys with terrace remnants.
Soils	Shallow stony soils on steep slopes, texture contrast soils grading from red subsoils on upper slopes to yellow subsoils on lower slopes. Alluvial sands, loams and clays.
Vegetation	Open forests and woodlands. Red stringybark on upper slopes with black cypress pine, kurrajong, red ironbark, white gum, white box, yellow box and Blakely's red gum on lower slopes. Merging west to yellow box, grey box and white cypress pine. Rough-barked apple on flats with river oak on upper tributaries and river red gum on lower and larger streams

4.2 NSW LANDSCAPES

The NSW (Mitchell) landscapes were mapped in 2002 to provide a framework for reporting reserve establishment and for determining over-cleared landscapes (Mitchell, 2002). These landscapes broadly describe areas of similar topography, geology, soils, and vegetation. The subject site occurs within the three landscapes the **Goonoo Slopes**, **Macquarie Alluvial Plains** and the **Geurie Granites**, while the study area further overlaps the **Macquarie Channels and Floodplains**, **Dubbo Basalts** and the **Boggy Cowal Alluvial Plains** landscapes (**Figure 4-1**).

Goonoo Slopes

Extensive undulating to stepped low hills with long slopes on sub-horizontal Triassic/Jurassic quartz sandstone, conglomerates, siltstone, shale and some coal. General elevation 300 to 500m with overall westerly slope, poorly defined drainage network, local relief to 30m. Stony yellow earths with sandstone outcrop on ridgelines to yellow harsh texture-contrast soils in shallow valleys. Broad-leaved ironbark (*Eucalyptus fibrosa* ssp. *fibrosa*) and black cypress pine (*Callitris endlicheri*) on ridges, broad-leaved ironbark, narrow-leaved ironbark (Eucalyptus crebra), red ironbark (*Eucalyptus sideroxylon*), fringe myrtle (*Calytrix tetragona*), spur-wing wattle (*Acacia triptera*), dainty phebalium (*Phebalium obcordatum*), daphne heath (*Brachyloma daphnoides*) on slopes with patches of green mallee (*Eucalyptus viridis*), Dwyer's mallee gum (*Eucalyptus dwyeri*) and broombush (*Melaleuca uncinata*). Grey box (*Eucalyptus microcarpa*), red ironbark (*Eucalyptus sideroxylon*), red stringybark (*Eucalyptus macrorhyncha*), fuzzy box (*Eucalyptus conica*) and Blakely's red gum (*Eucalyptus blakelyi*) with knob sedge (*Carex inversa*), and tall sedge (*Carex appressa*) along streams.

Over-clearing status: Not over-cleared. 66% of this landscape is estimated to have been cleared.

Macquarie Alluvial Plains

Holocene fluvial sediments of backplain facies of the Marra Creek Formation associated with the Macquarie River main alluvial fan and distributary stream system, relief 1 to 3m. Dark yellow-brown silty clay with patches of sand and carbonate nodules deposited from suspended sediments in floodwater, often with gilgai. Slightly elevated areas with red-brown texture-contrast soils. Open grasslands with scattered coolibah (*Eucalyptus microtheca*), black box (*Eucalyptus largiflorens*), river cooba (*Acacia stenophylla*), bimble box (*Eucalyptus populnea*), belah (*Casuarina cristata*), lignum (*Muehlenbeckia cunninghamii*) and myall (*Acacia pendula*).

Over-clearing status: Not over-cleared. 78% of this landscape is estimated to have been cleared.

Geurie Granites

Low ranges and rounded hills with common rock outcrop and tors on massive Devonian granite, general elevation 400 to 610m, local relief 180m. Gritty gradational red earth on the crests, red texture-contrast soil on upper slopes grading to yellow harsh texture-contrast soil along valley floors. Open forest of; red ironbark (*Eucalyptus sideroxylon*), white cypress pine (*Callitris glaucophylla*), red stringybark (*Eucalyptus macrorhyncha*), yellow box (*Eucalyptus melliodora*), Blakely's red gum (*Eucalyptus blakelyii*), and a shrubby understorey.

Over-clearing status: Not over-cleared. 74% of this landscape is estimated to have been cleared.

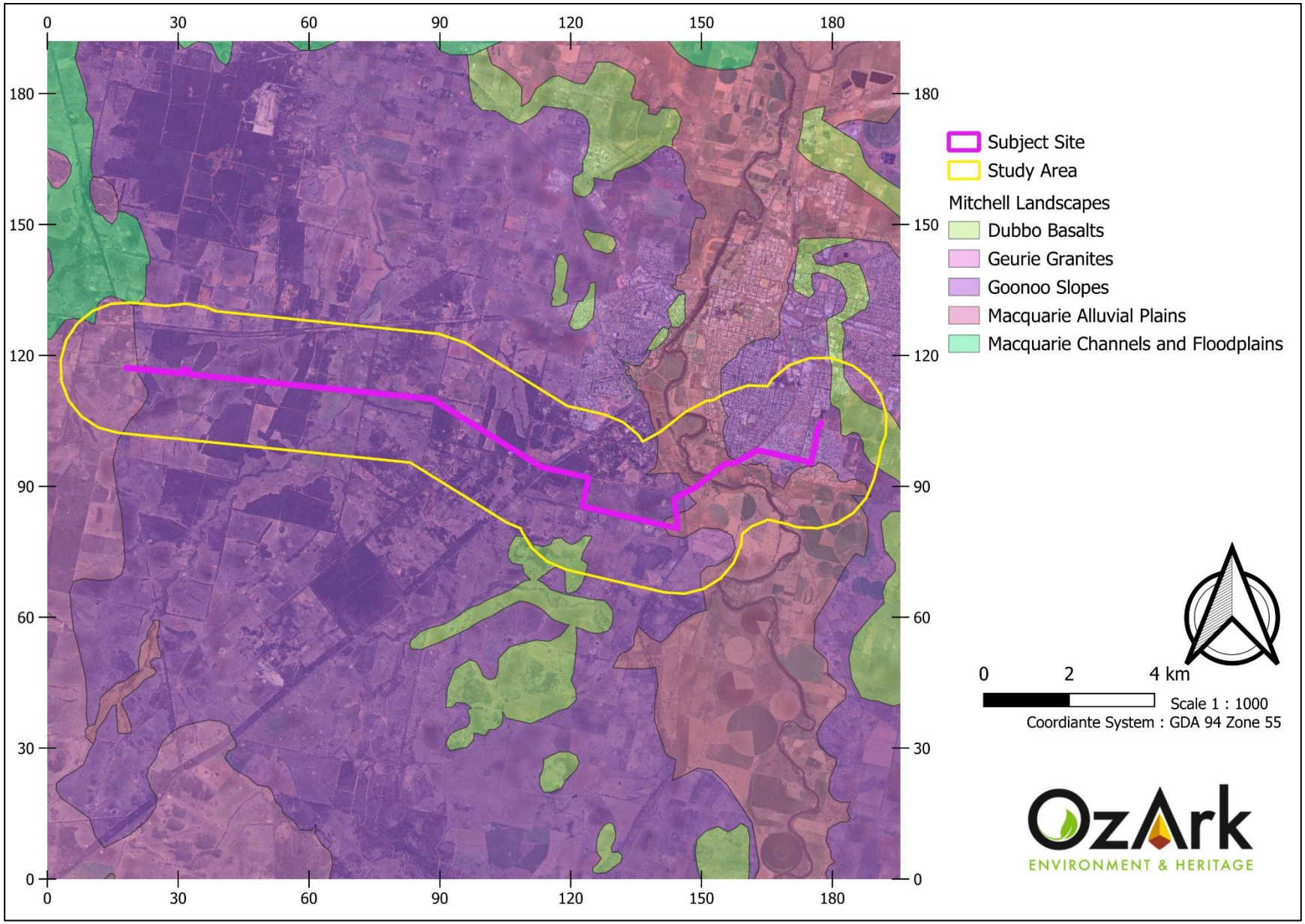


Figure 4-1. NSW (Mitchell) Landscapes within the study area.

4.3 WATERCOURSES

Within the subject site there is one major, perennial watercourse (Macquarie River) and 13 other non-perennial minor watercourses, including Whylandra Creek, that cross the subject site between poles 72 and 73. The thirteen minor watercourses comprise of seven Strahler 1st order, two Strahler 2nd order, two Strahler 3rd order and two Strahler 4th order watercourses that cross the alignment corridor (under the proposed power line; **Figure 4-3. Key Fish Habitat within the study area**). The Macquarie River contains Key Fish Habitat (KFH), as recognised by the Department of Primary Industries – Fisheries (DPI) and Protected Riparian Land (PRL), as per NSW Department of Climate Change, Energy and the Environment (NSW DCCEEW; **Figure 4-2**). Sections of the subject site fall within PRL, with two sections of the alignment corridor intersected by PRL—specifically between poles 23 and 24, and between poles 72 and 73. It is recommended that no mature native vegetation be removed outside of the existing overhead powerline corridor, within these PRL sections to avoid negative impacts to PRL.

Five threatened fish species or threatened populations are predicted to occur within the subject site or study area, largely in the Macquarie River (**Figure 4-3**).

- Silver Perch (*Bidyanus bidyanus*), listed as Vulnerable under the FM Act and Critically Endangered under the EPBC Act
- Southern Purple Spotted Gudgeon (*Mogurnda adspersa*), listed as Endangered under the FM Act
- Murray-Darling Basin population of Eel Tailed Catfish (*Tandanus tandanus*), listed as an Endangered population under the FM Act
- Western population of Olive Perchlet (*Ambassis agassizii*), listed as an Endangered population under the FM Act
- Trout cod (*Maccullochella macquariensis*), listed as endangered under both the FM Act and EPBC Act

However, the development will not directly interfere with the river at the crossing point within the alignment corridor, as the power lines will be suspended overhead. Accordingly, the proposal is not expected to impact any threatened fish species or populations. However, tests of significance were conducted under the FM Act to address any potential impact, should they arise (**Appendix E**).

Considering no dredging or reclamation works are required for the proposal and fish passage would not be blocked, the client is not required to give the Minister written notice of the proposed works. Provided that the mitigation methods in **Section 7** are adhered to, the proposal is unlikely to significantly impact aquatic species or habitats, including any threatened fish that may occur within the study area (**Appendix E**).

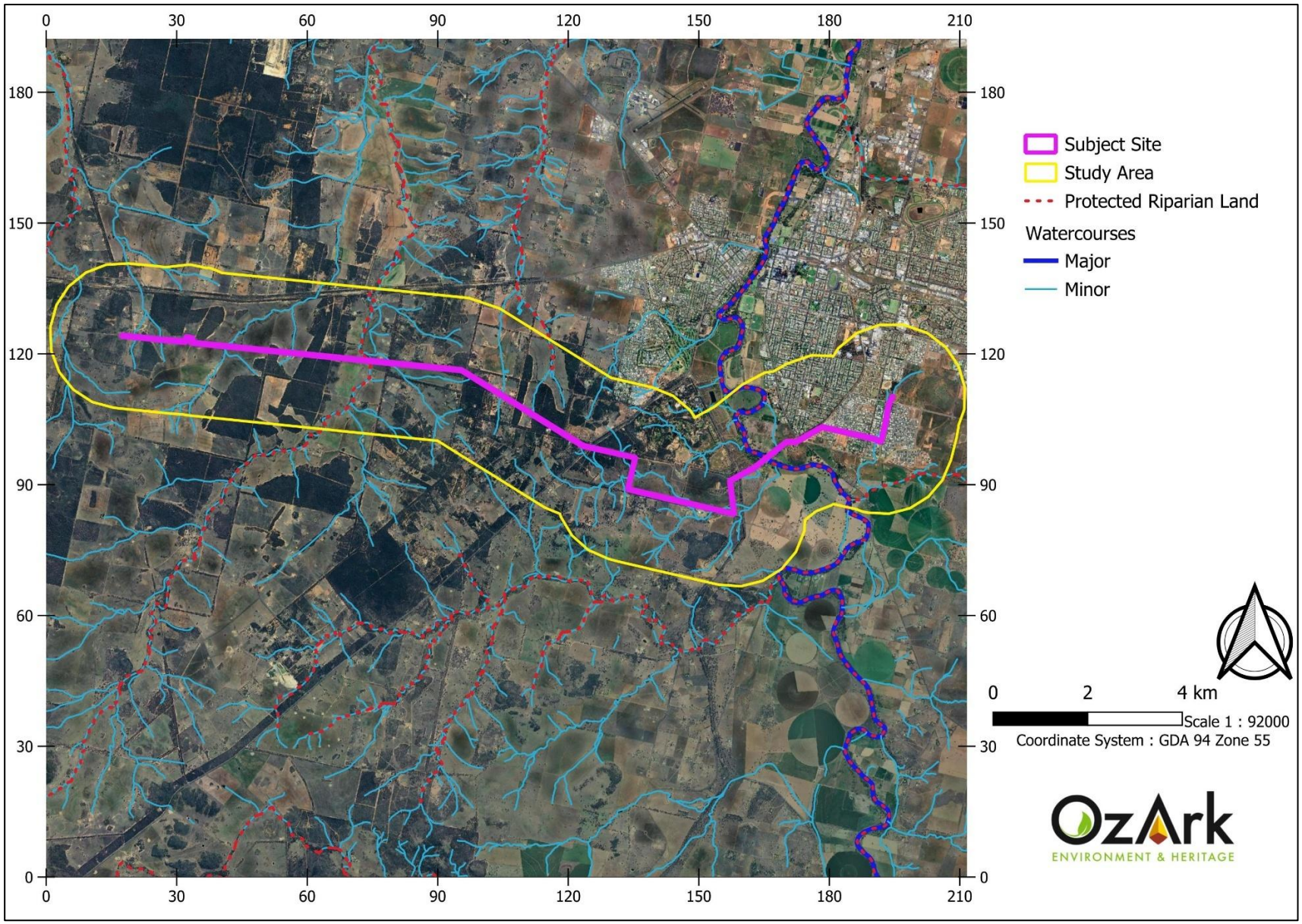


Figure 4-2. Watercourses within the study area

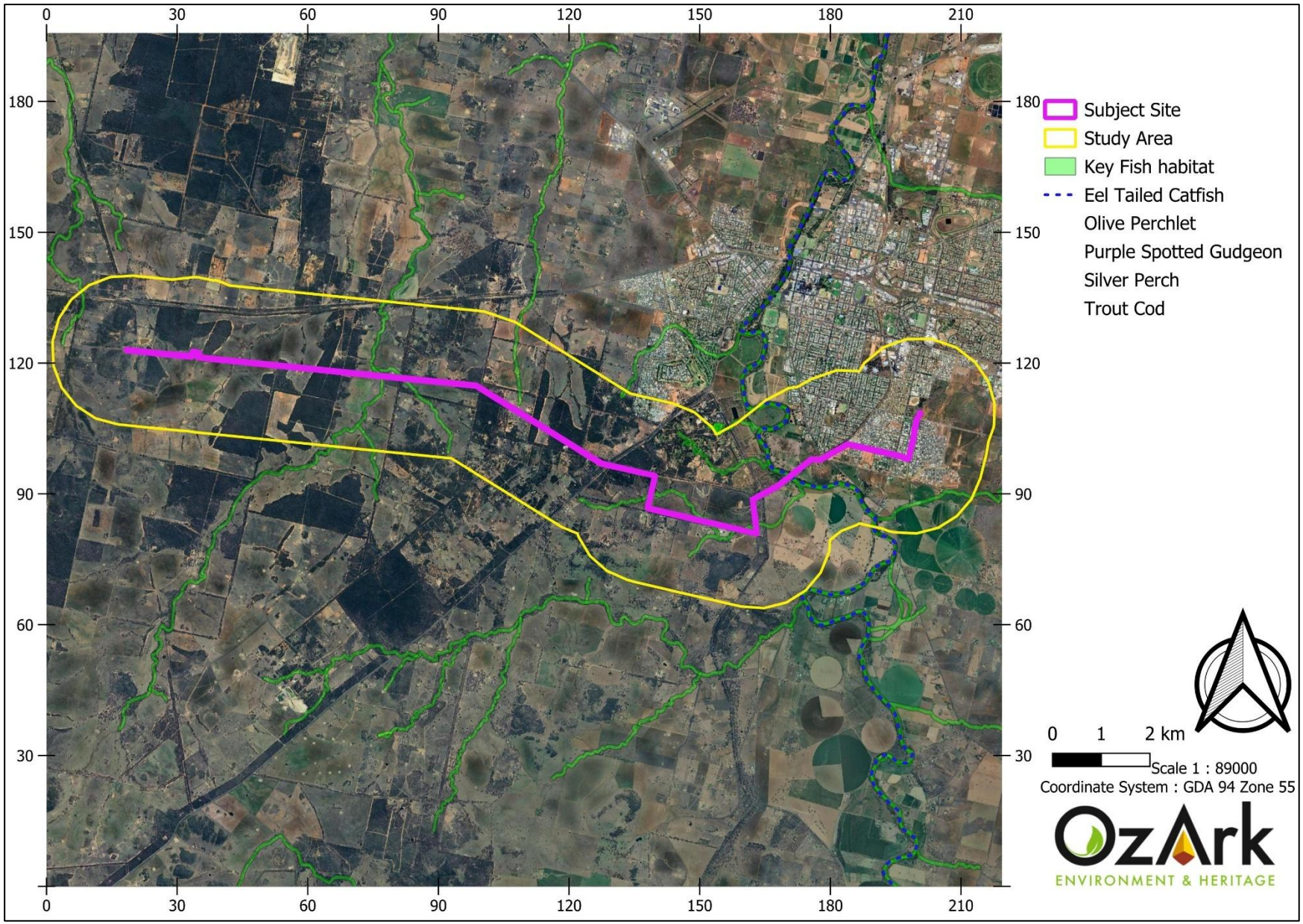


Figure 4-3. Key Fish Habitat within the study area.

4.4 GROUNDWATER DEPENDENT ECOSYSTEMS

Groundwater plays an important ecological role in directly and indirectly supporting terrestrial and aquatic ecosystems. Groundwater sustains terrestrial and aquatic ecosystems by supporting vegetation and providing discharge to channels, lacustrine and palustrine wetlands, and both the estuarine and marine environment. Aquifer ecosystems are inherently groundwater dependent (QLD Department of Environment and Heritage Protection, 2017).

The Bureau of Meteorology Atlas of Groundwater Dependent Ecosystems (GDEs) identified areas of low, and high potential GDEs (high GDEs along the Macquarie River) within the subject site. Additionally, medium and low potential GDEs are found within the broader study area (**Figure 4-4**; Bureau of Meteorology, 2017).

Given the relatively small scale of the construction required, no significant impacts on GDEs are anticipated. Mitigation measures to minimize any potential impacts are outlined in **Section 7.**

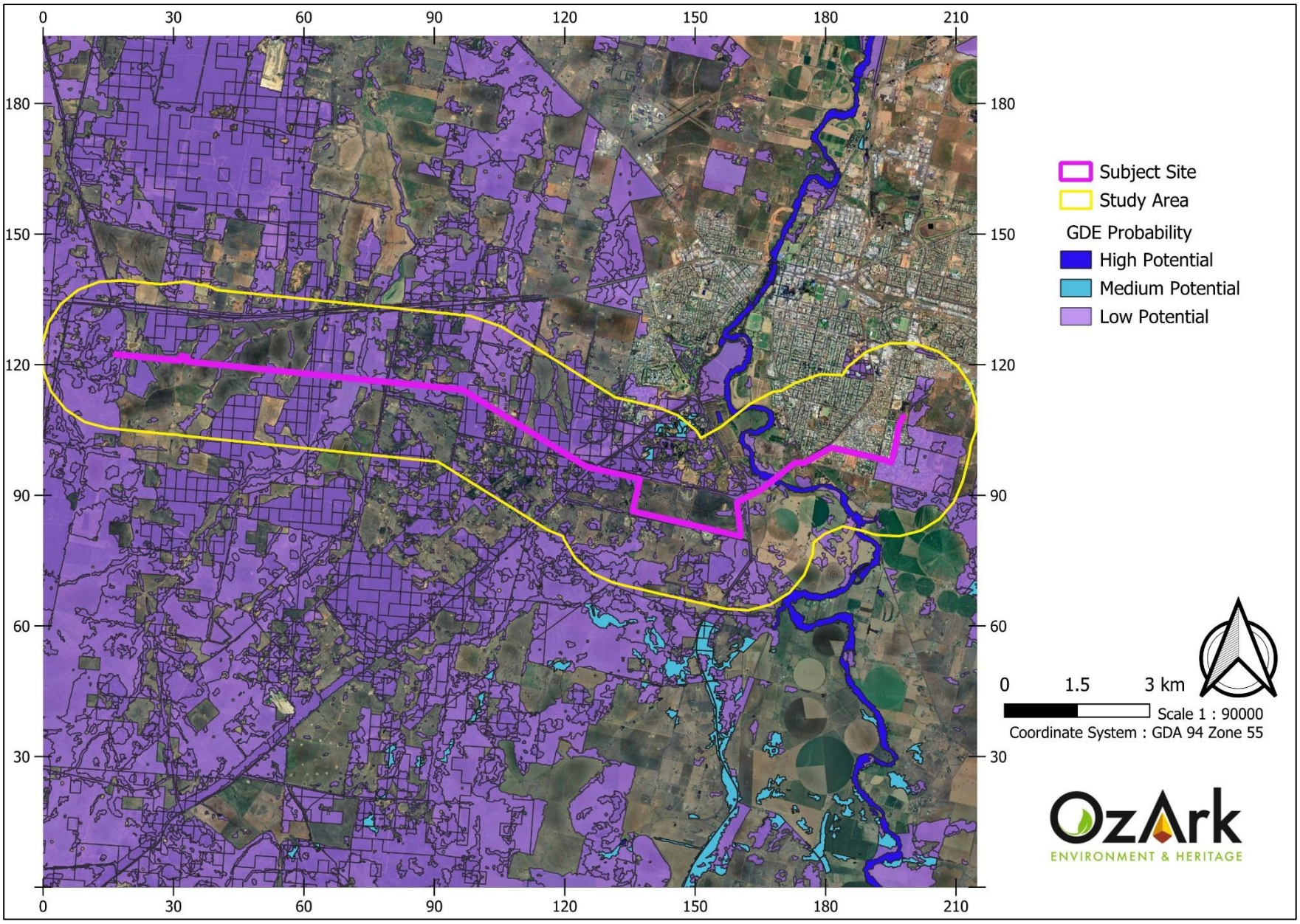


Figure 4-4. Groundwater-dependent ecosystems (GDEs) within the study area.

4.5 CLIMATE

The nearest operational weather station is located at Dubbo Airport AWS NSW (station 065070), which is approximately 8 km north of the subject site. Rainfall and temperature have been monitored at this station since 1994 and 1993, respectively.

The area experiences warm summers, with the highest mean maximum temperature of 33.5°C experienced in January. Temperatures in winter are mild to cool with the coldest temperatures being recorded in July, having an average minimum of 3.08°C and an average maximum of 15.7°C (**Figure 4-5**).

The average annual rainfall at this station is 591.03 mm. Rainfall peaks in March with mean rainfall of 66.8 mm, followed by November (62.4 mm), and December and January (both 60.1 mm). The lowest monthly rainfall occurs in August (37.2 mm), followed by May (38.4 mm), and April (39.5 mm).

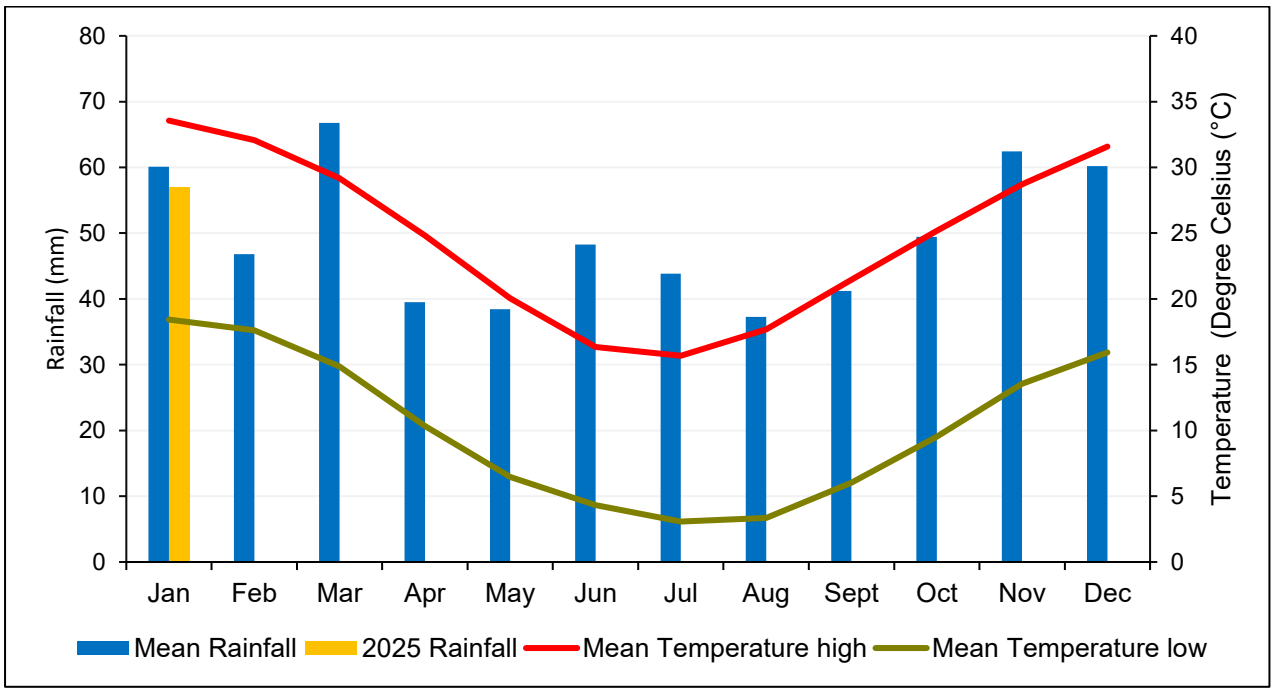


Figure 4-5. Climate statistics for Dubbo Airport AWS NSW (station 065070) showing mean minimum and maximum temperatures, and mean monthly rainfall (Bureau of Meteorology, 2025).

5 RESULTS

5.1 PLANT COMMUNITY TYPES

The NSW State Vegetation Map C2.0.M2.1 (DCCEEW 2025) mapping predicts that there would be 12 PCTs within close proximity to the subject site:

- PCT 45 – Plains Grass grassland on alluvial mainly clay soils in the Riverina Bioregion and NSW South Western Slopes Bioregion
- PCT 54 – Buloke - White Cypress Pine woodland in the NSW South Western Slopes Bioregion
- PCT 70 – White Cypress Pine woodland on sandy loams in central NSW wheatbelt
- PCT 74 – Yellow Box - River Red Gum tall grassy riverine woodland of NSW South Western Slopes Bioregion and Riverina Bioregion
- PCT 76 – Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
- PCT 78 – River Red Gum riparian tall woodland / open forest wetland in the Nandewar Bioregion and Brigalow Belt South Bioregion
- PCT 81 – Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion
- PCT 141 – Broombush - wattle very tall shrubland of the Pilliga to Goonoo regions, Brigalow Belt South Bioregion
- PCT 248 – Mixed box eucalypt woodland on low sandy-loam rises on alluvial plains in central western NSW
- PCT 267 – White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion
- PCT 469 – White Cypress Pine - Narrow-leaved Ironbark - Buloke grassy open forest of the Dubbo region, southern Brigalow Belt South Bioregion
- PCT 471 – Dwyer's Red Gum - Black Cypress Pine - ironbark low woodland on sandstone hillcrests in the Dubbo - Gilgandra region, south-western Brigalow Belt South Bioregion

The field survey encountered seven of the predicted PCTs (70, 74, 78, 81, 248, 267, and 469) and one PCT which was not predictively mapped (PCT 26 - Weeping Myall open woodland of the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion) within the subject site. Several of these PCTs are associated with threatened ecological communities, which are described in detail in **Section 5.2**.

Most of the subject site contains an existing overhead powerline with a cleared corridor. This corridor is dominated by non-native vegetation and/or bare ground, with native vegetation

occurring in isolated patches along the corridor. However, no previously cleared corridor occurs within the TWPZ, where a section of the powerline is to be realigned.

The area of each PCT within the subject site is provided in **Table 5-1** and their extent is mapped within **Figure 5-1** to **Figure 5-7**. Representative photographs of the PCT are provided in **Appendix B**, along with a list of all flora species encountered.

Table 5-1. Confirmed extent of each Plant Community Type (PCT) within the subject site.

PCT ID	PCT Name	Extent within Subject Site (ha)
26	Weeping Myall open woodland of the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion	0.10
70	White Cypress Pine woodland on sandy loams in central NSW wheatbelt	1.01
74	Yellow Box - River Red Gum tall grassy riverine woodland of NSW South Western Slopes Bioregion and Riverina Bioregion	1.24
78	River Red Gum riparian tall woodland / open forest wetland in the Nandewar Bioregion and Brigalow Belt South Bioregion	0.27
81	Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion	0.43
248	Mixed box eucalypt woodland on low sandy-loam rises on alluvial plains in central western NSW	1.84
267	White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion	12.38
469	White Cypress Pine - Narrow-leaved Ironbark - Buloke grassy open forest of the Dubbo region, southern Brigalow Belt South Bioregion	0.60
Total native vegetation		17.87
Non-native vegetation, bare ground, existing road surfaces, and the cleared corridor for overhead powerline		69.94
Total		**87.81**

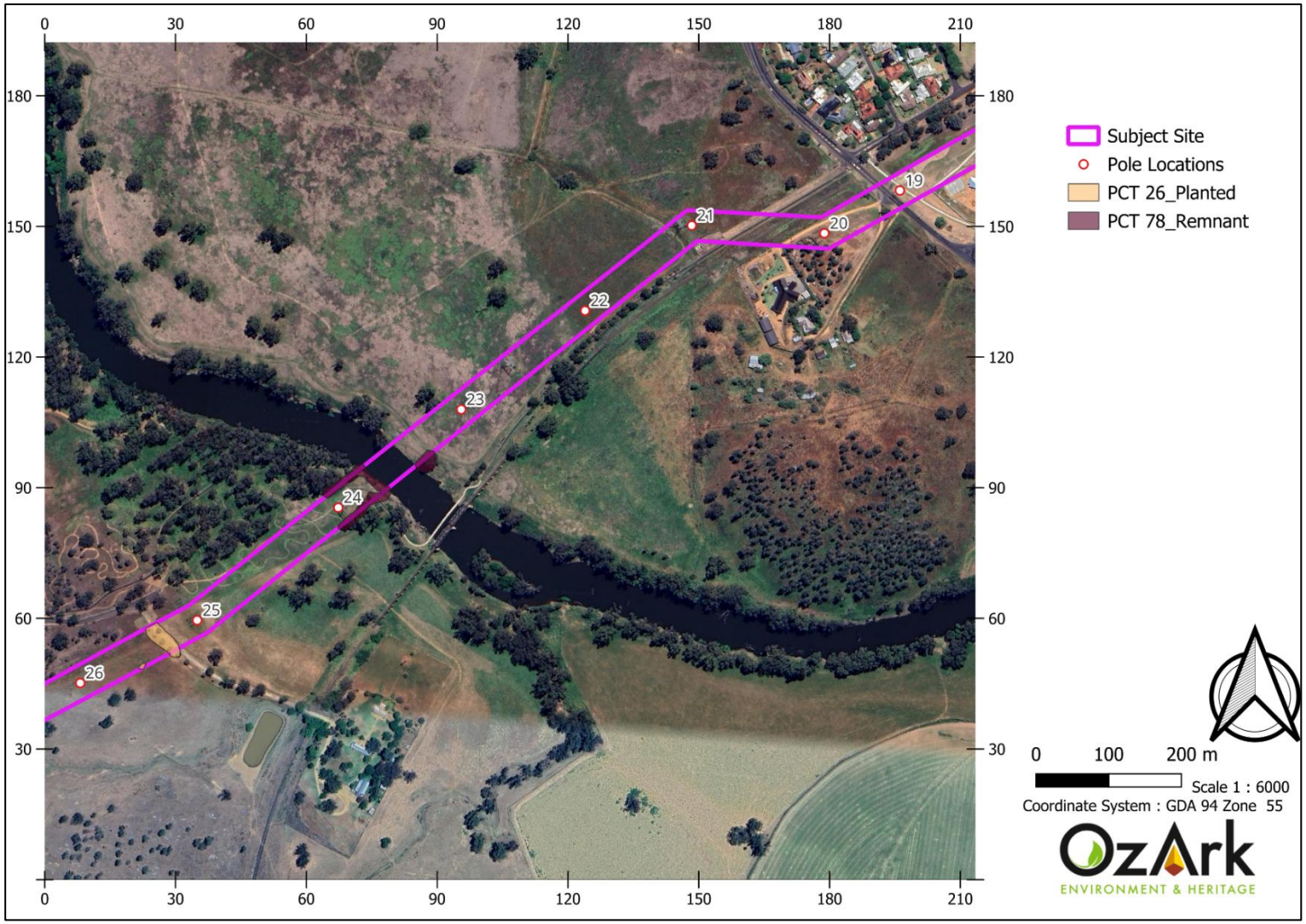


Figure 5-1. Location of confirmed Plant Community Types (PCTs) within the subject site (Pole 19 – 26).

Note: the ecological assessment did include poles 1-19 due to no vegetation removal, and prior disturbance of the area for creation of drainage swales and subdivision infrastructure.

Figure 5-2. Location of confirmed Plant Community Types (PCTs) within the subject site (Pole 27 – 38).

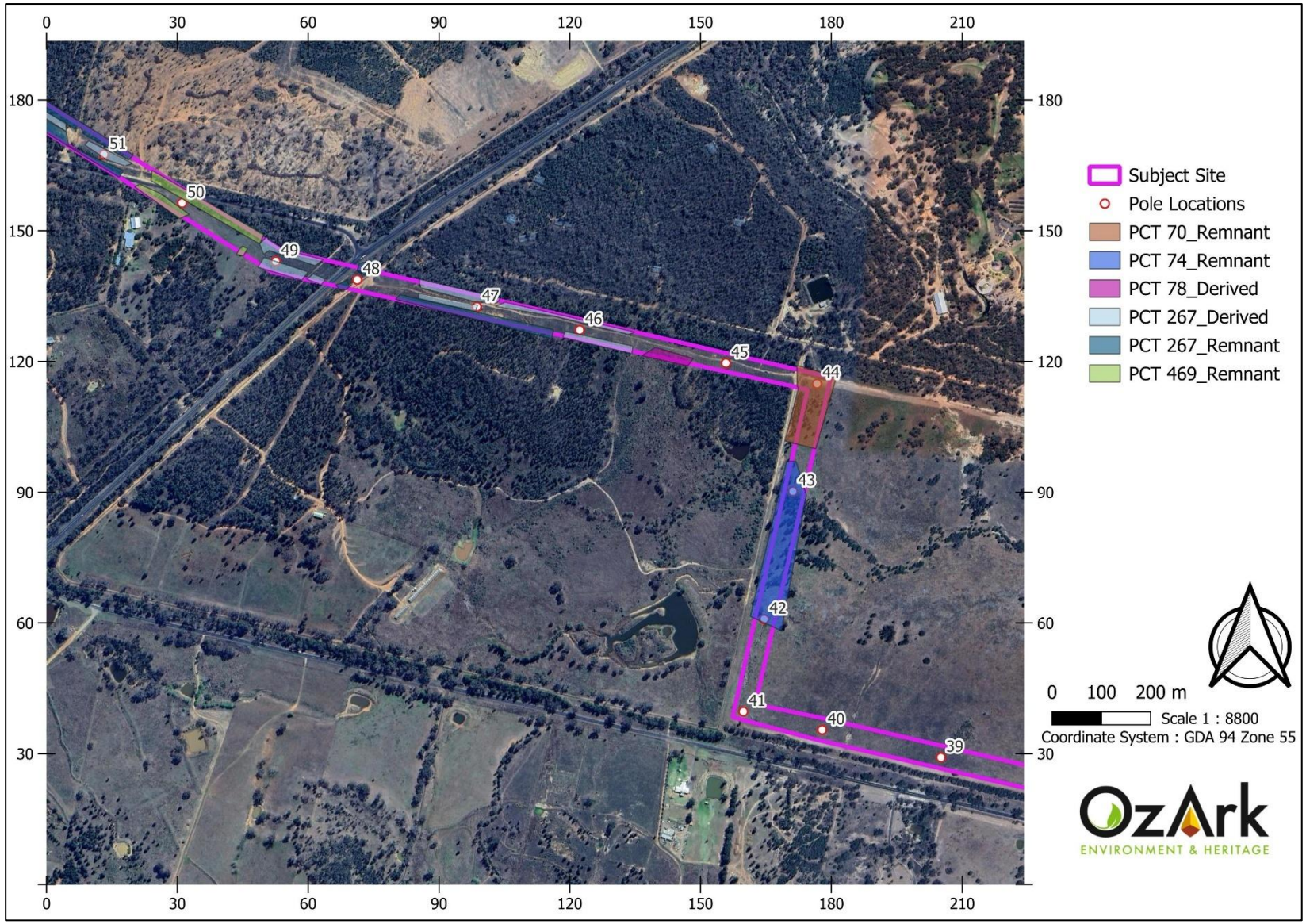


Figure 5-3. Location of confirmed Plant Community Types (PCTs) within the subject site (Pole 39 – 51).

Figure 5-4. Location of confirmed Plant Community Types (PCTs) within the subject site (Pole 52 – 62).

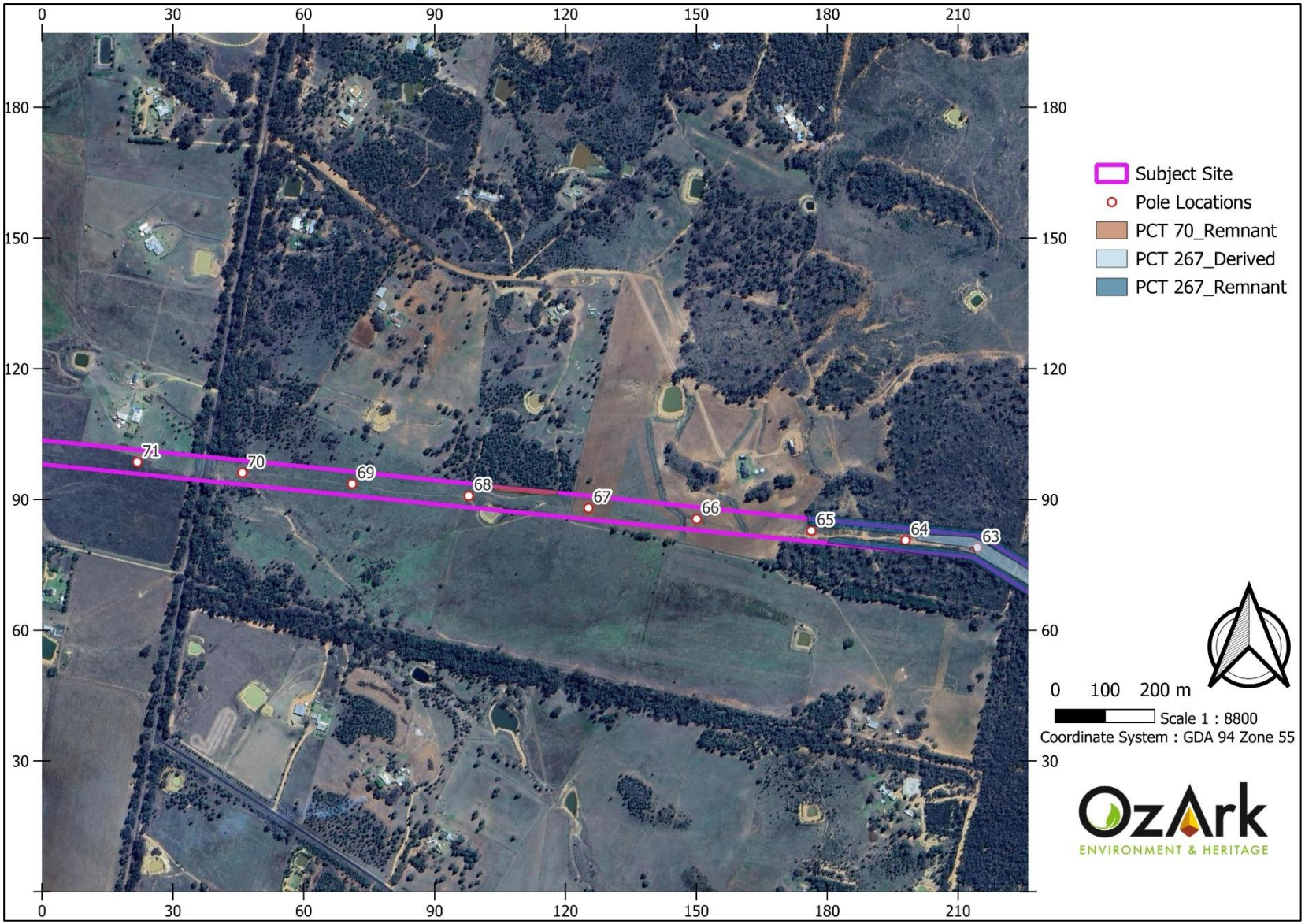


Figure 5-5. Location of confirmed Plant Community Types (PCTs) within the subject site (Pole 63 – 71).

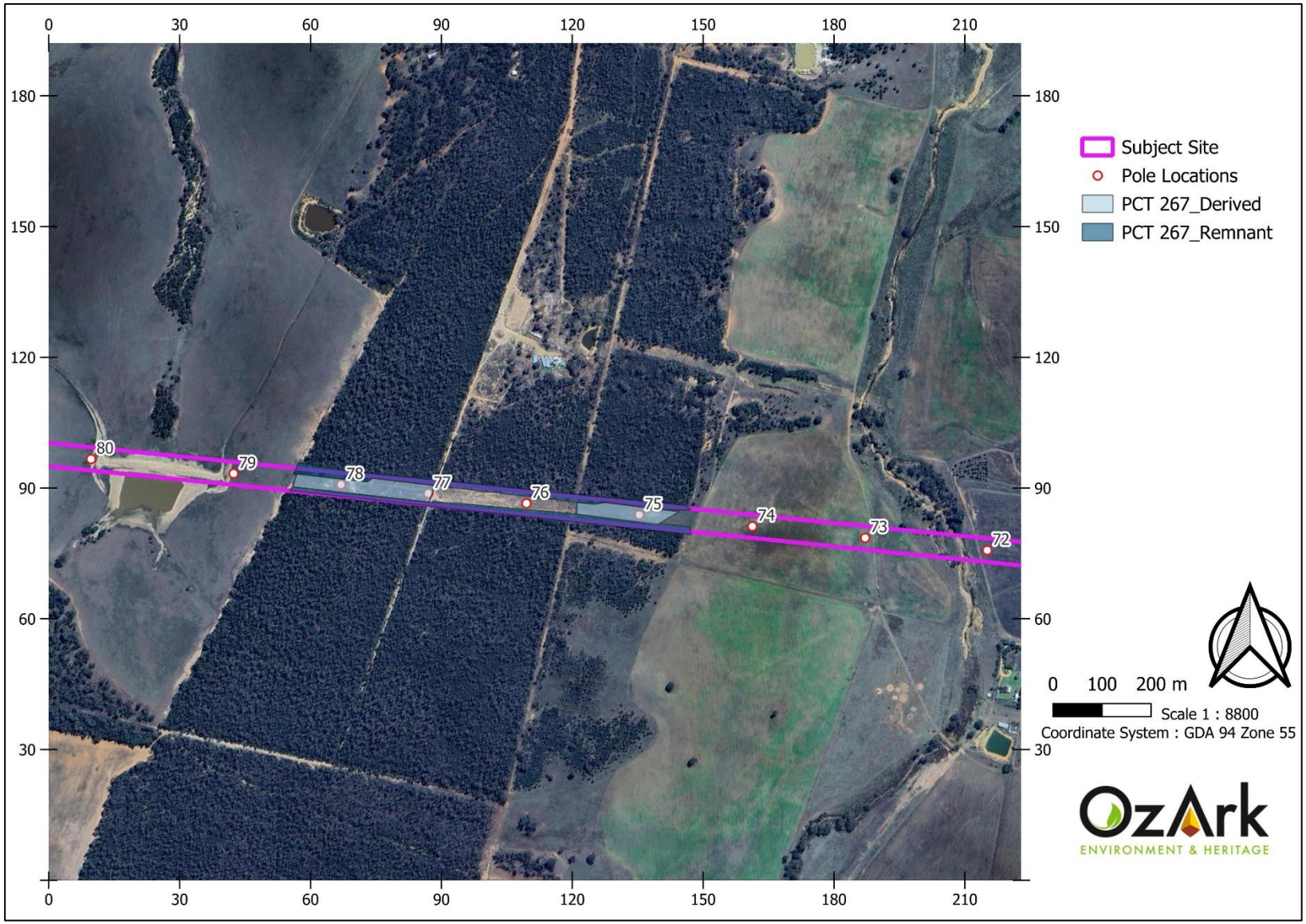


Figure 5-6. Location of confirmed Plant Community Types (PCTs) within the subject site (Pole 72 – 80).

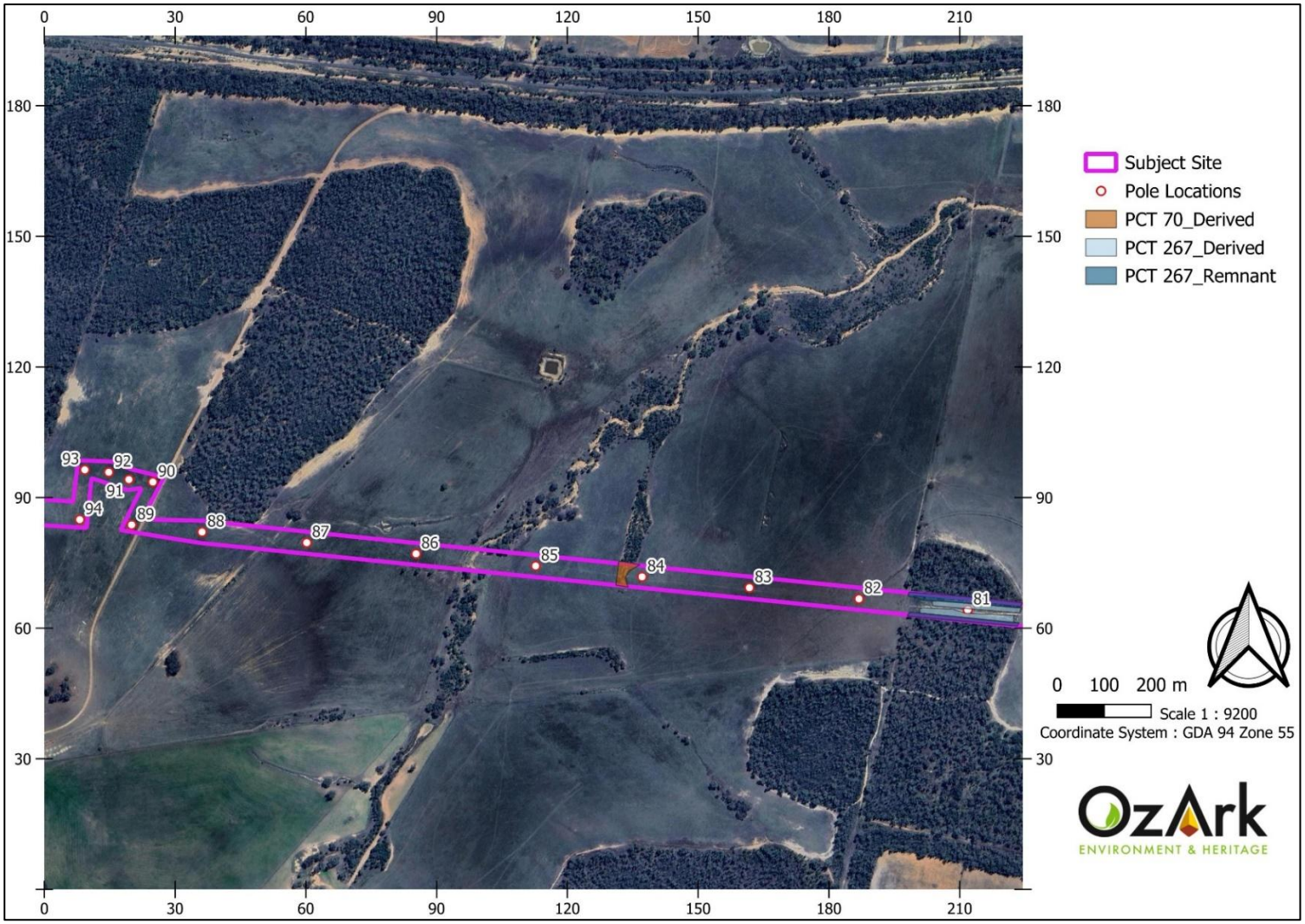


Figure 5-7. Location of confirmed Plant Community Types (PCTs) within the subject site (Pole 81 – 84).

Note: the ecological survey did not extend beyond pole 84, as beyond pole 84 the project enters the project footprint of the FGSF. This area will be disturbed by the solar farm activities, and where exclusion zones exist in the FGSF approval, no vegetation removal will be required beyond the existing overhead cleared corridor.

5.2 THREATENED ECOLOGICAL COMMUNITIES

According to the BioNet Vegetation Classification Database, many of the PCTs encountered have associated TECs (**Table 5-2**). Vegetation within the subject site was assessed against the conditional criteria for each BC Act- listed or EPBC Act -listed TEC known, or predicted, to occur within the relevant IBRA Subregions. TEC determinations are given below and in **Appendix H**.

Table 5-2. Threatened Ecological Communities associated with the Plant Community Types within the Subject Site.

PCT Name	Act	Listing Status	TEC Name
26	BC Act	EEC	Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions
	EPBC Act	EEC	Weeping Myall Woodlands
70	-	-	-
74	BC Act	CEEC	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions
	EPBC Act	CEEC	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland
78	-	-	-
81	BC Act	EEC	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions
	EPBC Act	EEC	Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
248	BC Act	CEEC	Artesian Springs Ecological Community in the Great Artesian Basin
	BC Act	EEC	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions
	EPBC Act	EEC	Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
267	BC Act	EEC	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions
	BC Act	CEEC	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions
	EPBC Act	EEC	Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
	EPBC Act	CEEC	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland
469	-	-	-

The patch of PCT 26 was assessed against the final determination criteria for the BC Act-listed EEC, *Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes Bioregions*. This patch is located within the relevant IBRA bioregion, and *Acacia pendula* is the dominant species present, which confirms the presence of the EEC. Although the patch lacked some characteristic vegetation—such as the typical open layer of chenopods and other woody shrub species—the criteria specify that the presence of *Acacia pendula* alone is sufficient to meet the definition of the EEC. Therefore, the BC Act-listed EEC is present and as such up to **0.10 ha** would be impacted by the proposal. The location of this TEC recorded during the field survey is shown as PCT 26 in **Figure 5-1**. Conversely, PCT 26 did not meet the criteria for the EPBC Act-listed EEC *Weeping Myall Woodlands*, as the patch lacked a native understorey (**Appendix H**).

The patch of PCT 74 was assessed against the listing criteria for the BC Act-listed CEEC, *White Box - Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions*. The vegetation within the patch is predominantly composed of *Eucalyptus albens*, *Eucalyptus blakelyi*, and *Callitris glaucophylla*, and is situated along a non-permanent watercourse within the subject site. As the PCT occurs within the relevant IBRA bioregion, and as the canopy is dominated by a combination of the characteristic species, the BC Act-listed CEEC is considered to be present within the subject site; consequently, up to **1.24 ha** will be impacted. The location of the BC Act-listed CEEC is shown as PCT 74 on **Figure 5-3**. However, when assessed against the criteria of the EPBC Act- listed CEEC, *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*, the local occurrence of the PCT 74 could be excluded under the listing requirements. Although the patch exceeds 0.1 ha, it lacks more than 12 native understory species (excluding grasses) and does not contain an important species. Further assessment confirmed the patch is over 2 ha but does not contain an average of 20 or more mature trees per hectare. Therefore, PCT 74 does not qualify as the EPBC Act-listed CEEC in this instance (**Appendix H**).

All patches of PCT 81 were assessed against the determination criteria of the BC Act listed EEC, *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions* as well as the EPBC Act listed EEC, *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia*. This BC Act listing applies to all open forests or woodlands where Grey Box is the dominant species, provided the site falls within the IBRA bioregions identified in the EEC title. In this case, the subject site falls within the Brigalow Belt South Bioregion. As no minimum size threshold has been identified for the BC Act-listed EEC, the listing should be considered applicable to isolated Grey Box trees. The listing also applies to derived grasslands lacking

canopy species, provided evidence suggests the site formerly supported a Grey Box-dominated community. Grey Box was dominant within this PCT, and the subject site is in one of the IBRA Bioregions specified in the EEC description. Therefore, the BC Act-listed EEC is present and as such up to **0.43 ha** will be impacted. The location of the BC Act-listed EEC recorded during the field survey is shown as PCT 81 in **Figure 5-2**. Conversely, PCT 81 did not meet the criteria for the EPBC Act-listed EEC *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia*. Though the patch was bigger than 2 ha, it does not satisfy the requirement of more than 50% of the ground layer being comprised of perennial native species (**Appendix H**).

All patches of PCT 248 were assessed against the determination criteria of the BC Act listed CEEC: *Artesian Springs Ecological Community in the Great Artesian Basin*. This BC Act listing applies to the ecological community naturally confined to artesian springs at the southern and western edges of the Great Artesian Basin in northwestern NSW. Since the subject site lies outside the Great Artesian Basin and does not contain the vegetation assemblage associated with this TEC, the listing can be considered absent from the site. However, the BC Act listed EEC: *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions* can be considered present and as a result **1.84 ha** of this TEC would be impacted. The listing applies to isolated Grey Box trees and also to derived grasslands that lack canopy species, provided there is evidence suggesting the site previously supported a Grey Box-dominated community. Grey Box was dominant within this PCT, and the subject site is located within one of the IBRA bioregions specified in the EEC description. The location of the BC Act-listed TEC recorded during the field survey is shown as PCT 248 in **Figure 5-2**. PCT 248 did not fit the criteria for the EPBC Act listed EEC: *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia*. Specifically, the patch lacked the minimum eight trees per hectare containing hollows and at least 20 lives trees per hectare with a diameter greater than 12 cm at 1.3 m above ground level (**Appendix H**).

All patches of PCT 267 were assessed against the determination criteria of the BC Act listed EEC, *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions*. The TEC is found within the IBRA bioregion. As no minimum size threshold has been identified, the listing should be considered applicable to isolated Grey Box trees. The listing also applies to derived grasslands lacking canopy species, provided evidence suggests the site formerly supported a Grey Box-dominated community. Grey Box is dominant within this PCT and the subject site is in one of the IBRA Bioregions specified in the EEC description. Therefore, the BC Act-listed EEC is present and as such up to **12.38 ha** will be impacted (shown as PCT 267 on **Figure 5-3 - Figure 5-7**). PCT 267 was also assessed against the criteria for the EPBC Act-listed EEC: *Grey Box (Eucalyptus microcarpa) Grassy*

Woodlands and Derived Native Grasslands of South-eastern Australia. The local occurrence of PCT 267 did not meet the criteria for being considered an example of this EEC as patches of the community possessed greater than 30% non-grass weed cover (**Appendix H**).

PCT 267 is additionally associated with the BC Act-listed CEEC *White Box - Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions*. In the western parts of its range (Keith 2004), White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland is typically dominated by *E. albens*, although *E. melliodora* and *E. blakelyi* may be co-dominant in some instances. However, as *E. microcarpa* was dominant in PCT 267, the BC Act-listed CEEC does not occur on the subject site. Similarly, as *E. microcarpa* was the most common tree species in PCT 267, it does not fit the criteria for the EPBC Act-listed CEEC: *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (**Appendix H**).

5.3 THREATENED SPECIES AND POPULATIONS

A review of the Threatened Species Profiles database revealed that 167 threatened flora and threatened or migratory fauna species or populations, listed under the BC or EPBC Act, are known or predicted to occur within the Pilliga and Talbragar Valley Subregions of the Brigalow Belt South Bioregion, as well as the Inland Slopes Subregions of the NSW South Western Slopes Bioregion. Based on proximity of past records, habitat requirements, and the results of the field survey, 88 threatened flora and threatened or migratory fauna species or populations were assessed as having a moderate-high likelihood of occurring within the proposal site (**Appendix C**); these are listed in **Table 5-3**.

A total of 40 fauna species and 85 flora species were observed during the field survey (**Appendix B**). None of the species encountered during the field survey was identified as threatened under the BC or EPBC Act. Due to the short duration of the surveys, and the lack of detailed targeted surveys for threatened species, non-detection of a species cannot be considered as confirmation of the absence of that species from the subject site.

Table 5-3. BC, FM and/or EPBC Act-listed threatened and migratory species or populations with potential to be impacted by the proposal.

Scientific Name	Common Name	NSW Status *	Comm Status +	Records within 10km
Ambassis agassizii	Western Population of Olive Perchlet	E2,P		0
Bidyanus bidyanus	Silver Perch	V,P	CE	0
Mogurnda adspersa	Southern Purple Spotted Gudgeon	E1,P		1
Tandanus tandanus	Murray Darling Basine Population of Eel Tailed Catfish	E2,P		0
Maccullochella macquariensis	Trout Cod	E1,P	E	2

Scientific Name	Common Name	NSW Status *	Comm Status +	Records within 10km
Crinia sloanei	Sloane's Froglet	E1,P	E	0
Anseranas semipalmata	Magpie Goose	V,P		6
Anthochaera phrygia	Regent Honeyeater	E4A,P, 2	CE	21
Aphelocephala leucopsis	Southern Whiteface	V,P	V	2
Apus pacificus	Fork-tailed Swift	P	C,J,K	2
Ardeotis australis	Australian Bustard	E1,P		0
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V,P		5
Burhinus grallarius	Bush Stone-curlew	E1,P		1
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	V,P,2	V	23
Chthonicola sagittata	Speckled Warbler	V,P		26
Circus assimilis	Spotted Harrier	V,P		23
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V,P	V	16
Daphoenositta chrysoptera	Varied Sittella	V,P		4
Ephippiorhynchus asiaticus	Black-necked Stork	E1,P		0
Epthianura albifrons	White-fronted Chat	V,P		1
Falco subniger	Black Falcon	V,P		9
Gallinago hardwickii	Latham's Snipe	V,P	V,J,K	3
Glossopsitta porphyrocephala	Purple-crowned Lorikeet	V,P,3		0
Glossopsitta pusilla	Little Lorikeet	V,P		8
Grantiella picta	Painted Honeyeater	V,P	V	1
Grus rubicunda	Brolga	V,P		0
Haliaeetus leucogaster	White-bellied Sea-Eagle	V,P		1
Hamirostra melanosternon	Black-breasted Buzzard	V,P,3		0
Hieraaetus morphnoides	Little Eagle	V,P		19
Hirundapus caudacutus	White-throated Needletail	V,P	V,C,J,K	8
Lathamus discolor	Swift Parrot	E1,P	CE	2
Lophochroa leadbeateri	Pink Cockatoo	V,P,2	E	4
Lophoictinia isura	Square-tailed Kite	V,P,3		6
Melanodryas cucullata cucullata	South-eastern Hooded Robin	E1,P	E	2
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V,P		3
Neophema chrysostoma	Blue-winged Parrot	V,P	V	2
Neophema pulchella	Turquoise Parrot	V,P,3		10
Ninox connivens	Barking Owl	V,P,3		11
Ninox strenua	Powerful Owl	V,P,3		1
Oxyura australis	Blue-billed Duck	V,P		2
Pachycephala inornata	Gilbert's Whistler	V,P		0
Petroica boodang	Scarlet Robin	V,P		0
Petroica phoenicea	Flame Robin	V,P		2
Polytelis swainsonii	Superb Parrot	V,P,3	V	36
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	V,P		213

Scientific Name	Common Name	NSW Status *	Comm Status +	Records within 10km
Rostratula australis	Australian Painted Snipe	E1,P	E	4
Stagonopleura guttata	Diamond Firetail	V,P	V	9
Stictonetta naevosa	Freckled Duck	V,P		0
Tringa stagnatilis	Marsh Sandpiper	P	C,J,K	11
Tyto novaehollandiae	Masked Owl	V,P,3		1
Acacia ausfeldii	Ausfeld's Wattle	V		0
Austrostipa wakoolica	A spear-grass	E1	E	0
Commersonia procumbens		V	V	3
Cullen parvum	Small Scurf-pea	E1		0
Dichanthium setosum	Bluegrass	V	V	0
Digitaria porrecta	Finger Panic Grass	E1		0
Diuris tricolor	Pine Donkey Orchid	V,P,2		17
Homoranthus darwinioides	Fairy Bells	V	V	1
Indigofera efoliata	Leafless Indigo	E1,3	E	10
Lepidium aschersonii	Spiny Peppercress	V	V	0
Monotaxis macrophylla	Large-leafed Monotaxis	E1		0
Pilularia novae-hollandiae	Austral Pillwort	E1,3		0
Pomaderris queenslandica	Scant Pomaderris	E1		0
Prasophyllum sp. Wybong		P	CE	0
Pterostylis cobarensis	Greenhood Orchid	*V,P,2*		*0*
Swainsona murrayana	Slender Darling Pea	V	V	0
Swainsona recta	Small Purple-pea	E1	E	0
Swainsona sericea	Silky Swainson-pea	V		0
Tylophora linearis		V	E	2
Cercartetus nanus	Eastern Pygmy-possum	V,P		0
Chalinolobus dwyeri	Large-eared Pied Bat	E1,P	E	0
Chalinolobus picatus	Little Pied Bat	V,P		6
Dasyurus maculatus	Spotted-tailed Quoll	V,P	E	1
Miniopterus orianae oceanensis	Large Bent-winged Bat	V,P		7
Myotis macropus	Southern Myotis	V,P		0
Nyctophilus corbeni	Corben's Long-eared Bat	V,P	V	1
Petaurus australis	Yellow-bellied Glider	V,P	V	0
Petaurus norfolcensis	Squirrel Glider	V,P		1
Petrogale penicillata	Brush-tailed Rock-wallaby	E1,P	V	0
Phascogale tapoatafa	Brush-tailed Phascogale	V,P		0
Phascolarctos cinereus	Koala	E1,P	E	7
Pseudomys novaehollandiae	New Holland Mouse	P	V	0
Pteropus poliocephalus	Grey-headed Flying-fox	V,P	V	32
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V,P		9
Sminthopsis macroura	Stripe-faced Dunnart	V,P		0
Vespadelus troughtoni	Eastern Cave Bat	V,P		0
Aprasia parapulchella	Pink-tailed Legless Lizard	V,P	V	0

Scientific Name	Common Name	NSW Status *	Comm Status +	Records within 10km
Hoplocephalus bitorquatus	Pale-headed Snake	V,P		0

***NSW Status:** P=Protected, V=Vulnerable, E1=Endangered, E2=Endangered population, E4A=Critically endangered 2=Category 2 sensitive species, 2=Category 2 sensitive species, 3=Category 3 sensitive species.
+ Comm. Status: C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable.

5.4 ENDANGERED AQUATIC ECOLOGICAL COMMUNITIES

Endangered aquatic ecological communities are determined by the NSW Fisheries Scientific Committee and are listed under the FM Act as aquatic systems that have undergone a very large reduction in ecological function, geographic distribution, or genetic diversity, and continue to be affected by a threatening process (NSW Department of Primary Industries, 2016).

The subject site is located within the endangered aquatic ecological community: *The Darling River Endangered Ecological community* (**Figure 5-8**). This community includes all fish and aquatic invertebrates within all natural rivers, creeks, streams and associated lagoons, billabongs, lakes, wetlands, paleochannels, floodrunners, effluent streams and the floodplains of the Darling River within NSW (DPI Primefact 2007). Consequently, the community occurs within the subject site. A test of significance conducted in accordance with the FM Act concluded that the proposal would not constitute a significant impact on this EEC (**Appendix E**).

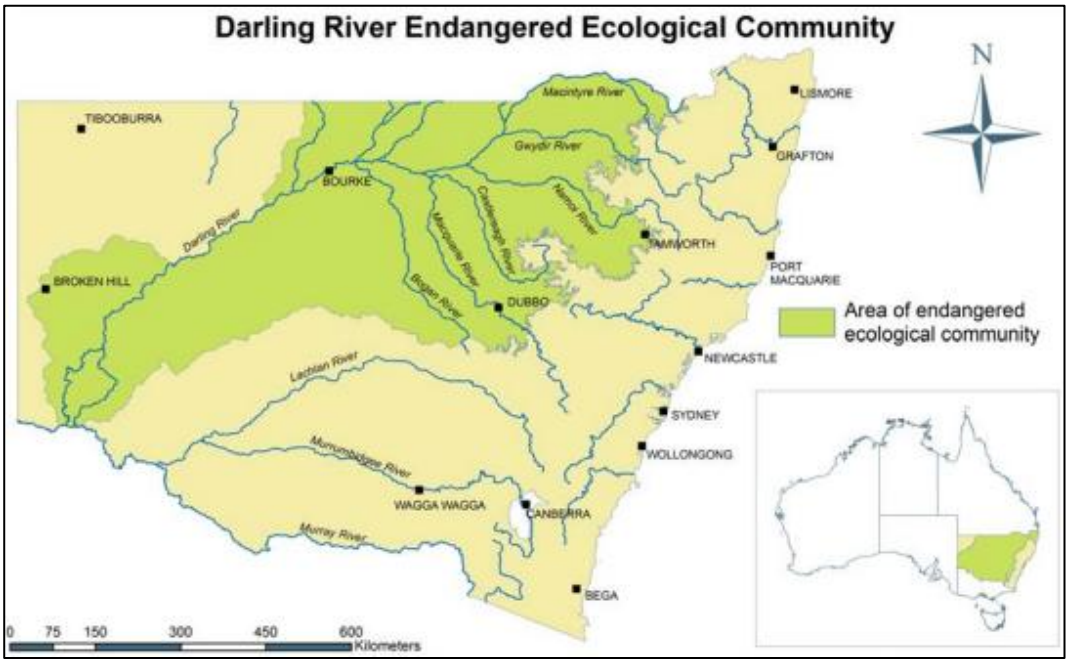


Figure 5-8. Distribution of Darling River Endangered Ecological Community (DPI 2007).

5.5 HABITAT TREES AND FEATURES

Within the subject site, between poles 32 and 39, there are three hollow-bearing trees—two Grey Box (*Eucalyptus microcarpa)* and one River Red Gum (*Eucalyptus camaldulensis*) —that contain

a total of three small hollows (S, 5-10 cm), two medium hollows (M, 10-20 cm), and one large hollow (L, 20-30 cm) (**Figure 5-9**). Additionally, between poles 32 and 33 two trees contain bird nests. Finally, between poles 45 and 46, bilby burrows are present (within TWPZ), and an aggregate of rocks is observed between poles 63 and 64. All the potential habitat features have been indicated in **Figure 5-9**.

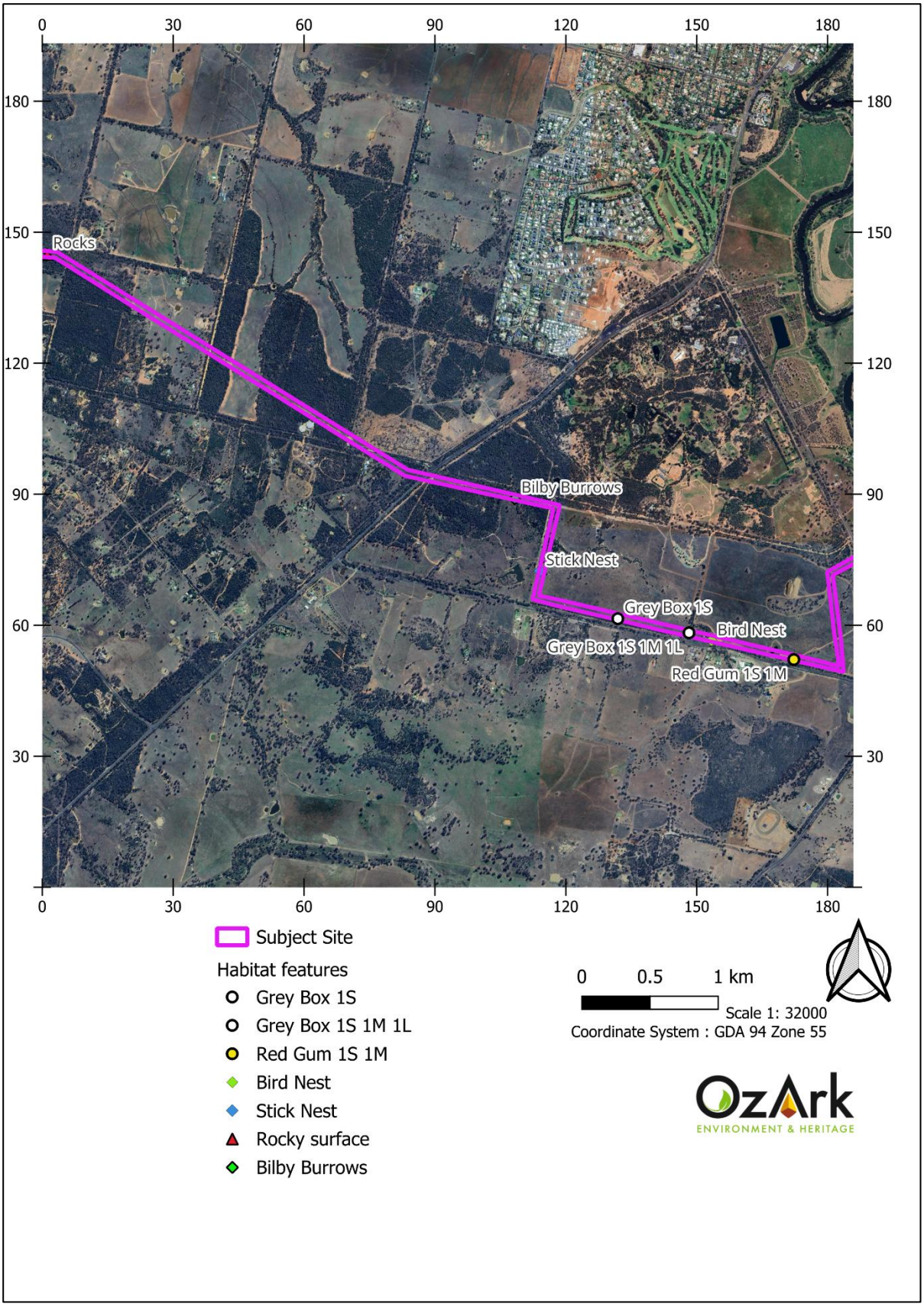


Figure 5-9. Location of habitat features.

5.6 WILDLIFE CONNECTIVITY CORRIDORS

The site mainly consists of disturbed vegetation associated with the rural nature of the land and the existing overhead powerline cleared corridor, with some remaining native stands located between poles 32 and 44. There is an unpaved access track running beneath the powerlines, except for the diversion within the TWPZ, which describe the section between poles 32 to 44. In the section between poles 28 and 44 within the TWPZ, where new poles will be installed, measures will be taken to minimize impacts on vegetation and habitat trees. Considering the prior disturbance to the subject site, it is unlikely that the proposal will significantly worsen the existing fragmentation to a point where habitat connectivity would be affected.

5.7 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

Under the environmental assessment provisions of the EPBC Act, Matters of National Environmental Significance (MNES) and impacts on Commonwealth land are required to be considered to assist in determining whether the proposal should be referred to the Australian Government.

The EPBC Act protected matters search has identified four wetlands of international importance, six TECs, 47 threatened species, 12 migratory species and 23 marine species that could possibly occur in the study area (**Appendix A**). No entities listed under the EPBC Act are likely to be significantly impacted by this proposal (**Appendix F**). A summary of these matters and whether the proposal is likely to impact them is provided in **Table 5-**.

Table 5-4. Impacts to Matters of National Environmental Significance and Commonwealth land.

Consideration	Potential impact?
Any impact on a listed threatened species or communities?	Yes (non-significant, **Appendix F**)
Any impacts on listed migratory species?	Yes (non-significant, **Appendix F**)
Any impacts on a Ramsar wetland of international importance?	No
Any impacts on a Commonwealth marine environment?	No
Any impacts on a World Heritage property?	No
Any impacts on a National Heritage place?	No
Any impacts on the Great Barrier Reef Marine Park?	No
Does the proposal involve a nuclear action (including uranium mining)?	No
Any impact on a water resource, in relation to coal seam gas development and large coal mining development?	No
Additionally, any impact (direct or indirect) on Commonwealth land?	No

6 IMPACT ASSESSMENT

6.1 DIRECT IMPACTS

6.1.1 Impacts on native vegetation and threatened ecological communities

The subject site is 87.81 ha in area, of which 17.87 ha consists of native vegetation, the remainder was comprised of non-native vegetation, bare ground, and the existing road surface. The maximum potential extent of TECs likely to be impacted by the proposal is 15.99 ha; of these, 1.24 ha are BC Act-listed CEECs and 14.75 ha are BC Act-listed EECs (**Table 6-1**).

Table 6-2. Maximum potential extent of TECs to be impacted.

PCT Name	Act	Status	TEC Name	Total area (ha)
26	BC Act	EEC	Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions	0.10
74	BC Act	CEEC	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	1.24
81	BC Act	EEC	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	0.43
248	BC Act	EEC	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	1.84
267	BC Act	EEC	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	12.38
Total area with potential to be impacted				**15.99**

6.1.2 Impacts to threatened fauna and associated habitat

Sixty-nine threatened or migratory fauna species or populations listed under the BC, FM and/or EPBC Act were considered to have a moderate, or high, chance of occurring on the subject site (**Table 5-3**). None of the threatened species were encountered within the subject site during the survey.

Three hollow-bearing trees were recorded within the subject site, along with two trees containing nests. Additionally, Bilby burrows were observed within TWPZ and piles of aggregate rocks occurred towards the western extent of the subject site. If habitat trees and rocks are to be removed, it is recommended a pre-clearance survey is conducted and a trained wildlife handler /fauna spotter catcher is present when clearing to ensure no species are harmed during the

construction process (see **Section 7.2**). Also, a member of TWPZ should be present to supervise works around the Bilby burrows if animals are within the area at the time of construction.

Tests of significance were conducted for all 69 species (**Appendices D-E**). The results of these tests concluded that provided the recommended mitigation measures are followed, the proposal would not constitute a significant impact on these threatened or migratory fauna.

6.1.3 Impacts to threatened flora

Nineteen threatened flora species listed under the BC and/or EPBC Act were considered to have a moderate, or high, chance of occurring on the subject site (**Table 5-3**). Although no threatened flora species were recorded during the field survey, non-detection is not confirmation of absence, particularly given the short duration of the survey. The BC and EPBC Act tests of significance were applied (**Appendices D** and **F**), where relevant, and the results concluded that the proposal would not constitute a significant impact on these threatened flora species.

6.1.4 Injury and mortality to fauna

During the construction phase of the proposal, the removal of vegetation within the subject site has the potential to disturb or injure fauna. In addition, fauna may become trapped in or may choose to shelter in machinery that is stored in the study area overnight. If these animals were to remain inside the machinery, or under the wheels or tracks, they may be injured once the machinery is in use. Mitigation measures designed to reduce injury and mortality of fauna are provided in **Section 7.**

6.2 INDIRECT IMPACTS

6.2.1 Wildlife connectivity and habitat fragmentation

The subject site spans approximately 17 km of existing cleared corridor, along which the current overhead powerline runs, except for the section within the TWPZ easement, where a new corridor needs to be created. With the understanding that minimal clearing will occur, and for the protection of biodiversity and wildlife habitat, fragmentation due to the proposal will be kept at a minimum. It is unlikely that the proposal will exacerbate any of the existing fragmentation to an extent where it will impact the connectivity between habitats. Mitigation measures designed to reduce the impact of the proposal on wildlife connectivity and habitat fragmentation are provided in **Section 7**.

6.2.2 Edge effects on adjacent native vegetation and habitat

The proposal site is in an area that is currently subject to a moderate level of edge effects from the cleared corridor for the overhead powerline. The clearance of vegetation will exacerbate the impacts of existing edge effects. These may result from changes in abiotic factors (e.g., the

microclimate) or from biotic factors associated with colonisation. Weed encroachment, which is a significant edge effect, is considered further below.

6.2.3 Invasion and spread of weeds

Proliferation of weed and pest species is an indirect impact of proposal activities. The most likely causes of weed dispersal and importation associated with the proposal include earthworks, movement of soil, and attachment of seed (and other propagules) to vehicles and machinery. Mitigation measures designed to limit the spread of weeds are provided in **Section 7**.

Of the 33 exotic plant species recorded during the field survey, nine are listed as High-threat Exotic species (HTE). Two species are listed as Weeds of National Significance (WoNS), with Coolatai Grass (*Hyparrhenia hirta*) also being a Priority Weed (PW) within the Central West LLS region (**Table 6-1**).

Table 6-3. Significant weeds recorded during the site survey.

Scientific Name	Common Name	HTE	WoNS	PW
Carthamus lanatus	Saffron Thistle	Yes	No	No
Cyperus eragrostis	Umbrella Sedge	Yes	No	No
Eragrostis curvula	African Lovegrass	Yes	No	No
Fraxinus angustifolia	Desert Ash	Yes	No	No
Heliotropium amplexicaule	Blue Heliotrope	Yes	No	No
Hyparrhenia hirta	Coolatai Grass	Yes	No	Yes
Lycium ferocissimum	African Boxthorn	Yes	Yes	No
Opuntia tomentosa	Velvet Tree Pear	Yes	Yes	No
Paspalum dilatatum	Paspalum	Yes	No	No

HTE – High threat Exotic weed according to the BAM (Yes/No), [2]WoNS – Weed of National Significance (Yes/No), [3]PW – Priority Weed for the LLS Region.

6.2.4 Invasion and spread of pests

The study area is likely already habitat for a range of pest species, such as European red fox (*Vulpes vulpes*), feral cats (*Felis catus*), feral pigs (*Sus scrofa*) and feral rabbits (*Oryctolagus cuniculus*). Mitigation measures designed to limit the spread of pests are provided in **Section 7.**

6.2.5 Invasion and spread of pathogens and disease

Several pathogens known from NSW have the potential to impact on biodiversity as a result of their movement and infection during construction. Of these, three are listed as a key threatening process under either the EPBC Act and/or BC Act including:

- Dieback caused by *Phytophthora* (Root Rot; EPBC Act and BC Act)

- Infection of frogs by amphibian chytrid fungus causing the disease chytridiomycosis (EPBC Act and BC Act)
- Introduction and establishment of exotic Rust Fungi of the order Pucciniales on plants of the family Myrtaceae (BC Act).

These pathogens were not observed or tested for in the study area. The most likely causes of pathogen dispersal and importation associated with the proposal include earthworks, movement of soil, and attachment of plant matter to vehicles and machinery. Mitigation measures designed to limit the invasion and spread of pathogens and disease are provided in **Section 7**.

6.2.6 Noise, light, and vibration

Some noise and vibration impacts will occur during the construction phase of this proposal. No additional impacts are expected during the operational phase of this proposal.

6.3 CUMULATIVE IMPACTS

The potential biodiversity impacts of the proposal must be considered as a consequence of the construction and operation of the proposal within the existing environment. Rather than acting in isolation, this proposal will be an additive contributor to biodiversity loss. The incremental effects of multiple sources of impact (past, present, and future) are referred to as cumulative impacts and provide an opportunity to consider the proposal within a strategic context.

In general, the accumulating impacts of historic vegetation clearing for agriculture, rural development, and development and maintenance of infrastructure have contributed to the loss of biodiversity in the region. While the impacts associated with the proposal may not themselves be significant, they nevertheless represent a contribution to the ongoing decline in biodiversity values within the region. Within the Dubbo LGA alone there are more than 20 determined projects (eight from road construction and other ancillary work) that will be impacting and contributing to the loss of biodiversity.

6.4 IMPACT SUMMARY

Based on the assessment above, the proposal would not have a significant impact on biodiversity, including predicted or known populations of threatened or migratory species.

Separate assessments of significance were undertaken under the differing impact significance criteria of the BC, FM and EPBC Act (**Appendices D** to **F**); these assessments concluded that the proposal would not significantly impact on threatened entities. However, opportunities to avoid and minimise impacts should be considered in finalising the proposal.

7 AVOID, MINIMISE AND MITIGATE IMPACTS

A key part of the proponent's management of biodiversity for this proposal is the application of the 'avoid, minimise, mitigate and offset' hierarchy, as follows:

1. Avoid and minimise impacts as the highest priority
2. Mitigate impacts where avoidance is not feasible or practicable in the circumstance
3. Offset where residual, significant unavoidable impacts would occur

7.1 AVOIDANCE AND MINIMISATION

Avoidance measures were devised during the design phase of this proposal to minimise clearing and retain trees where possible for the stability of the ground, and support for the health reserves, national parks and wildlife habitat.

The following avoid and minimisation measures are proposed:

- To avoid impacts associated with weed introduction and spread, inspect all machinery before entering and exiting the subject site. Machinery must be clean of all mud, soil, and vegetation material.
- The construction works and vehicle access to the construction site is to be constrained to the minimum area practical. The proposed access should provide the sole access to the construction site. Use of previously cleared areas for stockpile sites is recommended.
- Material stockpiles, equipment and machinery storage and laydown areas will be consolidated within a defined impact area to minimise the overall impact footprint.
- The impact footprint will be minimised by restricting access across the site to the defined development footprint, including avoiding unnecessary vehicle and personnel movements across unused land.
- If bushrock or habitat trees need to be disturbed or removed, a pre-clearance survey should be conducted beforehand and a fauna spotter-catcher should be present during their disturbance/removal.

7.2 MITIGATION MEASURES

Mitigation measures should be undertaken during the construction and operational phases, including managing the vegetation clearing process, weed management, and installation of erosion and sediment controls as appropriate.

The following mitigation measures are recommended for implementation (see **Table 7-1**):

Table 7-1. Mitigation measures and environmental safeguards.

Impact	Environmental safeguards	Responsibility	Timing
General	1) Any change in design outside the assessed impact footprint (subject site) will require further ecological survey and assessment. 2) All personnel working on site will be made aware of the environmental sensitivities of the site and safeguards/mitigations to be implemented, e.g., site induction and 'toolbox' style briefings. This includes all native vegetation and potential/known threatened flora and fauna (see **Table 5-3**).	Proponent	Pre-construction, construction, operation
Clearing of native vegetation (including habitat trees)	3) All construction personnel should be inducted to be aware that any deliberate or accidental damage of a stand of native vegetation outside the subject site has legislative consequences under Part 4 or 5 of the EP&A Act. Evidence of all personnel receiving this induction would be kept on file (signed induction sheets etc.). 4) To minimise clearing of EECs the boundary of the EEC should be delineated using flagging tape, or similar, prior to construction commencing. 5) Where possible, hollow-bearing trees should be avoided. If any hollow-bearing trees need to be removed, the following measures should be implemented: a. A pre-clearance survey should be conducted prior to any vegetation disturbance. The identified habitat trees must be clearly marked during the pre-clearance survey. b. Non-habitat trees should be cleared prior to the removal of habitat trees. c. Prior to felling, the habitat tree should be struck with an excavator (or similar equipment) to scare resident fauna away. d. Once fallen, the habitat tree should remain in place for 24 hours to enable time for any fauna to disperse. 6) Vegetation would be removed in such a way as to avoid damage to surrounding vegetation. 7) Groundcover disturbance would be kept to a minimum. 8) Any stockpile and compound sites should be located using the following criteria: a. At least 40 m away from the nearest waterway b. In areas of low ecological conservation significance (i.e., previously disturbed land) c. On relatively level ground 9) Stockpiling materials and equipment and parking vehicles would be avoided within the dripline (extent of foliage cover) of any tree. 10) Where possible, vegetation to be removed would be mulched on-site and re-used to stabilise disturbed areas.	Proponent / contractor	Pre-construction, construction, operation
Accidental death of fauna	11) Immediately prior to commencement of any vegetation removal involving machinery and/or tree-felling the area of clearing work is to be inspected for fauna.	Contractor	Construction

	12) Where fauna is encountered, a wildlife handler will remove the animal(s) and relocate them nearby should they not move on of their own volition, or if necessary, deliver them to a veterinarian or wildlife carer for rehabilitation.		
Soil Management	13) Install erosion and sediment controls in line with Landcom's Managing Urban Stormwater, Soils & Construction Guidelines (The Blue Book. Landcom 2004). 14) Where practicable, spread mulch made from vegetation cleared on site on areas of bare soil to stabilise, preventing dust and erosion. 15) Erosion and sedimentation controls are to be checked and maintained on a regular basis. This includes clearing of sediment from behind barriers and after heavy rainfall events. 16) Erosion and sediment control measures are not to be removed until the works are complete, and areas are stabilised. 17) Stockpile topsoil removed to be redistributed across site at completion of construction. 18) Implement dust suppression activities.	Contractor	Pre-construction and construction
Introduction and spread of priority weeds and pathogens	19) Essential Energy has a general biosecurity duty under the Biosecurity Act 2015 to prevent, eliminate or minimise biosecurity risk so far as is reasonably practicable. Field crews shall follow procedures as outlined in Essential Energy's Operational Guideline: Biosecurity Risk Management (CERM1000.96) to prevent, eliminate or minimise biosecurity risk so far as is reasonably practicable, with particular reference to vehicle and equipment hygiene practises.	Contractor	Construction
Disturbance to fallen timber, dead wood, and bush rock	20) If detected, any fallen timber, dead wood, and bush rock encountered would be left *in situ* (where possible) or relocated to a suitable place nearby.	Contractor	Construction
Rehabilitating cleared areas	21) Disturbed areas will be stabilised and allowed to naturally regenerate. 22) Stockpiled topsoil to be re-spread over cleared areas.	Proponent, contractor	Construction and post-construction
Exacerbating invasive fauna	23) All food scraps and rubbish are to be appropriately disposed of in sealed receptacles to prevent providing forage habitats for foxes, rats, dogs, and cats.	Contractor	Construction
Increased risk of fire	24) If any "hot works" are to be undertaken, these activities will not take place on days of extreme fire danger (where possible).	Contractor	Construction

8 CONCLUSION

Field surveys were conducted by Project Ecologists Dr Sylvester Obeng-Darko on the 29th of January 2025 and Project Ecologist Dr Alain Ngute on the 30th and 31st of January 2025, along the alignment corridor between Forest Glen and South Dubbo, which includes the proposed new alignment within the TWPZ. Eight PCTs (total 17.87 ha) were recorded during this assessment:

- PCT 26 – Weeping Myall open woodland of the Darling Riverine Plains Bioregion and Brigalow Belt South Bioregion.
- PCT 70 – White Cypress Pine woodland on sandy loams in central NSW wheatbelt.
- PCT 74 – Yellow Box - River Red Gum tall grassy riverine woodland of NSW South Western Slopes Bioregion and Riverina Bioregion.
- PCT 78 – River Red Gum riparian tall woodland / open forest wetland in the Nandewar Bioregion and Brigalow Belt South Bioregion.
- PCT 81 – Western Grey Box - cypress pine shrub grass shrub tall woodland in the Brigalow Belt South Bioregion.
- PCT 248 – Mixed box eucalypt woodland on low sandy-loam rises on alluvial plains in central western NSW.
- PCT 267 – White Box - White Cypress Pine - Western Grey Box shrub/grass/forb woodland in the NSW South Western Slopes Bioregion.
- PCT 469 – White Cypress Pine - Narrow-leaved Ironbark - Buloke grassy open forest of the Dubbo region, southern Brigalow Belt South Bioregion.

The occurrence of PCT 26 fits the criteria for the BC Act-listed EEC: *Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions*, therefore, up to 0.10 ha of this EEC will be impacted by this proposal.

The occurrence of PCT 74 fits the criteria for the BC Act-listed CEEC: *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions*, therefore, up to 1.24 ha of this CEEC will be impacted by this proposal.

The occurrences of PCT 81, 248 and 267 all fit the criteria for the BC Act-listed EEC: *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions*, therefore, up to 14.65 ha of this EEC will be impacted by this proposal.

In summary, the maximum potential extent of TECs likely to be impacted by the proposal is 15.99 ha; of these, 1.24 ha are BC Act-listed CEECs and 14.75 ha are BC Act-listed EECs; no EPBC Act-listed TECs will be impacted by the proposal.

Three habitat trees were identified on the site, featuring a total of three small, two medium, and one large hollow. Additionally, two trees contained bird nests, Bilby burrows were also observed within the TWPZ easement, and some bush rock occurred within the alignment corridor.

One major perennial watercourse (the Macquarie River) and 13 non-perennial watercourses occur within the subject site. The Macquarie River contains KFH and PRL. Although watercourses occur within the subject site, no dredging or reclamation works are required for the proposal and fish passage would not be blocked. Therefore, the client is not required to give the Minister written notice of the proposed work in accordance with Section 199 of the FM Act.

The aquatic EEC: *The aquatic ecological community in the natural Darling River Endangered ecological occurs* within the subject site. A test of significance conducted in accordance with the FM Act concluded that the proposal would not constitute a significant impact on this EEC.

The Macquarie River and/or the nearby creeks contain the mapped distributions of:

- Silver Perch (*Bidyanus bidyanus*), listed as Vulnerable under the FM Act and Critically Endangered under the EPBC Act
- Southern Purple spotted Gudgeon (*Mogurnda adspersa*), listed as Endangered under the FM Act
- Murray-Darling Basin population of Eel Tailed Catfish (*Tandanus tandanus*), listed as an Endangered population under the FM Act
- Western population of Olive Perchlet (*Ambassis agassizii*), listed as an Endangered population under the FM Act
- Trout cod (*Maccullochella macquariensis*), listed as endangered under both the FM Act and EPBC Act

Based on the tests of significance conducted for the fish populations mapped in the subject site, it is highly unlikely that the proposal will have a significant impact on any of the predicted populations of threatened fish.

The field survey recorded 52 native and 36 introduced flora species, including nine species listed as HTE weeds under the BAM. Additionally, six species are listed as WoNS, with Coolatai Grass also being a PW within the Central West LLS region. No threatened species were detected during the field survey.

Sixty-nine threatened or migratory fauna species or populations listed under the BC Act, FM Act, and/or EPBC Act and 19 BC and/or EPBC Act-listed threatened flora species were assessed as

having a moderate or greater likelihood of occurring at the subject site based on habitat requirements. An EPBC Act protected matters search identified four wetlands of international importance, six TECs, 47 threatened species and 12 migratory species that are predicted or known to occur within 10 km of the subject site. No significant impact on a threatened or migratory species that is likely to result in the extinction of a local population is expected as a result of the proposal.

This assessment covers the current form of the proposal. Any change to the scope of work may require re-assessment. If entry into the BOS is triggered by a changed scope, additional field work and reporting completed according to the BAM may be required.

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APPENDIX A – DATABASE SEARCH RESULTS

EPBC Act Protected Matters Report

Australian Government
Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 06-Feb-2025

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	47
Listed Migratory Species:	12

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	15
Commonwealth Heritage Places:	None
Listed Marine Species:	23
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	2
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	6
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	700 - 800km upstream from Ramsar site	In feature area
Riverland	700 - 800km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	800 - 900km upstream from Ramsar site	In feature area
The macquarie marshes	100 - 150km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area	In feature area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community likely to occur within area	In feature area
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Community may occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community likely to occur within area	In feature area
Weeping Myall Woodlands	Endangered	Community likely to occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Community Name	Threatened Category	Presence Text	Buffer Status

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Lophochroa leadbeateri leadbeateri Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo, Pink Cockatoo (eastern) [82926]	Endangered	Species or species habitat known to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area	In feature area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
FISH			
Bidyanus bidyanus Silver Perch, Bidyan [76155]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Galaxias rostratus Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow [84745]	Critically Endangered	Species or species habitat may occur within area	In feature area
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat known to occur within area	In feature area
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In feature area
FROG			
Crinia sloanei Sloane's Froglet [59151]	Endangered	Species or species habitat may occur within area	In feature area
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat may occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area	In feature area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
PLANT			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Androcalva procumbens [87153]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Austrostipa wakoolica [66623]	Endangered	Species or species habitat may occur within area	In feature area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Homoranthus darwinioides [12974]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Indigofera efoliata [4951]	Endangered	Species or species habitat likely to occur within area	In feature area
Lepidium aschersonii Spiny Peppercress [10976]	Vulnerable	Species or species habitat may occur within area	In feature area
Lepidium monoplocoides Winged Pepper-cress [9190]	Endangered	Species or species habitat may occur within area	In feature area
Prasophyllum petilum Tarengo Leek Orchid [55144]	Endangered	Species or species habitat may occur within area	In feature area
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area	In feature area
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat may occur within area	In feature area
Swainsona recta Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thesium australe			
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Vincetoxicum forsteri listed as Tylophora linearis			
[92384]	Endangered	Species or species habitat may occur within area	In feature area
REPTILE			
Anomalopus mackayi			
Five-clawed Worm-skink, Long-legged Worm-skink [25934]	Vulnerable	Species or species habitat may occur within area	In feature area
Aprasia parapulchella			
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hemiaspis damelii			
Grey Snake [1179]	Endangered	Species or species habitat may occur within area	In buffer area only

Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Motacilla flava			
Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Species or species habitat known to occur within area	In buffer area only
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Species or species habitat known to occur within area	In buffer area only
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Commonwealth Bank of Australia		
Commonwealth Land - Commonwealth Bank of Australia [13250]	NSW	In feature area
Commonwealth Land - Commonwealth Bank of Australia [13251]	NSW	In buffer area only
Commonwealth Trading Bank of Australia		
Commonwealth Land - Commonwealth Trading Bank of Australia [14073]	NSW	In buffer area only
Communications, Information Technology and the Arts - Australian Postal Corporation		
Commonwealth Land - Australian Postal Commission [15709]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [13243]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [13242]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [13248]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [13246]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [13247]	NSW	In buffer area only
Defence		
Defence - DUBBO - HUTTED CAMP SITE [10096]	NSW	In buffer area only
Defence - DUBBO TRAINING DEPOT [10072]	NSW	In buffer area only
Transport and Regional Services - Airservices Australia		
Commonwealth Land - Airservices Australia [13244]	NSW	In buffer area only
Commonwealth Land - Airservices Australia [13245]	NSW	In buffer area only
Unknown		
Commonwealth Land - [13252]	NSW	In buffer area only
Commonwealth Land - [13249]	NSW	In feature area

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat may occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area overfly marine area	In buffer area only

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Beni	CCA Zone 3 State Conservation Area	NSW	In buffer area only
Sappa Bulga	CCA Zone 1 National Park	NSW	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
2679.01 - Dubbo - BDAR - Proposed Residential and Industrial Subdivision	2022/09411		Completed	In buffer area only
Dubbo Firming Power Station	2023/09560		Completed	In buffer area only
Controlled action				
Dubbo Zirconia Project	2012/6625	Controlled Action	Post-Approval	In feature area
Not controlled action				
Dubbo Quarry Continuation Project	2020/8868	Not Controlled Action	Completed	In buffer area only
Dubbo - Tamworth Natural Gas Pipeline	2000/32	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Bioregional Assessments [Resource Information]

SubRegion	BioRegion	Website	Buffer Status
Central West	Northern Inland Catchments	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Biodiversity Values Map and Threshold Report

NSW GOVERNMENT Department of Planning and Environment

Biodiversity Values Map and Threshold Report

This report is generated using the Biodiversity Values Map and Threshold (BMAT) tool. The BMAT tool is used by proponents to supply evidence to your local council to determine whether or not a Biodiversity Development Assessment Report (BDAR) is required under the Biodiversity Conservation Regulation 2017 (Cl. 7.2 & 7.3).

The report provides results for the proposed development footprint area identified by the user and displayed within the blue boundary on the map.

There are two pathways for determining whether a BDAR is required for the proposed development:

1. Is there Biodiversity Values Mapping?
2. Is the 'clearing of native vegetation area threshold' exceeded?

Biodiversity Values Map and Threshold Report

Date of Report Generation		07/02/2025 9:31 AM
1. Biodiversity Values (BV) Map - Results Summary (Biodiversity Conservation Regulation Section 7.3)		
1.1	**Does the development Footprint intersect with BV mapping?**	yes
1.2	**Was ALL BV Mapping within the development footprinted added in the last 90 days?** (dark purple mapping only, no light purple mapping present)	no
1.3	**Date of expiry of dark purple 90 day mapping**	N/A
1.4	**Is the Biodiversity Values Map threshold exceeded?**	yes
2. Area Clearing Threshold - Results Summary (Biodiversity Conservation Regulation Section 7.2)		
2.1	**Size of the development or clearing footprint**	950,601.7 sqm
2.2	**Native Vegetation Area Clearing Estimate (NVACE)** (within development/clearing footprint)	435,969.9 sqm
2.3	**Method for determining Minimum Lot Size**	LEP
2.4	**Minimum Lot Size** (10,000sqm = 1ha)	300 sqm
2.5	**Area Clearing Threshold** (10,000sqm = 1ha)	2,500 sqm
2.6	**Does the estimate exceed the Area Clearing Threshold?** (NVACE results are an estimate and can be reviewed using the Guidance)	yes
REPORT RESULT: Is the Biodiversity Offset Scheme (BOS) Threshold exceeded for the proposed development footprint area? (Your local council will determine if a BDAR is required)		**yes**

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NSW GOVERNMENT Department of Planning and Environment

What do I do with this report?

• If the result above indicates the BOS Threshold has been exceeded, your local council **may require** a Biodiversity Development Assessment Report with your development application. Seek further advice from Council. An accredited assessor can apply the Biodiversity Assessment Method and prepare a BDAR for you. For a list of accredited assessors go to: https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor.

• If the result above indicates the BOS Threshold has not been exceeded, you may not require a Biodiversity Development Assessment Report. This BMAT report can be provided to Council to support your development application. Council can advise how the area clearing threshold results should be considered. Council will review these results and make a determination if a BDAR is required. Council may ask you to review the area clearing threshold results. You may also be required to assess whether the development is "'likely to significantly affect threatened species" as determined under the test in Section 7.3 of the *Biodiversity Conservation Act 2016*.

• If a BDAR is not required by Council, you may still require a permit to clear vegetation from your local council.

• If **all** Biodiversity Values mapping within your development footprint was less than 90 days old, i.e. areas are displayed as dark purple on the BV map, a BDAR may not be required if your Development Application is submitted within that 90 day period. Any BV mapping less than 90 days old on this report will expire on the date provided in Line item 1.3 above.

For more detailed advice about actions required, refer to the **Interpreting the evaluation report** section of the Biodiversity Values Map Threshold Tool User Guide .

Review Options:

• If you believe the Biodiversity Values mapping is incorrect please refer to our BV Map Review webpage for further information.

• If you or Council disagree with the area clearing threshold estimate results from the NVACE in Line Item 2.6 above (i.e. area of Native Vegetation within the Development footprint proposed to be cleared), review the results using the Guide for reviewing area clearing threshold results from the BMAT Tool.

Acknowledgement

I, as the applicant for this development, submit that I have correctly depicted the area that will be impacted or likely to be impacted as a result of the proposed development.

Signature: _____ Date:_____

(Typing your name in the signature field will be considered as your signature for the purposes of this form) 07/02/2025 09:31 AM

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Department of Planning and Environment

Biodiversity Values Map and Threshold Tool

The Biodiversity Values (BV) Map and Threshold Tool identifies land with high biodiversity value, particularly sensitive to impacts from development and clearing.

The BV map forms part of the Biodiversity Offsets Scheme threshold, which is one of the factors for determining whether the Scheme applies to a clearing or development proposal. You have used the Threshold Tool in the map viewer to generate this BV Threshold Report for your nominated area. This report calculates results for your proposed development footprint and indicates whether Council may require you to engage an accredited assessor to prepare a Biodiversity Development Assessment Report (BDAR) for your development.

This report may be used as evidence for development applications submitted to councils. You may also use this report when considering native vegetation clearing under the State Environmental Planning Policy (Biodiversity and Conservation) 2021 - Chapter 2 vegetation in non-rural areas.

What's new? For more information about the latest updates to the Biodiversity Values Map and Threshold Tool go to the updates section on the Biodiversity Values Map webpage.

Map Review: Landholders can request a review of the BV Map where they consider there is an error in the mapping on their property. For more information about the map review process and an application form for a review go to the Biodiversity Values Map Review webpage.

If you need help using this map tool see our Biodiversity Values Map and Threshold Tool User Guide or contact the Map Review Team at map.review@environment.nsw.gov.au or on 1800 001 490.

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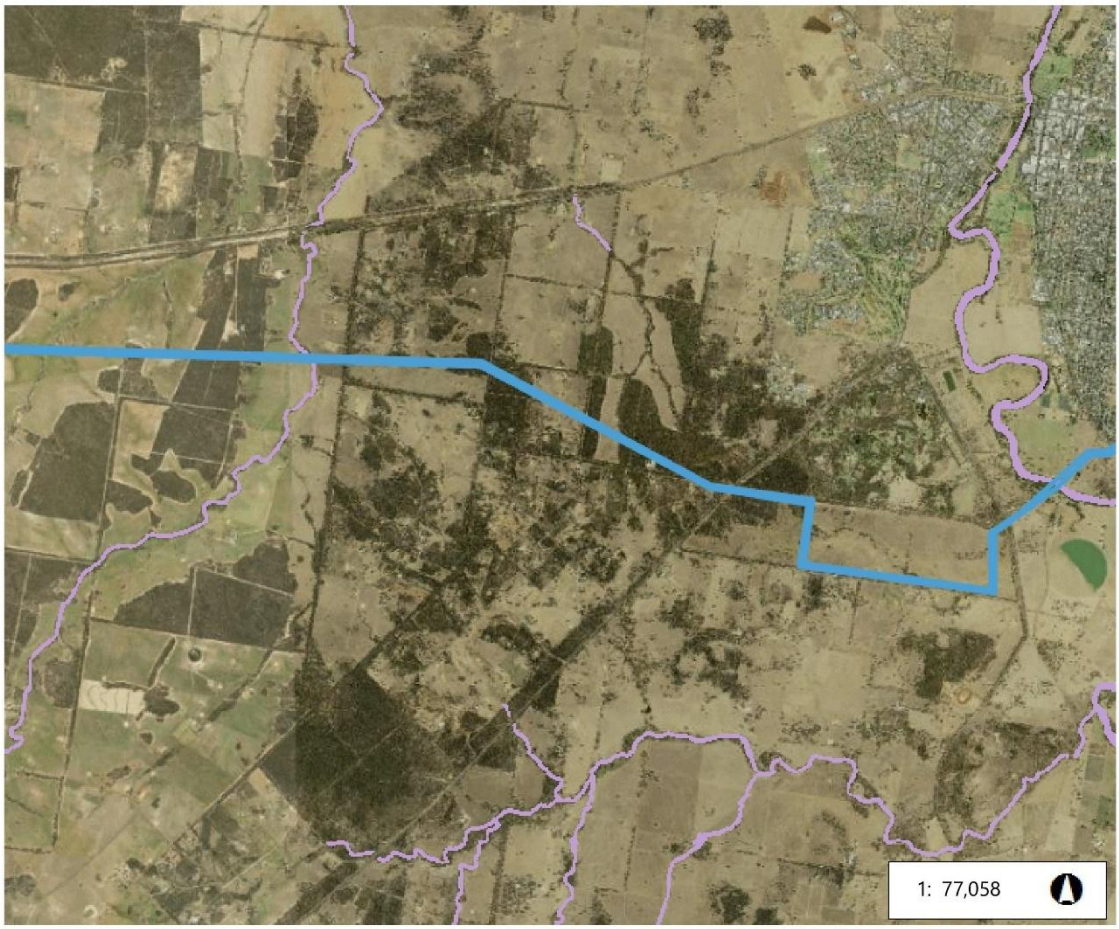
Biodiversity Values Map



3,914.6 0 1,957.29 3,914.6 Metres

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Legend

- Biodiversity Values that have been mapped for more than 90 days
- Biodiversity Values added within last 90 days
- Native Vegetation Area Clearing Estimate (NVACE)
- Development area selected by proponent

07/02/2025 09:31 AM

The results provided in this tool are generated using the best available mapping and knowledge of species habitat requirements.

This map is valid as at the date the report was generated. Checking the Biodiversity Values Map viewer for mapping updates is recommended.

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Terrestrial Biodiversity Values from Dubbo LEP.

Areas shaded green are areas of high biodiversity value identified within the Dubbo LEP. The red polygon approximates the subject site.

BioNET Atlas search – threatened species predicted to occur within the Piliga and Talbragar Valley subregions of Brigalow Belt South Bioregion and the Inland Slopes Subregion of NSW South Western Slopes Bioregion.

Class	Scientific Name	Common Name	NSW status*	Comm. status+	Records
Amphibia	*Crinia sloanei*	Sloane's Froglet	E1,P	E	635
Amphibia	*Litoria booroolongensis*	Booroolong Frog	E1,P	E	38
Amphibia	*Litoria raniformis*	Southern Bell Frog	E1,P	V	12
Aves	*Actitis hypoleucos*	Common Sandpiper	P	C,J,K	3
Aves	*Anseranas semipalmata*	Magpie Goose	V,P		8
Aves	*Anthochaera phrygia*	Regent Honeyeater	E4A,P,2	CE	156
Aves	*Aphelocephala leucopsis*	Southern Whiteface	V,P	V	580
Aves	*Apus pacificus*	Fork-tailed Swift	P	C,J,K	38
Aves	*Ardeotis australis*	Australian Bustard	E1,P		1
Aves	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		2406
Aves	*Botaurus poiciloptilus*	Australasian Bittern	E1,P	E	6
Aves	*Burhinus grallarius*	Bush Stone-curlew	E1,P		19
Aves	*Calidris acuminata*	Sharp-tailed Sandpiper	P	C,J,K	39
Aves	*Calidris ferruginea*	Curlew Sandpiper	E4A,P	CE,C,J,K	3
Aves	*Calidris ruficollis*	Red-necked Stint	P	C,J,K	6
Aves	*Callocephalon fimbriatum*	Gang-gang Cockatoo	E1,P,3	E	446
Aves	*Calyptorhynchus lathami lathami*	South-eastern Glossy Black-Cockatoo	V,P,2	V	161
Aves	*Certhionyx variegatus*	Pied Honeyeater	V,P		6
Aves	*Chthonicola sagittata*	Speckled Warbler	V,P		1665
Aves	*Circus assimilis*	Spotted Harrier	V,P		112
Aves	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)	V,P	V	5318
Aves	*Cuculus optatus*	Oriental Cuckoo	P	C,J,K	1
Aves	*Daphoenositta chrysoptera*	Varied Sittella	V,P		599
Aves	*Ephippiorhynchus asiaticus*	Black-necked Stork	E1,P		1
Aves	*Epthianura albifrons*	White-fronted Chat	V,P		322
Aves	*Falco hypoleucos*	Grey Falcon	V,P,2	V	3
Aves	*Falco subniger*	Black Falcon	V,P		91
Aves	*Gallinago hardwickii*	Latham's Snipe	V,P	V,J,K	81
Aves	*Gelochelidon nilotica*	Gull-billed Tern	P	C	1
Aves	*Glossopsitta porphyrocephala*	Purple-crowned Lorikeet	V,P,3		9
Aves	*Glossopsitta pusilla*	Little Lorikeet	V,P		495
Aves	*Grantiella picta*	Painted Honeyeater	V,P	V	51
Aves	*Grus rubicunda*	Brolga	V,P		10
Aves	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P		176
Aves	*Hamirostra melanosternon*	Black-breasted Buzzard	V,P,3		3
Aves	*Hieraaetus morphnoides*	Little Eagle	V,P		435
Aves	*Hirundapus caudacutus*	White-throated Needletail	V,P	V,C,J,K	119
Aves	*Hydroprogne caspia*	Caspian Tern	P	J	10

Class	Scientific Name	Common Name	NSW status*	Comm. status+	Records
Aves	*Ixobrychus flavicollis*	Black Bittern	V,P		1
Aves	*Lathamus discolor*	Swift Parrot	E1,P	CE	259
Aves	*Leipoa ocellata*	Malleefowl	E1,P	V	4
Aves	*Limosa limosa*	Black-tailed Godwit	V,P	E,C,J,K	P
Aves	*Lophochroa leadbeateri*	Pink Cockatoo	V,P,2	E	8
Aves	*Lophoictinia isura*	Square-tailed Kite	V,P,3		19
Aves	*Melanodryas cucullata cucullata*	South-eastern Hooded Robin	E1,P	E	668
Aves	*Melithreptus gularis gularis*	Black-chinned Honeyeater (eastern subspecies)	V,P		648
Aves	*Neophema chrysostoma*	Blue-winged Parrot	V,P	V	6
Aves	*Neophema pulchella*	Turquoise Parrot	V,P,3		499
Aves	*Ninox connivens*	Barking Owl	V,P,3		103
Aves	*Ninox strenua*	Powerful Owl	V,P,3		15
Aves	*Oxyura australis*	Blue-billed Duck	V,P		23
Aves	*Pachycephala inornata*	Gilbert's Whistler	V,P		138
Aves	*Pandion cristatus*	Eastern Osprey	V,P,3		1
Aves	*Petroica boodang*	Scarlet Robin	V,P		816
Aves	*Petroica phoenicea*	Flame Robin	V,P		811
Aves	*Petroica rodinogaster*	Pink Robin	V,P		2
Aves	*Phaethon rubricauda*	Red-tailed Tropicbird	V,P	C,J	1
Aves	*Philomachus pugnax*	Ruff	P	C,J,K	1
Aves	*Polytelis swainsonii*	Superb Parrot	V,P,3	V	4950
Aves	*Pomatostomus temporalis temporalis*	Grey-crowned Babbler (eastern subspecies)	V,P		1592
Aves	*Pycnoptilus floccosus*	Pilotbird	V,P	V	1
Aves	*Rostratula australis*	Australian Painted Snipe	E1,P	E	4
Aves	*Stagonopleura guttata*	Diamond Firetail	V,P	V	1696
Aves	*Stictonetta naevosa*	Freckled Duck	V,P		32
Aves	*Thalasseus bergii*	Crested Tern	P	J	1
Aves	*Tringa glareola*	Wood Sandpiper	P	C,J,K	3
Aves	*Tringa nebularia*	Common Greenshank	E1,P	E,C,J,K	4
Aves	*Tringa stagnatilis*	Marsh Sandpiper	P	C,J,K	7
Aves	*Tyto longimembris*	Eastern Grass Owl	V,P,3		1
Aves	*Tyto novaehollandiae*	Masked Owl	V,P,3		10
Flora	*Acacia ausfeldii*	Ausfeld's Wattle	V		4008
Flora	*Acacia meiantha*		E1	E	P
Flora	*Acacia pendula*	Acacia pendula population in the Hunter catchment	E2		P
Flora	*Acacia phasmoides*	Phantom Wattle	V	V	94
Flora	*Ammobium craspedioides*	Yass Daisy	V	V	1288
Flora	*Amphibromus fluitans*	Floating Swamp Wallaby-grass	V	V	30
Flora	*Austrostipa wakoolica*	A spear-grass	E1	E	P
Flora	*Bertya mollissima*		E1	E	2
Flora	*Bertya opponens*	Coolabah Bertya	V	V	645
Flora	*Boronia granitica*	Granite Boronia	V,P	E	1
Flora	*Bossiaea fragrans*		E4A	CE	55

Class	Scientific Name	Common Name	NSW status*	Comm. status+	Records
Flora	*Brachyscome muelleroides*	Claypan Daisy	V	V	1
Flora	*Caesia parviflora var. minor*	Small Pale Grass-lily	E1		3
Flora	*Caladenia arenaria*	Sand-hill Spider Orchid	E1,P,2	E	6
Flora	*Caladenia concolor*	Crimson Spider Orchid	E1,P,2	V	518
Flora	*Caladenia rosella*	Rosella Spider Orchid	E4,P,2	E	1
Flora	*Caladenia tessellata*	Thick Lip Spider Orchid	V,P,2	V	1
Flora	*Calotis glandulosa*	Mauve Burr-daisy	V	V	2
Flora	*Carex raleighii*	Raleigh Sedge	E1		1
Flora	*Cassinia heleniae*		E1	E	5
Flora	*Commersonia procumbens*		V	V	6
Flora	*Cullen parvum*	Small Scurf-pea	E1		7
Flora	*Cymbidium canaliculatum*	Cymbidium canaliculatum population in the Hunter Catchment	E2,P,2		1
Flora	*Cynanchum elegans*	White-flowered Wax Plant	E1	E	P
Flora	*Dichanthium setosum*	Bluegrass	V	V	4
Flora	*Digitaria porrecta*	Finger Panic Grass	E1		18
Flora	*Diuris tricolor*	Pine Donkey Orchid	V,P,2		21
Flora	*Eriocaulon australasicum*	Austral Pipewort	E1	E	P
Flora	*Eucalyptus aggregata*	Black Gum	V	V	1
Flora	*Eucalyptus alligatrix subsp. alligatrix*		V	V	3
Flora	*Eucalyptus camaldulensis*	Eucalyptus camaldulensis population in the Hunter catchment	E2		P
Flora	*Eucalyptus cannonii*	Capertee Stringybark	V		5
Flora	*Eucalyptus robertsonii subsp. hemisphaerica*	Robertson's Peppermint	V	V	P
Flora	*Euphrasia arguta*		E4A	CE	1
Flora	*Euphrasia collina subsp. muelleri*	Mueller's Eyebright	E1	E	P
Flora	*Grevillea wilkinsonii*	Tumut Grevillea	E4A	CE	18
Flora	*Homoranthus darwinioides*	Fairy Bells	V	V	P
Flora	*Homoranthus prolixus*	Granite Homoranthus	V	V	1
Flora	*Indigofera efoliata*	Leafless Indigo	E1,3	E	6
Flora	*Lepidium aschersonii*	Spiny Peppercress	V	V	3
Flora	*Leucochrysum albicans subsp. tricolor*	Hoary Sunray	E1	E	52
Flora	*Monotaxis macrophylla*	Large-leafed Monotaxis	E1		2
Flora	*Muehlenbeckia sp. Mt Norman*	Scrambling Lignum	V		1
Flora	*Myriophyllum implicatum*		E4A,2		11
Flora	*Persoonia marginata*	Clandulla Geebung	V,P	V	P
Flora	*Pilularia novae-hollandiae*	Austral Pillwort	E1,3		5
Flora	*Pimelea bracteata*		E4A	CE	1
Flora	*Polygala linariifolia*	Native Milkwort	E1		15
Flora	*Pomaderris cotoneaster*	Cotoneaster Pomaderris	E1	E	P
Flora	*Pomaderris queenslandica*	Scant Pomaderris	E1		4

Class	Scientific Name	Common Name	NSW status*	Comm. status+	Records
Flora	*Prasophyllum petilum*	Tarengo Leek Orchid	E1,P,2	E	35
Flora	*Prasophyllum sp. Wybong*		P	CE	P
Flora	*Pterostylis cobarensis*	Greenhood Orchid	V,P,2		174
Flora	*Pultenaea humilis*	Dwarf Bush-pea	V		30
Flora	*Senecio garlandii*	Woolly Ragwort	V		73
Flora	*Swainsona murrayana*	Slender Darling Pea	V	V	6
Flora	*Swainsona recta*	Small Purple-pea	E1	E	738
Flora	*Swainsona sericea*	Silky Swainson-pea	V		236
Flora	*Thesium australe*	Austral Toadflax	V	V	69
Flora	*Tylophora linearis*		V	E	25
Flora	*Zieria ingramii*	Keith's Zieria	E1	E	2
Flora	*Zieria obcordata*	Granite Zieria	E1	E	28
Insecta	*Keyacris scurra*	Key's Matchstick Grasshopper	E1	E	7
Insecta	*Synemon plana*	Golden Sun Moth	V	V	138
Mammalia	*Aepyprymnus rufescens*	Rufous Bettong	V,P		2
Mammalia	*Bettongia lesueur graii*	Boodie, Burrowing Bettong (mainland)	E4,P	X	1
Mammalia	*Cercartetus nanus*	Eastern Pygmy-possum	V,P		6
Mammalia	*Chalinolobus dwyeri*	Large-eared Pied Bat	E1,P	E	20
Mammalia	*Chalinolobus picatus*	Little Pied Bat	V,P		17
Mammalia	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	48
Mammalia	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V,P		28
Mammalia	*Isoodon auratus auratus*	Golden Bandicoot (mainland)	E4,P	V	1
Mammalia	*Leporillus apicalis*	Lesser Stick-nest Rat	E4,P	X	1
Mammalia	*Leporillus conditor*	Greater Stick-nest Rat	E4,P	V	2
Mammalia	*Macropus dorsalis*	Black-striped Wallaby	E1,P		688
Mammalia	*Macrotis lagotis*	Bilby	E4,P	V	3
Mammalia	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V,P		121
Mammalia	*Myotis macropus*	Southern Myotis	V,P		24
Mammalia	*Nyctophilus corbeni*	Corben's Long-eared Bat	V,P	V	9
Mammalia	*Petauroides volans*	Southern Greater Glider	E1,P	E	126
Mammalia	*Petaurus australis*	Yellow-bellied Glider	V,P	V	2
Mammalia	*Petaurus norfolcensis*	Squirrel Glider in the Wagga Wagga Local Government Area	E2,V,P		578
Mammalia	*Petrogale penicillata*	Brush-tailed Rock-wallaby	E1,P	V	3
Mammalia	*Phascogale tapoatafa*	Brush-tailed Phascogale	V,P		P
Mammalia	*Phascolarctos cinereus*	Koala	E1,P	E	142
Mammalia	*Pseudomys novaehollandiae*	New Holland Mouse	P	V	8
Mammalia	*Pseudomys oralis*	Hastings River Mouse	E1,P	E	1
Mammalia	*Pseudomys pilligaensis*	Pilliga Mouse	V,P	V	179
Mammalia	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	536
Mammalia	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		26
Mammalia	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		4

Class	Scientific Name	Common Name	NSW status*	Comm. status+	Records
Mammalia	*Sminthopsis macroura*	Stripe-faced Dunnart	V,P		P
Mammalia	*Vespadelus troughtoni*	Eastern Cave Bat	V,P		17
Reptilia	*Aprasia parapulchella*	Pink-tailed Legless Lizard	V,P	V	194
Reptilia	*Delma impar*	Striped Legless Lizard	V,P	V	8
Reptilia	*Hoplocephalus bitorquatus*	Pale-headed Snake	V,P		P
Reptilia	*Varanus rosenbergi*	Rosenberg's Goanna	V,P		7

*NSW Status: ^^=Category 2 sensitive species, P=Protected, P13=Protected native plant, V=Vulnerable, E1=Endangered, E2=Endangered population, E4=Extinct, E4A=Critically endangered, 2=Category 2 sensitive species, 3=Category 3 sensitive species.
+ Comm. Status: C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable.

BioNET Atlas search – threatened ecological communities predicted to occur within the within the Piliga and Talbragar Valley subregions of Brigalow Belt South Bioregion and the Inland Slopes Subregion of NSW South Western Slopes Bioregion.

Community Name	*NSW status	+Comm. Status	Records
Alpine Sphagnum Bogs and Associated Fens		E	K
Brigalow within the Brigalow Belt South, Nandewar and Darling Riverine Plains Bioregions	E3		K
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions		E	K
Carex Sedgeland of the New England Tableland, Nandewar, Brigalow Belt South and NSW North Coast Bioregions	E3		K
Central Hunter Valley eucalypt forest and woodland		CE	K
Coolac-Tumut Serpentinite Shrubby Woodland in the NSW South Western Slopes and South Eastern Highlands Bioregions	E3		K
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions		E	K
Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions	E3		K
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia		E	K
Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	E3		K
Mallee Bird Community of the Murray Darling Depression Bioregion		E	K
Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions	E3		K
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland		CE	K
Pilliga Outwash Ephemeral Wetlands in the Brigalow Belt South Bioregion	E3		K
Poplar Box Grassy Woodland on Alluvial Plains		E	K
Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions	E3		P
Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion		E	K
Weeping Myall Woodlands		E	K
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and	E4B		K
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland		CE	K

*NSW Status: E=Endangered, CE=Critically endangered
+Comm. Status: CE=Critically endangered, E=Endangered
- Records: K= known to occur, P = predicted to occur

BioNET Atlas search – Key Threatening Processes predicted within the within the Piliga and Talbragar Valley subregions of Brigalow Belt South Bioregion and the Inland Slopes Subregion of NSW South Western Slopes Bioregion.

Threats	NSW status	Comm. status	Records -
Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, *Manorina melanocephala* (Latham, 1802)	KTP	KTP	P
Alteration of habitat following subsidence due to longwall mining	KTP		P
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	KTP		P
Anthropogenic Climate Change	KTP	KTP	P
Bushrock removal	KTP		P
Clearing of native vegetation	KTP	KTP	P
Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus* (L.)	KTP	KTP	P
Competition and habitat degradation by Feral Goats, *Capra hircus* Linnaeus 1758	KTP	KTP	P
Competition from feral honey bees, *Apis mellifera* L.	KTP		P
Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	KTP		P
Habitat degradation and loss by Feral Horses (brumbies, wild horses), *Equus caballus* Linnaeus 1758	KTP		P
Herbivory and environmental degradation caused by feral deer	KTP		P
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	KTP		P
Importation of Red Imported Fire Ants *Solenopsis invicta* Buren 1972	KTP	KTP	P
Infection by *Psittacine Circoviral* (beak and feather) Disease affecting endangered psittacine species and populations	KTP	KTP	P
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	KTP	KTP	P
Infection of native plants by *Phytophthora cinnamomi*	KTP	KTP	P
Introduction of the Large Earth *Bumblebee Bombus* terrestris (L.)	KTP		P
Invasion and establishment of exotic vines and scramblers	KTP		P
Invasion and establishment of Scotch Broom (*Cytisus scoparius*)	KTP		P
Invasion and establishment of the Cane Toad (*Bufo marinus*)	KTP	KTP	P
Invasion of native plant communities by African Olive *Olea europaea* subsp. *cuspidata* (Wall. ex G. Don) Cif.	KTP		P
Invasion of native plant communities by *Chrysanthemoides monilifera*	KTP		P
Invasion of native plant communities by exotic perennial grasses	KTP		P
Invasion of the Yellow Crazy Ant, *Anoplolepis gracilipes* (Fr. Smith) into NSW	KTP		P
Invasion, establishment and spread of Lantana (*Lantana camara* L. sens. Lat)	KTP		P

Threats	NSW status	Comm. status	Records -
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	KTP	KTP	P
Loss of Hollow-bearing Trees	KTP		P
Loss or degradation (or both) of sites used for hill-topping by butterflies	KTP		P
Predation and hybridisation by Feral Dogs, *Canis lupus familiaris*	KTP		P
Predation by *Gambusia holbrooki* Girard, 1859 (Plague Minnow or Mosquito Fish)	KTP		P
Predation by the European Red Fox *Vulpes Vulpes* (Linnaeus, 1758)	KTP	KTP	P
Predation by the Feral Cat *Felis catus* (Linnaeus, 1758)	KTP	KTP	P
Predation, habitat degradation, competition and disease transmission by Feral Pigs, *Sus scrofa* Linnaeus 1758	KTP	KTP	P
Removal of dead wood and dead trees	KTP		P

- Records: P = predicted to occur

APPENDIX B – FIELD SURVEY RESULTS

Flora species list

In total, 85 plant species were detected during the three days field survey in January 2025; these species are listed below. Of this number, 52 (61.18%) are native and 33 (38.82%) are introduced.

[1]Growth Form	Scientific Name	Common Name	[2]Status	[3]HTE	[4]WoNS	[5]PW
SG	*Acacia buxifolia*		N	No	No	No
SG	*Acacia cultriformis*	Half-Moon Wattle	N	No	No	No
TG	*Acacia dealbata*	Silver Wattle	N	No	No	No
SG	*Acacia deanei*	Green Wattle	N	No	No	No
TG	*Acacia decurrens*		N	No	No	No
TG	*Acacia doratoxylon*	Currawang	N	No	No	No
TG	*Acacia pendula*	Weeping Myall	N	No	No	No
TG	*Acacia salicina*	Willow Wattle	N	No	No	No
TG	*Acacia stenophylla*	River Cooba	N	No	No	No
TG	*Allocasuarina luehmannii*	Bulloak	N	No	No	No
SG	*Atriplex semibaccata*	Creeping Saltbush	N	No	No	No
GG	*Austrostipa nodosa*		N	No	No	No
GG	*Austrostipa scabra*	Speargrass	N	No	No	No
GG	*Austrostipa stipoides*	Coast Spear-Grass	N	No	No	No
GG	*Austrostipa ramosissima*		N	No	No	No
GG	*Avena fatua*	Wild Oats	E	No	No	No
TG	*Brachychiton populneus*	Kurrajong	N	No	No	No
FG	*Brassica napus*		E	No	No	No
GG	*Briza maxima*		E	No	No	No
GG	*Bromus catharticus*	Prairie Grass	E	No	No	No
TG	*Callitris glaucophylla*	White Cypress Pine	N	No	No	No
FG	*Carthamus lanatus*	Saffron Thistle	E	Yes	No	No
SG	*Cassinia aculeata*	Dolly Bush	N	No	No	No
TG	*Casuarina cristata*	Belah	N	No	No	No
TG	*Casuarina cunninghamiana*	River Oak	N	No	No	No
FG	*Chrysocephalum apiculatum*	Common Everlasting	N	No	No	No
OG	*Cucumis myriocarpus*		E	No	No	No
GG	*Cyperus eragrostis*	Umbrella Sedge	E	Yes	No	No
SG	*Enchylaena tomentosa*	Ruby Saltbush	N	No	No	No
GG	*Enteropogon acicularis*		N	No	No	No
GG	*Eragrostis cilianensis*	Stinkgrass	E	No	No	No
GG	*Eragrostis curvula*		E	Yes	No	No
SG	*Eremophila longifolia*		N	No	No	No
SG	*Boronia glabra*		E	No	No	No
TG	*Eucalyptus albens*	White Box	N	No	No	No
TG	*Eucalyptus blakelyi*	Blakely's Red Gum	N	No	No	No
TG	*Eucalyptus camaldulensis*	River Red Gum	N	No	No	No
TG	*Eucalyptus conica*	Fuzzy Box	N	No	No	No

[1]Growth Form	Scientific Name	Common Name	[2]Status	[3]HTE	[4]WoNS	[5]PW
TG	*Eucalyptus crebra*	Narrow-Leaved Ironbark	N	No	No	No
TG	*Eucalyptus dwyeri*	Dwyer's Red Gum	N	No	No	No
TG	*Eucalyptus melliodora*	Yellow Box	N	No	No	No
TG	*Eucalyptus microcarpa*	Grey Box	N	No	No	No
TG	*Eucalyptus populnea subsp. bimbil*	Bimble Box	N	No	No	No
TG	*Eucalyptus rossii*	Inland Scribbly Gum	N	No	No	No
TG	*Eucalyptus sideroxylon*	Mugga Ironbark	N	No	No	No
TG	*Fraxinus angustifolia*		E	Yes	No	No
SG	*Geijera parviflora*	Wilga	N	No	No	No
FG	*Glandularia aristigera*		E	No	No	No
FG	*Gomphrena celosioides*	Gomphrena Weed	E	No	No	No
TG	*Grevillea robusta*		E	No	No	No
SG	*Hakea sericea*	Needlebush	N	No	No	No
FG	*Helianthus annuus*		E	No	No	No
FG	*Heliotropium amplexicaule*		E	Yes	No	No
FG	*Heliotropium europaeum*	Potato Weed	E	No	No	No
GG	*Hyparrhenia hirta*	Coolatai Grass	E	Yes	No	Yes
FG	*Lepidium africanum*		E	No	No	No
GG	*Lomandra longifolia*		N	No	No	No
SG	*Lycium ferocissimum*	African Boxthorn	E	Yes	Yes	No
GG	*Megathyrsus maximus*	Guinea Grass	E	No	No	No
SG	*Calytrix tetragona*	Black Tea-Tree	N	No	No	No
SG	*Melaleuca uncinata*	Broombush	N	No	No	No
TG	*Melia azedarach*	White Cedar	N	No	No	No
SG	*Opuntia ficus-indica*	Indian Fig	E	No	No	No
SG	*Opuntia tomentosa*	Velvet Tree Pear	E	Yes	Yes	No
FG	*Oxalis chnoodes*		N	No	No	No
FG	*Oxalis perennans*		N	No	No	No
GG	*Panicum effusum*	Hairy Panic	N	No	No	No
GG	*Paspalum dilatatum*	Paspalum	E	Yes	No	No
GG	*Phalaris aquatica*		E	No	No	No
GG	*Poa labillardierei*	Tussock	E	No	No	No
GG	*Poa sieberiana*	No common name	N	No	No	No
FG	*Pterocaulon redolens*	Fruit-Salad Plant	N	No	No	No
FG	*Rapistrum rugosum*	Turnip Weed	E	No	No	No
TG	*Schinus molle*	Pepper Tree	E	No	No	No
SG	*Sclerolaena birchii*	Galvanized Burr	N	No	No	No
SG	*Senna artemisioides*	Silver Cassia	N	No	No	No
FG	*Senna barclayana*	Smooth Senna	N	No	No	No
FG	*Sonchus asper*	Prickly Sowthistle	E	No	No	No
GG	*Sorghum leiocladum*	Wild Sorghum	N	No	No	No
GG	*Themeda triandra*	Kangaroo Grass	N	No	No	No
FG	*Trifolium repens*	White Clover	E	No	No	No
FG	*Verbena bonariensis*	Purpletop	E	No	No	No

[1]Growth Form	Scientific Name	Common Name	[2]Status	[3]HTE	[4]WoNS	[5]PW
FG	*Verbena incompta*	Purpletop	E	No	No	No
FG	*Vicia monantha*	Square-Stemmed Vetch	E	No	No	No
FG	*Xerochrysum bracteatum*	Golden Everlasting	N	No	No	No

[1]Growth form: FG = forb, GG = grass and grass-like, SG = shrub, TG = tree, EG = fern, OG = other.
[2]Status: N = native, E = Exotic
[3]High-threat exotic species (Yes/No).
[4]Weed of National Significance (Yes/No).
[5]Priority weed for the LLS Region (Yes/No).

Fauna species list

In total, 40 fauna species were detected during the field survey, these species are listed in the table below; of the detected species, 36 (90%) are native and four (10%) are introduced.

Class	Scientific Name	Common Name	Status
Aves	*Acanthagenys rufogularis*	Spiny-cheeked Honeyeater	N
Aves	*Acanthiza chrysorrhoa*	Yellow-rumped Thornbill	N
Aves	*Acanthiza nana*	Yellow Thornbill	N
Aves	*Acanthiza reguloides*	Buff-rumped Thornbill	N
Aves	*Barnardius zonarius*	Australian Ringneck	N
Aves	*Cacatua galerita*	Sulphur-crested Cockatoo	N
Aves	*Coracina novaehollandiae*	Black-faced Cuckooshrike	N
Aves	*Corvus coronoides*	Australian Raven	N
Aves	*Cracticus nigrogularis*	Pied Butcherbird	N
Aves	*Cracticus tibicen*	Australian Magpie	N
Aves	*Cracticus torquatus*	Grey Butcherbird	N
Aves	*Dacelo novaeguineae*	Laughing Kookaburra	N
Aves	*Egretta novaehollandiae*	White-faced Heron	N
Aves	*Entomyzon cyanotis*	Blue-faced Honeyeater	N
Aves	*Eolophus roseicapilla*	Galah	N
Aves	*Eopsaltria australis*	Eastern Yellow Robin	N
Aves	*Grallina cyanoleuca*	Magpie-Lark	N
Aves	*Hirundo neoxena*	Welcome Swallow	N
Aves	*Malurus cyaneus*	Superb Fairy-wren	N
Aves	*Manorina melanocephala*	Noisy Miner	N
Aves	*Ocyphaps lophotes*	Crested Pigeon	N
Aves	*Passer domesticus*	House Sparrow	I
Aves	*Philemon citreogularis*	Little Friarbird	N
Aves	*Philemon corniculatus*	Noisy Friarbird	N
Aves	*Platycercus elegans*	Crimson Rosella	N
Aves	*Platycercus eximius*	Eastern Rosella	N
Aves	*Podargus strigoides*	Tawny Frogmouth	N
Aves	*Psephotus haematonotus*	Red-rumped Parrot	N
Aves	*Rhipidura albiscapa*	Grey Fantail	N
Aves	*Rhipidura leucophrys*	Willie-Wagtail	N
Aves	*Smicrornis brevirostris*	Weebill	N
Aves	*Strepera graculina*	Pied Currawong	N
Aves	*Struthidea cinerea*	Apostlebird	N
Aves	*Trichoglossus concinnus*	Musk Lorikeet	N
Aves	*Trichoglossus moluccanus*	Rainbow Lorikeet	N
Mammalia	*Equus asinus*	Donkey	I
Mammalia	*Macropus giganteus*	Eastern Grey Kangaroo	N
Mammalia	*Oryctolagus cuniculus*	European Rabbit	I
Mammalia	*Ovis aries*	Domestic Sheep	I
Reptilia	*Pogona barbata*	Eastern Bearded Dragon	N

Status: N = native, I = introduced

Site Photographs

Feature	Site photograph
PCT 26	

PCT 70

PCT 74	

PCT 78	

PCT 81

PCT 248	

PCT 267	

PCT 469	

Bilby Burrows	

APPENDIX C – BC AND EPBC ACT HABITAT ASSESSMENT FOR THREATENED AND MIGRATORY SPECIES, POPULATIONS AND COMMUNITIES PREDICTED TO OCCUR

The results of the desktop review and the field assessment were collated and reviewed in the context of local ecological knowledge to determine the likelihood of occurrence of threatened species and ecological communities, and potential impacts of the proposal. List generated by conducting a vegetation association within the relevant IBRA subregions. To determine whether any threatened species were known to occur near the subject site, BioNet Atlas records of threatened species were downloaded, and the records clipped to within 10 km of the subject site in QGIS.

Likelihood of occurrence description is sourced from https://www.environment.nsw.gov.au/threatenedSpeciesApp

The likelihood of occurrence of threatened species, populations or ecological communities was categorised as follows:

- 'Present' – the species was observed or has been previously recorded on the site.
- 'High' – high probability that a species uses the site, based on nearby records and suitable habitat being present.
- 'Moderate' – suitable habitat for a species occurs on the site, but the species has not been observed or previously recorded at the site ***or*** habitat not ideal, but there are nearby records.
- 'Low' – a very low likelihood that the species uses the site, based on lack of the preferred type of habitat.

Likelihood of occurrence table for BC and EPBC Act listed threatened species and populations.

Scientific Name	Common Name	*NSW status	+Comm. Status	# BioNET Records <10 km	Likelihood of Occurrence	Test of significance required (Yes/No)
Crinia sloanei	Sloane's Froglet	E1,P	E	0	Sloane's Froglet has been recorded from widely scattered sites in the floodplains of the Murray-Darling Basin, with the majority of records in the Darling Riverine Plains, NSW South Western Slopes and Riverina bioregions in New South Wales. It has not been recorded recently in the northern part of its range and has only been recorded infrequently in the southern part of its range in NSW. It is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats. **Moderate – Search area is within the species known distribution and associated vegetation communities (PCT 74 and 81) are present. However, no records are within 10 km.**	**Yes**
Litoria booroolongensis	Booroolong Frog	E1,P	E	0	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. The species is rare throughout most of the remainder of its range. Live along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses. **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km.**	**No**
Litoria raniformis	Southern Bell Frog	E1,P	V	0	In NSW the species was once distributed along the Murray and Murrumbidgee Rivers and their tributaries, the southern slopes of the Monaro district and the central southern tablelands as far north as Tarana, near Bathurst. Currently, the species is known to exist only in isolated populations in the Coleambally Irrigation Area, the Lowbidgee floodplain and around Lake Victoria. A few yet unconfirmed records have also been made in the Murray Irrigation Area in recent years. The species is also found in Victoria, Tasmania and South Australia, where it has also become endangered. Usually found in or around permanent or ephemeral Black Box/Lignum/Nitre Goosefoot swamps, Lignum/Typha swamps and River Red Gum swamps or billabongs along floodplains and river valleys. They are also found in irrigated rice crops, particularly where there is no available natural habitat. **Low – Search area is within the species known distribution, no associated vegetation communities are present, and no records occur within 10 km.**	**No**

Actitis hypoleucos	Common Sandpiper	P	C,J, K	0	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. 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 **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km.**	**No**
Anseranas semipalmata	Magpie Goose	V,P		6	The Magpie Goose is still relatively common in the Australian northern tropics but had disappeared from south-east Australia by 1920 due to drainage and overgrazing of reed swamps used for breeding. Since the 1980s there have been an increasing number of records in central and northern NSW. Vagrants can follow food sources to south-eastern NSW. Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. **High – Search area is within species distribution and associated vegetation communities (PCT 78) is present with 6 records occurring within 10 km.**	**Yes**
Anthochaera phrygia	Regent Honeyeater	E4A,P,2	CE	21	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 only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the two main 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.	**Yes**

					High – Search area is within the species predicted distribution and there are associated vegetation communities present (PCTs 78, 81, 267and 469) with 21 records occurring within 10km.	
Aphelocephala leucopsis	Southern Whiteface	V,P	V	2	Prefers the drier habitats of southern Australia. Commonly found in dry open forests and woodland, mallee, mulga and saltbush. Prefers sites with fallen timber or dead trees and stumps. **High – Search area is within the species predicted distribution and there are associated vegetation communities present (PCTs 70, 78, 81, 248, and 267) with 2 records occurring within 10km.**	**Yes**
Apus pacificus	Fork-tailed Swift	P	C,J,K	2	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 than 1 m to at least 300 m above ground and probably much higher. **Moderate – Search area is within the species predicted distribution but there are no known associated vegetation communities, however, two records occur within 10km.**	**Yes**
Ardeotis australis	Australian Bustard	E1,P		0	The Australian Bustard mainly occurs in inland Australia and is now scarce or absent from southern and south-eastern Australia. In NSW, they are mainly found in the north-west corner and less often recorded in the lower western and central west plains regions. Occasional vagrants are still seen as far east as the western slopes and Riverine plain. Breeding now only occurs in the north-west region of NSW. Mainly inhabits tussock and hummock grasslands, though prefers tussock grasses to hummock grasses; also occurs in low shrublands and low open grassy woodlands; occasionally seen in pastoral and cropping country, golf courses and near dams. Breeds on bare ground on low sandy ridges or stony rises in ecotones between grassland and protective shrubland cover; roosts on ground among shrubs and long grasses or under trees. **Moderate – Search area is within the species known distribution and associated vegetation communities (PCTs 26 and 248) are present. However, no records are within 10 km.**	**Yes**
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V,P		5	Dusky woodswallows are widespread in eastern, southern and south western Australia. The species occurs throughout most of New South Wales, but is sparsely scattered in, or largely absent from, much of the upper western region. Most breeding activity occurs on the western slopes of the Great Dividing Range. Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and groundcover of grasses or sedges and fallen woody debris. It has also been recorded in shrublands, heathlands and very occasionally in moist	**Yes**

					forest or rainforest. Also found in farmland, usually at the edges of forest or woodland. **High – Search area is within the species predicted distribution and there are associated vegetation communities present (PCTs 70, 78, 81, 248, 267, and 469) with five records occurring within 10km.**	
Botaurus poiciloptilus	Australasian Bittern	E1,P	E	0	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. **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km**	**No**
Burhinus grallarius	Bush Stone-curlew	E1,P		1	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 common however and, in the south-east, it is either rare or extinct throughout its former range. Inhabits open forests and woodlands with a sparse grassy ground layer 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. **High – Search area is within the species predicted distribution and there are associated vegetation communities present (PCTs 26, 70, 74, 78, 81, 248, 267, and 469) with a record occurring within 10km.**	**Yes**
Calidris acuminata	Sharp-tailed Sandpiper	P	C,J,K	6	The Sharp-tailed Sandpiper spends the non-breeding season in Australia with small numbers occurring regularly in New Zealand. Most of the population migrates to Australia, mostly to the south-east and are widespread in both inland and coastal locations and in both freshwater and saline habitats. Many inland records are of birds on passage. In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline saltlakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry. They use intertidal	**No**

					mudflats in sheltered bays, inlets, estuaries or seashores, and swamps and creeks lined with mangroves. They tend to occupy coastal mudflats mainly after ephemeral terrestrial wetlands have dried out, moving back during the wet season. They may be attracted to mats of algae and water weed either floating or washed up around terrestrial wetlands. **Low – Search area is outside the species predicted distribution and there are no associated vegetation communities present, however, 6 records occur within 10km.**	
Calidris ferruginea	Curlew Sandpiper	E4A,P	CE,C,J,K	0	In Australia, Curlew Sandpipers occur around the coasts and are also quite widespread inland, though in smaller numbers. Records occur in all states during the non-breeding period, and also during the breeding season when many non-breeding one-year old birds remain in Australia rather than migrating north. In NSW, they are widespread east of the Great Divide, especially in coastal regions. They are occasionally recorded in the Tablelands and are widespread in the Riverina and south-west NSW, with scattered records elsewhere. Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters. **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km**	**No**
Calidris ruficollis	Red-necked Stint	P	C,J,K	0	In Australasia, the Red-necked Stint is mostly found in coastal areas, including in sheltered inlets, bays, lagoons and estuaries with intertidal mudflats, often near spits, islets and banks and, sometimes, on protected sandy or coralline shores. They also occur in saltworks and sewage farms; saltmarsh; ephemeral or permanent shallow wetlands near the coast or inland, including lagoons, lakes, swamps, riverbanks, waterholes, bore drains, dams, soaks and pools in salt flats. They sometimes use flooded paddocks or damp grasslands. They have occasionally been recorded on dry gibber plains, with little or no perennial vegetation. **Low – Search area is within the predicted distribution of the species. However, no associated vegetation communities are present and no records within 10 km**	**No**
Callocephalon fimbriatum	Gang-gang Cockatoo	E1,P,3	E	0	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	**No**

					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. **Low – Search area is within the species known distribution, no associated vegetation communities are present, and no records occurs within 10 km.**	
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	V,P,2	V	23	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. An isolated population exists on Kangaroo Island, South Australia. 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. **High – Search area is within the species known distribution, there are an associated vegetation communities (PCTs 26, 70, 74, 78, 81, 267 and 469) present, and there are 23 records occurring within 10 km.**	**Yes**
Certhionyx variegatus	Pied Honeyeater	V,P			Pied Honeyeater is widespread throughout acacia, mallee and spinifex scrubs of arid and semi-arid Australia. Occasionally occurs further east, on the slopes and plains and the Hunter Valley, typically during periods of drought. Inhabits wattle shrub, primarily Mulga (*Acacia aneura*), mallee, spinifex and eucalypt woodlands, usually when shrubs are flowering; feeds on nectar, predominantly from various species of emu-bushes (*Eremophila* spp.); also, from mistletoes and various other shrubs (e.g. *Grevillea* spp.); also eats saltbush fruit, berries, seed, flowers and insects. Highly nomadic, following the erratic flowering of shrubs; can be locally common at times. **Low- search area is within the species known distribution. However, no associated vegetation communities are present and no records occur within 10 km**	**No**
Chthonicola sagittata	Speckled Warbler	V,P		26	The Speckled Warbler has a patchy distribution throughout south-eastern Queensland, the eastern half of NSW and into Victoria, as far west as the Grampians. The species is most frequently reported from the hills and tablelands of the Great Dividing Range, and rarely from the coast. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area. Pairs are sedentary and occupy a breeding territory of about ten hectares, with a slightly larger home-range when not breeding. Speckled Warblers often join mixed species feeding flocks in winter, with other species such as Yellow-rumped, Buff-rumped, Brown and Striated Thornbills.	**Yes**

					High – Search area is within the species predicted distribution and there are known associated vegetation communities (PCT 70, 74, 78, 81, 248, 267 and 469), with 26 records occurring within 10km.	
Circus assimilis	Spotted Harrier	V,P		23	The Spotted Harrier occurs throughout the Australian mainland, except in densely forested or wooded habitats of the coast, escarpment and ranges, and rarely in Tasmania. Individuals disperse widely in NSW and comprise a single population. Occurs in grassy open woodland including Acacia and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands. **High – Search area is within the species predicted distribution and there are known associated vegetation communities (PCTs 26, 70, 74, 78, 248 and 469). Also 23 records occur within 10km.**	**Yes**
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V,P	V	16	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. 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. **High – Search area is within the species predicted distribution and there are known associated vegetation communities (PCTs 70, 74, 78, 81, 248, 267 and 469). Also 16 records occur within 10km.**	**Yes**
Cuculus optatus	Oriental Cuckoo	P	C,J,K	0	The Oriental Cuckoo is not believed to breed in Australia. Mostly found in top end of Australia and coastal Queensland. **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km.**	**No**
Daphoenositta chrysoptera	Varied Sittella	V,P		4	The Varied Sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands. Distribution in NSW is nearly continuous from the coast to the far west. The Varied Sittella's population size in NSW is uncertain but is believed to have undergone a moderate reduction over the past several decades. Inhabits eucalypt forests and woodlands, especially those containing rough-barked species	**Yes**

					and mature smooth-barked gums with dead branches, mallee and Acacia woodland. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 26, 70, 74, 78, 81, 248, 267 and 469) present, and four records occur within 10 km.**	
Ephippiorhynchus asiaticus	Black-necked Stork	E1,P		0	In Australia, Black-necked Storks are widespread in coastal and subcoastal northern and eastern Australia, as far south as central NSW (although vagrants may occur further south or inland, well away from breeding areas). In NSW, the species becomes increasingly uncommon south of the Clarence Valley and rarely occurs south of Sydney. Since 1995, breeding has been recorded as far south as Bulahdelah. Floodplain wetlands (swamps, billabongs, watercourses and dams) of the major coastal rivers are the key habitat in NSW for the Black-necked Stork. Secondary habitat includes minor floodplains, coastal sandplain wetlands and estuaries. Black-necked Storks build large nests high in tall trees close to water. Trees usually provide clear observation of the surroundings and are at low elevation (reflecting the floodplain habitat). **Moderate – Search area is within the species known distribution and associated vegetation community (PCT 78) is present. However, no records are within 10 km.**	**Yes**
Epthianura albifrons	White-fronted Chat	V,P		1	The White-fronted Chat is found across the southern half of Australia, from southernmost Queensland to southern Tasmania, and across to Western Australia as far north as Carnarvon. Found mostly in temperate to arid climates and very rarely sub-tropical areas, it occupies foothills and lowlands up to 1000 m above sea level. In NSW, it occurs mostly in the southern half of the state, in damp open habitats along the coast, and near waterways in the western part of the state. Along the coastline, it is found predominantly in saltmarsh vegetation but also in open grasslands and sometimes in low shrubs bordering wetland areas. **Moderate – Search area is within the species known distribution and a record occurs within 10 km. However, there are no known associated vegetation communities present.**	**Yes**
Falco hypoleucos	Grey Falcon	V,P,2	V	0	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.	**No**

					Low – Search area is outside of the species distribution, but there are known associated vegetation communities (PCTs 26, 70, 78 and 248) present. There are no records within 10 km.	
Falco subniger	Black Falcon	V,P		9	The Black Falcon is widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. Some reports of 'Black Falcons' on the tablelands and coast of New South Wales are likely to be referable to the Brown Falcon. In New South Wales there is assumed to be a single population that is continuous with a broader continental population, given that falcons are highly mobile, commonly travelling hundreds of kilometres. The Black Falcon occurs as solitary individuals, in pairs, or in family groups of parents and offspring. **High – Search area is within the species known distribution, there is an associated vegetation community (PCTs 70, 74, 248, and 267) present, and nine records occur within 10 km.**	**Yes**
Gallinago hardwickii	Latham's Snipe	V,P	V,J,K	3	Latham's Snipe is a non-breeding visitor to south-eastern Australia and is a passage migrant through northern Australia (i.e. it travels through northern Australia to reach non-breeding areas located further south). The species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia (including the Adelaide plains and Mount Lofty Ranges, and the Eyre Peninsula). The range extends inland over the eastern tablelands in south-eastern Queensland (and occasionally from Rockhampton in the north), and to west of the Great Dividing Range in New South. The species is widespread in Tasmania and is found in all regions of Victoria except for the north-west. Most birds spend the non-breeding period at sites located south of the Richmond River in New South Wales. In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies. However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity. **Moderate – Search area is within the predicted distribution of the species however, no associated vegetation communities are present, but records are within 10 km**	**Yes**
Gelochelidon nilotica	Gull-billed Tern	P	C	0	The Gull-billed Tern occurs on all continents except Antarctica. Gull-billed Terns are found in freshwater swamps, brackish and salt lakes, beaches and estuarine mudflats, floodwaters, sewage farms, irrigated croplands and grasslands. They are only rarely found over the ocean. **Low – Search area is within the predicted distribution of the species however, no associated vegetation communities are present and no records within 10 km**	**No**

Glossopsitta porphyrocephala	Purple-crowned Lorikeet	V,P,3		0	The Purple-crowned Lorikeet occurs across the southern parts of the continent from Victoria to south-west Western Australia. It is uncommon in NSW, with records scattered across the box-ironbark woodlands of the Riverina and south west slopes, the River Red Gum forests and mallee of the Murray Valley as far west as the South Australian border, and, more rarely, the forests of the South Coast. The species is nomadic and most, if not all, records from NSW are associated with flowering events. Found in open forests and woodlands, particularly where there are large flowering eucalypts. Also recorded from mallee habitats. Feed primarily on nectar and pollen of flowering Eucalypts, including planted trees in urban areas. Breeds away from feeding areas, utilising hollow branches or holes in trees. Also roosts in dense vegetation up to several kilometres away from feeding areas. **Moderate – Search area is within the species known distribution and associated vegetation community (PCT 74) is present. However, no records are within 10 km.**	**Yes**
Glossopsitta pusilla	Little Lorikeet	V,P		8	The Little Lorikeet is distributed widely across the coastal and Great Divide regions of eastern Australia from Cape York to South Australia. NSW provides a large portion of the species' core habitat, with lorikeets found westward as far as Dubbo and Albury. Nomadic movements are common, influenced by season and food availability, although some areas retain residents for much of the year and 'locally nomadic' movements are suspected of breeding pairs. Forages primarily in the canopy of open *Eucalyptus* forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. **Moderate – Search area is within the species known distribution, there are associated vegetation communities (PCTs 74, 78, 81, 267 and 469) present. However, no records occur within 10 km**	**Yes**
Grantiella picta	Painted Honeyeater	V,P	V	1	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. **Moderate – Search area is within the species known distribution, and there is a record within 10 km. However, no associated vegetation communities are present.**	**Yes**
Grus rubicunda	Brolga	V,P		0	The Brolga was formerly found across Australia, except for the south-east corner, Tasmania and the south-western third of the country. It is still abundant in the northern tropics, but very sparse across the southern part of its range. Though Brolgas often feed in dry grassland or ploughed	**Yes**

					paddocks or even desert claypans, they are dependent on wetlands too, especially shallow swamps, where they will forage with their head entirely submerged. They feed using their heavy straight bill as a 'crowbar' to probe the ground or turn it over, primarily on sedge roots and tubers. They will also take large insects, crustaceans, molluscs and frogs. **Moderate – Search area is within the species known distribution, there are associated vegetation communities (PCTs 26 and 78) present. However, no records occur within 10 km**	
Haliaeetus leucogaster	White-bellied Sea-Eagle	V,P		1	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. 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). May be solitary, or live in pairs or small family groups consisting of a pair of adults and dependent young. **Moderate – Search area within the species known distribution and a record occurs within 10 km. However, no associated PCTs are present.**	**Yes**
Hamirostra melanosternon	Black-breasted Buzzard	V,P,3		0	The Black-breasted Buzzard is found sparsely in areas of less than 500mm rainfall, from north-western NSW and north-eastern South Australia to the east coast at about Rockhampton, then across northern Australia south almost to Perth, avoiding only the Western Australian deserts. Lives in a range of inland habitats, especially along timbered watercourses which is the preferred breeding habitat. Also hunts over grasslands and sparsely timbered woodlands. **Moderate – Search area is within the species known distribution and associated vegetation community (PCT 78) present, but no records occur within 10 km.**	**Yes**
Hieraaetus morphnoides	Little Eagle	V,P		19	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,	**Yes**

					woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. **Moderate – Search area is within the species known distribution and records are within 10 km. However, no associated vegetation communities are present.**	
Hirundapus caudacutus	White-throated Needletail	V,P	V,C,J,K	8	The White-throated Needletail is widespread in eastern and south-eastern. In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable, but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland. **Moderate – Search area is within the species known distribution and records are within 10 km. However, no associated vegetation communities are present.**	**Yes**
Hydroprogne caspia	Caspian Tern	P	J	0	Within Australia, the Caspian Tern has a widespread occurrence and can be found in both coastal and inland habitat (Higgins & Davies 1996). Widespread east of the Great Divide, mainly in coastal regions, and also in the Riverina and Lower and Upper Western Regions, with occasional records elsewhere (Higgins & Davis 1996). The Caspian Tern is mostly found in sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks. They also use artificial wetlands, including reservoirs, sewage ponds and saltworks. In offshore areas the species prefers sheltered situations, particularly near islands, and is rarely seen beyond reefs **Low – search area is within the predicted distribution of the species. No associate vegetation communities are present, and no records occurs with 10 km.**	**No**
Ixobrychus flavicollis	Black Bittern	V,P			The Black Bittern has a wide distribution, from southern NSW north to Cape York and along the north coast to the Kimberley region. The species also occurs in the south-west of Western Australia. In NSW, records of the species are scattered along the east coast, with individuals rarely being recorded south of Sydney or inland. Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation.	**No**

					Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves. **Absent – Search area is outside the species known distribution. No associated vegetation communities present and no records occurs within 10 km.**	
Lathamus discolor	Swift Parrot	E1,P	CE	2	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. 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*. **Moderate – Search area is within the species known distribution and records are within 10 km. However, no associated vegetation communities are present.**	**Yes**
Leipoa ocellata	Malleefowl	E1,P	V	0	The stronghold for this species in NSW is the mallee in the south west centred on Mallee Cliffs NP and extending east to near Balranald and scattered records as far north as Mungo NP. West of the Darling River a population also occurs in the Scotia mallee including Tarawi NR and Scotia Sanctuary and is part of a larger population north of the Murray River in South Australia. The population in central NSW has been significantly reduced through land clearance and fox predation and now occurs chiefly in Yathong, Nombinnie and Round Hill NRs and surrounding areas, though birds continue to survive in Loughnan NR. To the south of this area the species is probably locally extinct in such reserves as Pulletop NR (last recorded 1989), Ingalba NR (1982) and Buddigower NR (1990) and the intensely studied population at Yalgogrin was still known to have at least one active mound in 2017. Further east, a population continues to persist in the Goonoo forest near Dubbo, though the size of this population is unknown. Outside these areas, occasional records have been made in the Pilliga forests (most recently 1999), around Cobar (1991) and Goulburn River NP (1989) though the extent and status of populations in these areas are unknown. Predominantly inhabit mallee communities, preferring the tall, dense and floristically rich mallee found in higher rainfall (300 - 450 mm mean annual rainfall) areas. Utilises mallee with a spinifex understorey, but usually at lower densities than in areas with a shrub understorey. Less frequently found in other eucalypt woodlands, such as Inland Grey Box, Ironbark or Bimble Box Woodlands with thick understorey, or in other woodlands such dominated by Mulga or native Cypress Pine species.	**No**

					Low – search area is within the known distribution of the species. No associate vegetation communities are present, and no records occurs within 10 km.	
Limosa limosa	Black-tailed Godwit	V,P	E,C,J,K	0	The Black-tailed Godwit is a migratory wading bird that breeds in Mongolia and Eastern Siberia and flies to Australia for the southern summer, arriving in August and leaving in March. In NSW, it is most frequently recorded at Kooragang Island (Hunter River estuary), with occasional records elsewhere along the coast, and inland. Records in western NSW indicate that a regular inland passage is used by the species, as it may occur around any of the large lakes in the western areas during summer, when the muddy shores are exposed. The species has been recorded within the Murray-Darling Basin, on the western slopes of the Northern Tablelands and in the far north-western corner of the state. Primarily a coastal species. **Low – search area is within the known distribution of the species. No associate vegetation communities are present, and no records occurs within 10 km.**	**No**
Lophochroa leadbeateri	Pink Cockatoo	V,P,2	E	4	Found across the arid and semi-arid inland, from south-western Queensland south to north-west Victoria, through most of South Australia, north into the south-west Northern Territory and across to the west coast between Shark Bay and about Jurien. In NSW it is found regularly as far east as about Bourke and Griffith, and sporadically further east than that. Inhabits a wide range of treed and treeless inland habitats, always within easy reach of water. Feeds mostly on the ground, especially on the seeds of native and exotic melons and on the seeds of species of saltbush, wattles and cypress pines. Normally found in pairs or small groups, though flocks of hundreds may be found where food is abundant. Nesting, in tree hollows, occurs throughout the second half of the year; nests are at least 1 km apart, with no more than one pair every 30 square kilometres. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 26, 70, 74, 78, 81, 248, and 469) are present. Also, records are within 10 km.**	**Yes**
Lophoictinia isura	Square-tailed Kite	V,P,3		6	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. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 26, 70, 74, 78, 81, 248, 267 and 469) are present. Also, records are within 10 km.**	**Yes**

Melanodryas cucullata cucullata	South-eastern Hooded Robin	E1,P	E	2	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 possible. 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 other subspecies occur outside NSW. 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. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 26, 70, 74, 78, 81, 248, 267 and 469) are present. Also, records are within 10 km.**	**Yes**
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V,P		3	The Black-chinned Honeyeater has two subspecies, with only the nominate (gularis) occurring in NSW. The eastern subspecies extends south from central Queensland, through NSW, Victoria into south eastern South Australia, though it is very rare in the last state. In NSW it is widespread, with records from the tablelands and western slopes of the Great Dividing Range to the north-west and central-west plains and the Riverina. Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (*Eucalyptus sideroxylon*), White Box (*E. albens*), Inland Grey Box (*E. microcarpa*), Yellow Box (*E. melliodora*), Blakely's Red Gum (*E. blakelyi*) and Forest Red Gum (*E. tereticornis*). Also inhabits open forests of smooth-barked gums, stringybarks, ironbarks, river sheoaks (nesting habitat) and tea-trees. A gregarious species usually seen in pairs and small groups of up to 12 birds. Feeding territories are large making the species locally nomadic. Recent studies have found that the Black-chinned Honeyeater tends to occur in the largest woodland patches in the landscape as birds forage over large home ranges of at least 5 hectares. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 70, 74, 78, 81, 248, 267 and 469) are present. Also, records are within 10 km.**	**Yes**
Neophema chrysostoma	Blue-winged Parrot	V,P	V	2	Blue-winged Parrots occur in range of habitats from coastal to semi-arid and favour grasslands and grassy woodlands. Mainly found in Tasmania and Victoria but some populations can be found in Western NSW and Eastern SA. **Moderate – Search area is within the species known distribution and records are within 10 km. However, no associated vegetation communities are present.**	**Yes**

Neophema pulchella	Turquoise Parrot	V,P,3		10	The Turquoise Parrot's range extends from southern Queensland through to northern Victoria, from the coastal plains to the western slopes of the Great Dividing Range. Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 70, 74, 78, 81, 248, 267 and 469) are present. Also, records are within 10 km.**	**Yes**
Ninox connivens	Barking Owl	V,P,3		11	The Barking Owl is found throughout continental Australia except for the central arid regions. Although 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 plains and in some northeast coastal and escarpment forests. Many populations crashed 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 areas, hunting birds in garden trees and insects attracted to streetlights. 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 on these fertile riparian soils. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 26, 70, 74, 78, 81, 248, 267 and 469) are present. Also, records are within 10 km.**	**Yes**
Ninox strenua	Powerful Owl	V,P,3		1	The Powerful Owl is endemic to eastern and south-eastern Australia, mainly on the coastal side of the Great Dividing Range from Mackay to south-western Victoria. In NSW, it is widely distributed throughout the eastern forests from the coast inland to tablelands, with scattered records on the western slopes and plains suggesting occupancy prior to land clearing. Now at low densities throughout most of its eastern range, rare along the Murray River and former inland populations may never recover. The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. The Powerful Owl requires large tracts of forest or woodland habitat but can occur in fragmented landscapes as well. The species breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. It roosts by day in dense vegetation comprising species such as Turpentine *Syncarpia glomulifera*, Black She-oak *Allocasuarina littoralis*, Blackwood Acacia melanoxylon, Rough-barked Apple Angophora floribunda, Cherry Ballart *Exocarpus cupressiformis* and a number of eucalypt species. Powerful Owls nest in large tree hollows (at least 0.5 m deep), in large eucalypts (diameter at breast height of 80-240 cm) that are	**Yes**

					at least 150 years old. While the female and young are in the nest hollow the male Powerful Owl roosts nearby (10-200 m) guarding them, often choosing a dense "grove" of trees that provide concealment from other birds that harass him. **High – Search area is within the species known distribution and associated vegetation community (PCT 78) is present. Also, a record is within 10 km.**	
Oxyura australis	Blue-billed Duck	V,P		2	The Blue-billed Duck is endemic to south-eastern and south-western Australia. It is widespread in NSW, but most common in the southern Murray-Darling Basin area. Birds disperse during the breeding season to deep swamps up to 300 km away. It is generally only during summer or in drier years that they are seen in coastal areas. The Blue-billed Duck prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover. **Moderate – Search area is within the species known distribution and records are within 10 km. However, no associated vegetation communities are present.**	**Yes**
Pachycephala inornata	Gilbert's Whistler	V,P		0	The Gilbert's Whistler is sparsely distributed over much of the arid and semi-arid zone of inland southern Australia, from the western slopes of NSW to the Western Australian wheatbelt. The species was probably once distributed almost continuously across the woodlands and mallee of southern NSW, but this range has been greatly reduced. The Gilbert's Whistler occurs in a range of habitats within NSW, though the shared feature appears to be a dense shrub layer. It is widely recorded in mallee shrublands, but also occurs in box-ironbark woodlands, Cypress Pine and Belah woodlands and River Red Gum forests, though at this stage it is only known to use this habitat along the Murray, Edwards and Wakool Rivers. Within the mallee the species is often found in association with an understorey of spinifex and low shrubs including wattles, hakeas, sennas and hop-bushes. In woodland habitats, the understorey comprises dense patches of shrubs, particularly thickets of regrowth *Callitris* pine. Parasitic 'cherries' (*Exocarpus* species) appear to be an important habitat component in Belah and Red Gum communities, though in the latter case other dense shrubs, such as Lignum and wattles, are also utilised. **Moderate – Search area is within the species known distribution and associated vegetation community (PCT 267) is present. However, no records are within 10 km.**	**Yes**
Pandion cristatus	Eastern Osprey	V,P,3		0	The Osprey has a global distribution with four subspecies previously recognised throughout its range. Eastern Ospreys are found right around the Australian coastline, except for Victoria and Tasmania. They are common around the northern coast, especially on rocky shorelines, islands and reefs. The species is uncommon to rare or absent from closely settled	**No**

					parts of south-eastern Australia. There are a handful of records from inland areas. Favour coastal areas, especially the mouths of large rivers, lagoons and lakes. Nests are made high up in dead trees or in dead crowns of live trees, usually within one kilometre of the sea. **Low – Search area is within the predicted distribution of the species. However, no associated vegetation communities are present and no records within 10 km.**	
Petroica boodang	Scarlet Robin	V,P		0	The Scarlet Robin is found from south east Queensland to south east South Australia and also in Tasmania and south west Western Australia. In NSW, it occurs from the coast to the inland slopes. After breeding, some Scarlet Robins disperse to the lower valleys and plains of the tablelands and slopes. Some birds may appear as far west as the eastern edges of the inland plains in autumn and winter. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. The Scarlet Robin breeds on ridges, hills and foothills of the western slopes, the Great Dividing Range and eastern coastal regions; this species is occasionally found up to 1000 metres in altitude. The Scarlet Robin is primarily a resident in forests and woodlands, but some adults and young birds disperse to more open habitats after breeding. In autumn and winter many Scarlet Robins live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees. **Moderate – Search area is within the species known distribution and associated vegetation communities (PCTs 70, 74, 78, 81, 248, 267 and 469) are present. However, no records are within 10 km**	**Yes**
Petroica phoenicea	Flame Robin	V,P		2	The Flame Robin is endemic to south eastern Australia, and ranges from near the Queensland border to south east South Australia and also in Tasmania. In NSW, it breeds in upland areas and in winter, many birds move to the inland slopes and plains. It is likely that there are two separate populations in NSW, one in the Northern Tablelands, and another ranging from the Central to Southern Tablelands. Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. Prefers clearings or areas with open understoreys. In winter, birds migrate to drier more open habitats in the lowlands (i.e. valleys below the ranges, and to the western slopes and plains), in dry forests, open woodlands and in pastures and native grasslands, with or without scattered trees.	**Yes**

					Moderate – Search area is within the species known distribution and associated vegetation communities (PCTs 70, 248, and 267) are present. Also, records are within 10 km	
Petroica rodinogaster	Pink Robin	V,P		0	Pink Robins are endemic to (only found in) south-eastern Australia. In the breeding season (September to March) Pink Robins are seen singly or in pairs in deep gullies in dense shrub layers of damp and wet forests or rainforests. In winter, they are found in more open and drier habitats. **Low – Search area is within the predicted distribution of the species. However, no associated vegetation communities are present and no records within 10 km**	**No**
Phaethon rubricauda	Red-tailed Tropicbird	V,P	C,J	1	Ranges throughout tropical and subtropical zones of the Indian and West Pacific Oceans, breeding on oceanic islands. Lord Howe Island is said to have the greatest breeding concentration in the world. Breeds in coastal cliffs and under bushes in tropical Australia. Nests on cliffs of the northern hills and southern mountains on the main island at Lord Howe Island. Vagrant birds occur in coastal NSW waters, and occasionally even inland, particularly after storm events. **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present, however, a record is from within 10 km.**	**No**
Philomachus pugnax	Ruff	P	C,J,K	1	Rare vagrant visitor to Australia. Breeds in wetland habitat in northern Eurasia, and migrates to Africa, India and southeast Asia. **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present, however, a record is from within 10 km.**	**No**
Polytelis swainsonii	Superb Parrot	V,P,3	V	36	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. This species inhabits Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest. In the Riverina the birds 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 nest trees can be in open Box-Gum Woodland or isolated paddock trees. Species known to be used are Blakely's Red Gum, Yellow Box, Apple Box and Red Box. May forage up to 10 km from nesting sites, and feed in trees and understorey shrubs and on the ground and their diet consists mainly of grass seeds and herbaceous plants.	**Yes**

					High – Search area is within the species known distribution and associated vegetation communities (PCTs 26, 70, 74, 78, 81, 248, 267 and 469) are present. Also, records are within 10 km.	
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	V,P		213	The eastern subspecies (temporalis) occurs from Cape York south through Queensland, NSW and Victoria and formerly to the south east of South Australia. This subspecies also occurs in the Trans-Fly Region in southern New Guinea. In NSW, the eastern sub-species occurs on the western slopes of the Great Dividing Range, and on the western plains reaching as far as Louth and Balranald. It also occurs in woodlands in the Hunter Valley and in several locations on the north coast of NSW. It may be extinct in the southern, central and New England tablelands. Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Woodlands on fertile soils in coastal regions. Lives in family groups that consist of a breeding pair and young from previous breeding seasons. A group may consist of up to fifteen individuals. Feed on invertebrates and nests in several conspicuous, dome-shaped stick structures that are about the size of a football. A nest is used as a dormitory for roosting each night. Nests are maintained year-round, and old nests are often dismantled to build new ones. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 26, 70, 74, 78, 81, 248 and 267) are present. Also, records are within 10 km.**	**Yes**
Pycnoptilus floccosus	Pilotbird	V,P	V	0	Pilotbirds are endemic to south-east Australia, can occur above 600 m in the Brindabella Ranges in the Australian Capital Territory, and in the Snowy Mountains throughout New South Wales and north-east Victoria. Also occur in forests in the Blue Mountains and around the wetter forests of eastern Australia, to Dandenong near Melbourne. **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km.**	**No**
Rostratula australis	Australian Painted Snipe	E1,P	E	4	The Australian Painted Snipe is restricted to Australia. Most records are 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 Balldale and Wanganella. Other important locations with recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. 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. Forages nocturnally on mud-flats and in shallow water. Feeds on worms, molluscs, insects and some plant-matter.	**Yes**

					High – Search area is within the species known distribution and associated vegetation community (PCT 70) is present. Also, records are within 10 km.	
Stagonopleura guttata	Diamond Firetail	V,P	V	9	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, Central 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. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 26, 70, 74, 78, 81, 248, 267 and 469) are present. Also, records are within 10 km.**	**Yes**
Stictonetta naevosa	Freckled Duck	V,P		0	The Freckled Duck is found primarily in south-eastern and south-western Australia, occurring as a vagrant elsewhere. It breeds in large temporary swamps created by floods in the Bulloo and Lake Eyre basins and the Murray-Darling system, particularly along the Paroo and Lachlan Rivers, and other rivers within the Riverina. The duck is forced to disperse during extensive inland droughts when wetlands in the Murray River basin provide important habitat. The species may also occur as far as coastal NSW and Victoria during such times. Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds. Generally, rest in dense cover during the day, usually in deep water. Feed at dawn and dusk and at night on algae, seeds and vegetative parts of aquatic grasses and sedges and small invertebrates. Nesting usually occurs between October and December but can take place at other times when conditions are favourable. Nests are usually located in dense vegetation at or near water level. **Moderate – Search area is within the species known distribution and associated vegetation community (PCT 78) is present. However, no records are within 10 km.**	**Yes**
Thalasseus bergii	Crested Tern	P	J	0	Crested Terns are seen along coastal areas throughout Australia and Tasmania. Prefer Islands beaches, lakes and inlets. **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km.**	**No**

Tringa glareola	Wood Sandpiper	P	C,J,K	0	Wood Sandpipers are more numerous in the north than the south of Australia and are also found in New Guinea, Africa, the Indian subcontinent and South-east Asia. They breed widely across the north of Europe and Asia, mostly in Scandinavia, Baltic countries and Russia. They are the most abundant migratory wader in non-coastal areas of Asia. Wood Sandpipers are seen in small flocks or singly on inland shallow freshwater wetlands, often with other waders. They prefer ponds and pools with emergent reeds and grass, surrounded by tall plants or dead trees and fallen timber. **Low – Search area is within the predicted distribution of the species. However, no associated vegetation communities are present and no records within 10 km**	**No**
Tringa nebularia	Common Greenshank	E1,P	E,C,J,K	0	The Common Greenshank does not breed in Australia however, the species occurs in all types of wetlands and has the widest distribution of any shorebird in Australia. The Common Greenshank is found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass. Habitats include embayments, harbours, river estuaries, deltas and lagoons and are recorded less often in round tidal pools, rock-flats and rock platforms. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats. It will also use artificial wetlands, including sewage farms and saltworks dams, inundated rice crops and bores. The edges of the wetlands used are generally of mud or clay, occasionally of sand, and may be bare or with emergent or fringing vegetation, including short sedges and saltmarsh, mangroves, thickets of rushes, and dead or live trees. It was once recorded with Black-winged Stilts (Himantopus himantopus) in pasture but are generally not found in dry grassland. **Low – Search area is within the predicted distribution of the species. However, no associated vegetation communities are present and no records within 10 km**	**No**
Tringa stagnatilis	Marsh Sandpiper	P	C,J,K	11	The Marsh Sandpiper is found on coastal and inland wetlands throughout Australia. The species is widespread in coastal Queensland, but few records exist north of Cooktown. It is recorded in all regions of NSW but especially the central and south coasts and (inland) on the western slopes of Great Divide and western plains. The Marsh Sandpiper lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, saltpans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks. They are recorded less often at reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes. In north Australia they prefer intertidal mudflats (Higgins & Davies 1996), although surveys in Kakadu National Park recorded more birds around shallow freshwater lakes than in areas influenced by tide (Bamford 1988). At the Top End they often use	**Yes**

					ephemeral pools on inundated freshwater and tidal floodplains (Higgins & Davies 1996). Three of the five sites with highest recorded numbers are saltwater habitats (Hunter Estuary, NSW; Port Hedland Saltworks, Western Australia; Tullakool Evaporation Ponds, NSW) (Watkins 1993). **Moderate – Search area is within the species known distribution and records are within 10 km. However, no associated vegetation communities are present.**	
Tyto longimembris	Eastern Grass Owl	V,P,3		0	Eastern Grass Owls have been recorded occasionally in all mainland states of Australia but are most common in northern and north-eastern Australia. In NSW they are more likely to be resident in the north-east. Eastern Grass Owl numbers can fluctuate greatly, increasing especially during rodent plagues. Habitat and ecology Eastern Grass Owls are found in areas of tall grass, including grass tussocks, in swampy areas, grassy plains, swampy heath, and in cane grass or sedges on flood plains. **Low – Search area is within the predicted distribution of the species. However, no associated vegetation communities are present and no records within 10 km**	**No**
Tyto novaehollandiae	Masked Owl	V,P,3		1	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. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 26, 70, 74, 78, 81, 248, 267 and 469) are present. Also, records are within 10 km.**	**Yes**
Acacia ausfeldii	Ausfeld's Wattle	V		0	Found to the east of Dubbo in the Mudgee-Ulan-Gulgong area of the NSW South Western Slopes bioregion, with some records in the adjoining Brigalow Belt South, South Eastern Highlands and the Sydney Basin bioregions. Populations are recorded from Yarrobil National Park, Goodiman State Conservation Area and there is a 1963 record from Munghorn Gap Nature Reserve. A large population is also known from Tuckland State Forest to the northwest of Gulgong. Associated species include *Eucalyptus albens, E. blakelyi* and *Callitris* spp., with an understorey dominated by *Cassinia* spp. and grasses. **Moderate – Search area is within the species known distribution and associated vegetation community (PCT 267) is present. However, no records are within 10 km.**	**Yes**
Acacia meiantha		E1	E	0	The species is found in three disjunct populations, all within the Central Tablelands and within 100kms of each other. These populations include Clarence, which covers an area of approximately 1 hectare; Mullions Range, covering approximately 5 hectares; and Aarons Pass, which is confined to 2.5km of road easements.	**No**

					Low – Search area is within the predicted distribution of the species. However, no associated vegetation communities are present and no records within 10 km	
Acacia pendula	Acacia pendula population in the Hunter catchment	E2		0	This Hunter population is known to occur naturally as far east as Warkworth and extends northwest to Muswellbrook and to the west of Muswellbrook at Wybong. Only recorded to date at 6 locations: Jerrys Plains, Edderton, Wybong, Appletree Creek, Warkworth and Appletree Flat. These locations occur within the Muswellbrook and Singleton Local Government Areas, with the population potentially also occurring within the Mid-Western Regional and Upper Hunter LGA's. **Low – Search area is within the predicted distribution of the species. However, no associated vegetation communities are present and no records within 10 km**	**No**
Acacia phasmoides	Phantom Wattle	V	V	0	The species is only known from one location in NSW: Woomagarma National Park in Greater Hume Shire. It is also found at Burrowa-Pine Mountain National Park in Victoria. Grows in shrubby woodland on sandy, granitic soil near creeks or in rocky crevices. **Low – Search area is within the predicted distribution of the species. However, no associated vegetation communities are present and no records within 10 km**	**No**
Ammobium craspedioides	Yass Daisy	V	V	0	Found from near Crookwell on the Southern Tablelands to near Wagga Wagga on the South Western Slopes. Most populations are in the Yass region. Found in moist or dry forest communities, Box-Gum Woodland and secondary grassland derived from clearing of these communities. Grows in association with a large range of eucalypts (*Eucalyptus blakelyi, E. bridgesiana, E. dives, E. goniocalyx, E. macrorhyncha, E. mannifera, E. melliodora, E. polyanthemos, E. rubida*). **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km.**	**No**
Amphibromus fluitans	Floating Swamp Wallaby-grass	V	V	0	There are many historic collections in the City of Greater Albury. It has been recorded recently in lagoons beside the Murray River near Cooks Lagoon (Shire of Greater Hume), Mungabarina Reserve, East Albury, at Ettamogah, Thurgoona (Charles Sturt University Campus), near Narranderra, and also further west along the Murray River (near Mathoura) and in Victoria. There is a recent record of this species near Laggan in Upper Lachlan Shire. It is also found in Victoria and in Tasmania. *Amphibromus fluitans* grows mostly in permanent swamps. The species needs wetlands which are at least moderately fertile and which have some bare ground, conditions which are produced by seasonally-fluctuating water levels. Habitats in south-western NSW include swamp margins in mud,	**No**

					dam and tank beds in hard clay and in semi-dry mud of lagoons with *Potamogeton* and *Chamaeraphis* species. **Low – Search area is within the predicted distribution of the species. However, no associated vegetation communities are present and no records within 10 km**	
Austrostipa wakoolica	A spear-grass	E1	E	0	Confined to the floodplains of the Murray River tributaries of central-western and south-western NSW, with localities including Manna State Forest, Matong, Lake Tooim, Merran Creek, Tulla, Cunninyeuk and Mairjimmy State Forest (now part of South West Woodland Nature Reserve). Grows on floodplains of the Murray River tributaries, in open woodland on grey, silty clay or sandy loam soils; habitats include the edges of a lignum swamp with box and mallee; creek banks in grey, silty clay; mallee and lignum sandy-loam flat; open Cypress Pine forest on low sandy range; and a low, rocky rise. **Moderate – Search area is within the species known distribution and associated vegetation community (PCTs 26, 70 74 and 248) are present. However, no records are within 10 km.**	**Yes**
Bertya mollissima		E1	E	0	*Bertya mollissima* is endemic to north-eastern New South Wales (NSW) and has been known to occur historically from Mount Kaputar, Warrumbungle and Liverpool Ranges to the Scone and Singleton districts. Within the last ~20 years only four subpopulations have been known to be extant: Mount Kaputar summit and Waa Gorge in Mount Kaputar NP, Ukerbarley Aboriginal Area, and Bundella Lookout in Coolah Tops NP. Grows on steep hillsides and mountain summits in shallow sandy or gravelly soil in rock cracks and among boulders. The species typically occurs within heath or open woodland communities surrounded by Eucalyptus spp. between 500 to 1500 m above sea level. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Bertya opponens	Coolabah Bertya	V	V	0	This plant is currently known from only four scattered sites in NSW: one from private property near Coolabah in western NSW and two to the south of Narrabri on the North West Slopes, including the largest population in Jacks Creek State Forest. The fourth population was known from private property near Cobar but this population has not been seen since 1982 and is possibly now extinct. Coolabah Bertya occurs in a range of habitats including stony mallee ridges and cypress pine forest on red soils. The wide variation in habitat type between the populations makes the identification of critical habitat very difficult. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**

Boronia granitica	Granite Boronia	V,P	E	0	Granite Boronia occurs in scattered localities on the New England Tablelands and North West Slopes north from the Armidale area to the Stanthorpe district in southern Queensland. It can be locally common in appropriate habitat (e.g. Torrington). **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km.**	**No**
Bossiaea fragrans		E4A	CE	0	Currently only known from the Abercrombie Karst Conservation Reserve, south of Bathurst on the NSW central tablelands. It is highly restricted, with only a small number of known populations. Occurs on spilite, rhyolite or slate and volcanic substrates and is often associated with Red Stringybark (*Eucalyptus macrorhyncha*) - Red Box (*Eucalyptus polyanthemos*) woodland +/- White Box (*Eucalyptus albens*). **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Brachyscome muelleroides	Claypan Daisy	V	V	0	The Claypan Daisy occurs in the Wagga Wagga, Narranderra, Tocumwal and Walbundrie areas. Also occurs in north-central Victoria (only along the Murray from Tocumwal to the Ovens River). Grows in damp areas on the margins of claypans in moist grassland with *Pycnosorus globosus*, *Agrostis avenacea* and *Austrodanthonia duttoniana*. Also recorded from the margins of lagoons in mud or water, and in association with *Calotis anthemoides.* **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km.**	**No**
Caesia parviflora var. minor	Small Pale Grass-lily	E1		0	This variety occurs uncommonly in Tasmania, southern Victoria and south-east South Australia with an outlying population in NSW, in Barcoongere State Forest, between Grafton and Coffs Harbour. This variety may be more common than currently known, as Pale Grass-lilies are often not identified to variety level. Found in damp places in open forest on sandstone. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Caladenia arenaria	Sand-hill Spider Orchid	E1,P,2	E	0	*Caladenia arenaria* is found mostly on the south west plains and western south west slopes. The original description is of a plant from Nangus, west of Gundagai (1865) and there is a report of the species from Adelong near Tumut. A record near Cootamundra needs verifying. The Sand-hill Spider Orchid is currently only known to occur in the Riverina between Urana and Narrandera. Occurs in woodland with sandy soil, especially that dominated by White Cypress Pine (*Callitris glaucophylla*).	**No**

					Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km	
Caladenia concolor	Crimson Spider Orchid	E1,P,2	V	0	The current NSW Scientific Committee listing incorporates two populations which have each been described as separate species by D.L. Jones. One of these populations comprises a few hundred plants on private property near Bethungra and the other of about 100 plants occurs in Burrinjuck Nature reserve. The other occurrences of the Crimson Spider Orchid in NSW are from the Nail Can Hill Crown Reserve near Albury. The species also occurs at two localities in Victoria near Beechworth and Chiltern. Habitat is regrowth woodland on granite ridge country that has retained a high diversity of plant species, including other orchids. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Caladenia rosella	Rosella Spider Orchid	E4,P,2	E	0	The single NSW collection of the Rosella Spider Orchid (located in Albury) is undated but is estimated to have been collected before 1896. Today the species is found near Melbourne in Victoria but is listed as endangered because less than 200 plants are known to exist. In Victoria, the species is found in woodlands and low forests of Red Box (*Eucalyptus polyanthemos*), Long-leafed Box (*E. goniocalyx*) and Red Stringybark (*E. macrorhyncha)* in well-drained, skeletal soils. **Low – Search area is within the species predicted distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Caladenia tessellata	Thick Lip Spider Orchid	V,P,2	V	0	The Thick Lip Spider Orchid is known from the Sydney area (old records), Wyong, Ulladulla and Braidwood in NSW. Populations in Kiama and Queanbeyan are presumed extinct. It was also recorded in the Huskisson area in the 1930s. The species occurs on the coast in Victoria from east of Melbourne to almost the NSW border. Generally found in grassy sclerophyll woodland on clay loam or sandy soils, though the population near Braidwood is in low woodland with stony soil. **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km.**	**No**
Calotis glandulosa	Mauve Burr-daisy	V	V	2	The distribution of the Mauve Burr-daisy is centred on the Monaro and Kosciuszko regions. There are three known sites in the upper Shoalhaven catchment. There are old and possibly dubious records from near Oberon, the Dubbo area and Mt Imlay. Found in montane and subalpine grasslands in the Australian Alps. Found in subalpine grassland (dominated by Poa spp.), and montane or natural temperate grassland dominated by Kangaroo	**No**

					Grass (*Themeda australis*) and Snow Gum (Eucalyptus pauciflora) Woodlands on the Monaro and Shoalhaven area. **Absent – Search area is outside of the species known distribution, there are no associated vegetation communities present however, records are from within 10 km.**	
Carex raleighii	Raleigh Sedge	E1		0	In NSW Raleigh Sedge is found only in areas above about 1000 metres on the Southern Tablelands. Most populations are in Kosciuzsko National Park (eg. Charlottes Pass area, Muellers Pass, Tantangara area and the upper Tooma and Tumut valleys). Also occurs in vicinity of Snowy Plain (private land and travelling stock reserve) and on the coastal escarpment at the headwaters of Tantawangalo Creek within South East Forests National Park. Grows in sphagnum bogs and high mountain wetlands, as well as damp grasslands and stream-edges of sub-alpine plains. **Absent – Search area is outside of the species known distribution, there are no associated vegetation communities present however, records are from within 10 km.**	**No**
Cassinia heleniae		E1	E	0	*Cassinia heleniae* is confined to a small area around Torrington in the north western slopes of New South Wales **Absent – Search area is outside of the species known distribution, there are no associated vegetation communities present however, records are from within 10 km.**	**No**
Commersonia procumbens		V	V	3	Endemic to NSW, mainly confined to the Dubbo-Mendooran-Gilgandra region, but also in the Pilliga and Nymagee areas. Recent collections made from the Upper Hunter region, and additional populations found in Goonoo SCA in response to the 2007 fires. Grows in sandy sites, often along roadsides. Recorded in *Eucalyptus dealbata* and *Eucalyptus sideroxylon communities, Melaleuca uncinata* scrub, under mallee eucalypts with a *Calytrix tetragona* understorey, and in a recently burnt Ironbark and *Callitris* area. Also in *Eucalyptus fibrosa* subsp. *nubila, Eucalyptus dealbata*, *Eucalyptus albens* and *Callitris glaucophylla* woodlands north of Dubbo. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 70, 267 and 469) are present. Also, records are within 10 km.**	**Yes**
Cullen parvum	Small Scurf-pea	E1		0	The Small Scurf-pea is known in NSW from only two herbarium collections: one from Wagga Wagga in 1884 and the other from Jindera (near Albury) in 1967. A small population was recently reported from near Jerilderie (although it has not been relocated). In recent years, two populations have been recorded in travelling stock reserves south-west of Wagga Wagga, and a population reputedly exists on a roadside near Galong. Another population has recently been discovered on private land near Young. Large populations have been recorded in grassy gaps in the Red Gum Woodlands of Barmah State Park, just across the border in Victoria. Extensive suitable habitat probably occurs across the border in NSW. In	**Yes**

					known populations in Victoria and NSW, plants are found in grassland, River Red Gum (*Eucalyptus camaldulensis*) Woodland or Box-Gum Woodland, sometimes on grazed land and usually on table drains or adjacent to drainage lines or watercourses, in areas with rainfall of between 450 and 700 mm. **Moderate – Search area is within the species known distribution and associated vegetation community (PCT 74) is present. However, no records are within 10 km.**	
Cymbidium canaliculatum	Cymbidium canaliculatum population in the Hunter Catchment	E2,P,2		0	The Hunter population is known to occur naturally as far south as Weston and Pokolbin in the Lower Hunter, which represents its south-eastern geographic limit, but appears to be more centred in the Upper Hunter, predominantly north of Singleton. In this area it is chiefly known from an area bounded by Ravensworth, Muswellbrook, Denman and Sandy Hollow, but extends northwards to the Aberdeen – Scone – Wingen districts. Isolated occurrences are also known from the Merriwa plateau, Bylong valley and the Gungal area near Goulburn River (including the Goulburn River National Park). Nevertheless, the population is defined as occurring in the Hunter Catchment, and as such may be present in any of the local government areas of Cessnock, Maitland, Dungog, Singleton, Muswellbrook, Newcastle, Port Stephens, part of Mid-western Regional, and part of Upper Hunter. The vast majority of individuals (>90%) occur on private property, scattered across 30-40 sites, predominantly in the Muswellbrook and Upper Hunter LGAs. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Cynanchum elegans	White-flowered Wax Plant	E1	E	0	Restricted to eastern NSW where it is distributed from Brunswick Heads on the north coast to Gerroa in the Illawarra region. The species has been recorded as far west as Merriwa in the upper Hunter River valley. The White-flowered Wax Plant usually occurs on the edge of dry rainforest vegetation. Other associated vegetation types include littoral rainforest; Coastal Tea-tree *Leptospermum laevigatum* – Coastal Banksia *Banksia integrifolia* subsp. integrifolia coastal scrub; Forest Red Gum *Eucalyptus tereticornis* aligned open forest and woodland; Spotted Gum *Corymbia maculata* aligned open forest and woodland; and Bracelet Honeymyrtle *Melaleuca armillaris* scrub to open scrub. **Low – Search area is within the species predicted distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Dichanthium setosum	Bluegrass	V	V	0	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. Associated species include *Eucalyptus albens*, *Eucalyptus melanophloia*, *Eucalyptus*	**Yes**

					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. **Moderate – Search area is within the species known distribution and associated vegetation community (PCTs 26, 78 and 81) are present. However, no records are within 10 km.**	
Digitaria porrecta	Finger Panic Grass	E1		0	Generally occupies deep, low-nutrient sands, often those subject to periodic inundation or where water tables are relatively high. It occurs in dry sclerophyll woodland with dry heath understorey. It also occurs as an emergent in dry or wet heathland. Often where this species occurs, it is a community dominant. **Moderate – Search area is within the species known distribution and associated vegetation community (PCTs 26, and 81) are present. However, no records are within 10 km.**	**Yes**
Diuris tricolor	Pine Donkey Orchid	V,P,2		17	Sporadically distributed on the western slopes of NSW, extending from south of Narrandera all the way to the north of NSW. Localities in the south include Red Hill north of Narrandera, Coolamon, and several sites west of Wagga Wagga. Condobolin-Nymagee road, Wattamondara towards Cowra, Eugowra, Girilambone, Dubbo and Cooyal, in the Central West. Pilliga SCA, Pilliga National Park and Bibblewindi State Forest in the north (and extending into Queensland) and Muswellbrook in the east. Disturbance regimes are not known, although the species is usually recorded from disturbed habitats. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 70, 81, 248, 267 and 469) are present. Also, records are within 10 km.**	**Yes**
Eriocaulon australasicum	Austral Pipewort	E1	E	0	Known in NSW from widely separated populations: a very early “Murray River” collection and recent collections near Braidwood and in the Pilliga. The species is known from three sites in Victoria, one of which just extends into South Australia. Known from very few collections, with the type of habitat described as “wet places along the Murray towards junction of Murrumbidgee”. In populations near Braidwood and in the Pilliga, it grows in mud in ephemeral water bodies. **Low – Search area is within the species predicted distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Eucalyptus aggregata	Black Gum	V	V	0	Black Gum is found in the NSW Central and Southern Tablelands, with small isolated populations in Victoria and the ACT. In NSW it occurs in the South Eastern Highlands Bioregion and on the western fringe of the Sydney Basin Bioregion. Black Gum has a moderately narrow distribution,	**No**

					occurring mainly in the wetter, cooler and higher parts of the tablelands, for example in the Blayney, Crookwell, Goulburn, Braidwood and Bungendore districts. Grows on alluvial soils, on cold, poorly-drained flats and hollows adjacent to creeks and small rivers. Often grows with other cold-adapted eucalypts, such as Snow Gum or White Sallee, Manna or Ribbon Gum, Candlebark, Black Sallee and Swamp Gum. Black Gum usually occurs in an open woodland formation with a grassy groundlayer dominated either by River Tussock or Kangaroo Grass, but with few shrubs. **Low – Search area is within the species predicted distribution. However, no associated vegetation communities are present and no records within 10 km**	
Eucalyptus alligatrix subsp. alligatrix		V	V	0	Only known from a single location south-west of Rylstone; however, the species has reportedly been widely propagated and planted in the Rylstone area. The population is confined to an area of a few hectares where an estimated 3,000 to 4,500 trees survive. Most of the population consists of moderately dense regenerating stands following previous clearing, but there are also larger scattered paddock trees, probably pre-dating European settlement. Grows in dry sclerophyll woodland on shallow relatively infertile soils (grey brown loam with ironstone). It may have been part of a more-extensive open woodland community prior to the commencement of clearing and grazing. The landform consists of undulating low to steep hills. Soils are shallow skeletal sands and loams on steep slopes. Vegetation is a sub-alpine woodland. **Low – Search area is within the species predicted distribution however, no associated vegetation communities are present and no records within 10 km**	**No**
Eucalyptus camaldulensis	Eucalyptus camaldulensis population in the Hunter catchment	E2		0	The Hunter population occurs from the west at Bylong, south of Merriwa, to the east at Hinton, on the bank of the Hunter River, in the Port Stephens local government area. It has been recorded in the local government areas of Lithgow, Maitland, Mid-Western Regional, Muswellbrook, Port Stephens, Singleton and Upper Hunter. May occur with *Eucalyptus tereticornis, Eucalyptus melliodora, Casuarina cunninghamiana subsp. cunninghamiana* and *Angophora floribunda.* **Absent – The search area is not within the Hunter catchment area.**	**No**
Eucalyptus cannonii	Capertee Stringybark	V		0	The Capertee Stringybark is predominantly restricted to the central tablelands and slopes of NSW between the Golden Highway in the north, and the Mitchell Highway in the south. The species' distribution is bounded from east of Bathurst, to Wallerwang near Lithgow, north along the western edge of Wollemi National Park and north-west to Mudgee; isolated occurrences are known from a short way north of Goulburn River National Park between Dunedoo and Merriwa. Within this area the species is often locally frequent.	**No**

					Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km	
Eucalyptus robertsonii subsp. hemisphaerica	Robertson's Peppermint	V	V	0	Known only from the central tablelands of NSW, at small disjunct localities from north of Orange to Burraga. Locally frequent in grassy or dry sclerophyll woodland or forest, on lighter soils and often on granite. Usually found in closed grassy woodlands in locally sheltered sites. Habitats include quartzite ridges, upper slopes and a slight rise of shallow clay over volcanics. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Euphrasia arguta		E4A	CE	0	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'. **Moderate – Search area is within the species predicted distribution and associated vegetation community (PCT 267) is present. However, no records are within 10 km.**	**No**
Euphrasia collina subsp. muelleri	Mueller's Eyebright	E1	E	0	Once widespread in south-eastern Australia, Mueller's Eyebright is now known only from the Mornington Peninsula near Melbourne. In NSW it was recorded more than 100 years ago in the upper Murray and McIntyre Rivers and near Dorrigo and Cootamundra. The only NSW collections in the past 50 years were made in the vicinity of the Tinderry Range between Canberra and Cooma (1970) and between Uralla and Tamworth (1987). Little is known about the habitat this species preferred, although there is a reference to "damp places" in an early von Mueller collection. Extant populations in Victoria occur in heathy woodland. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Grevillea wilkinsonii	Tumut Grevillea	E4A	CE	0	The Tumut Grevillea has a highly restricted distribution in the NSW South-west Slopes region. Its main occurrence is along a 6 km stretch of the Goobarragandra River approximately 20 km east of Tumut where about 1,000 plants are known. The other occurrence is a small population that straddles the boundary of two private properties at Gundagai where only eight mature plants survive. At the Goobarragandra River sites the species	**No**

					generally grows in close proximity to the water, at altitudes between 310 and 340 m. Most healthy adult plants occur in open sunny areas, and those plants found under the canopy of dense vegetation tend to be spindly and are sometimes subject to sooty mould infestations. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	
Homoranthus darwinioides	Fairy Bells	V	V	1	Rare in the central tablelands and western slopes of NSW, occurring from Putty to the Dubbo district. It is found west of Muswellbrook between Merriwa and Bylong, and north of Muswellbrook to Goonoo SCA. The species has been collected from Lee's Pinch, but not relocated at its original locality north of Mt Coricudgy above the headwaters of Widden Brook. Grows in in various woodland habitats with shrubby understoreys, usually in gravely sandy soils. Landforms the species has been recorded growing on include flat sunny ridge tops with scrubby woodland, sloping ridges, gentle south-facing slopes, and a slight depression on a roadside with loamy sand. **High – Search area is within the species known distribution and associated vegetation community (PCT 469) is present. Also, records are within 10 km.**	**Yes**
Homoranthus prolixus	Granite Homoranthus	V	V	0	Occurs in scattered locations between Inverell and Manilla. This species is conserved in Ironbark Nature Reserve, Gwydir River National Park and Tingha Plateau and Goonoowigal State Conservation Areas west of Guyra. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Indigofera efoliata	Leafless Indigo	E1,3	E	10	Very rare and was presumed extinct with the last known collection made in 1955 with three unvouchered reports from Goonoo State Forest in 1963. In spring 2021 the species was rediscovered near Geurie. *Indigofera efoliata* was only known only from a few collections in the Dubbo area. Known sites were located along the Dubbo to Minore railway line and road, on Wallaringa and Geurie properties and in Goonoo State Forest. **High – Search area is within the species known distribution and associated vegetation community (PCT 248) is present. Also, records are within 10 km.**	**Yes**
Lepidium aschersonii	Spiny Peppercress	V	V	0	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. The	**Yes**

					Spiny Peppercress occurs in periodically wet sites such as gilgai depressions and the margins of freshwater and saline marshes and shallow lakes, usually on heavy clay soil. **Moderate – Search area is within the species predicted distribution and associated vegetation communities (PCTs 74 and 81) are present. However, no records are within 10 km.**	
Leucochrysum albicans subsp. tricolor	Hoary Sunray	E1	E	0	Endemic to south-eastern Australia, where it is currently known from three geographically separate areas in Tasmania, Victoria and south-eastern NSW and ACT. In NSW it currently occurs on the Southern Tablelands adjacent areas in an area roughly bounded by Albury, Bega and Goulburn, with a few scattered localities know from beyond this region. Occurs in a wide variety of grassland, woodland and forest habitats, generally on relatively heavy soils. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Monotaxis macrophylla	Large-leafed Monotaxis	E1		0	Large-leafed Monotaxis is recorded from several highly disjunct populations in NSW: eastern edge of Deua NP (west of Moruya), Bemboka portion of South East Forests National Park, Cobar area (Hermitage Plains), the Tenterfield area, and Woodenbong (near the Queensland border). It is also in Queensland. A recent record from the eastern spur of the Nandewar Range is in the Namoi catchment. Monotaxis macrophylla displays the properties of a fire ephemeral species in many ways. Germination is stimulated by the passage of fire, individual plants have a short life span, a large biomass is produced in a short period of time, flowering occurs shortly after germination, and populations do not persist in the absence of fire. **Moderate – Search area is within the species predicted distribution and associated vegetation community (PCT 469) is present. However, no records are within 10 km.**	**Yes**
Muehlenbeckia sp. Mt Norman	Scrambling Lignum	V		0	Sporadic after disturbance on North Coast, Northern and Central Tablelands. Mostly in rocky, higher-altitude sites following disturbance such as fire or clearing for powerlines. An old collection from Wallerawang possibly now underwater in artificial lake. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Myriophyllum implicatum		E4A,2		0	This species was previously thought to be extinct in NSW; however, the plant was recently discovered in the Pilliga National Park, south of Narrabri. It is known from Queensland and is listed as 'Least Concern' under that States Nature Conservation Act (1992). Occurs in moist situations, extending away from fresh water. Recent population found in a large open partly inundated gilgai depression on cracking clay soil.	**No**

					Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km	
Persoonia marginata	Clandulla Geebung	V,P	V	0	The Clandulla Geebung occurs between Kandos and Clarence in the western Blue Mountains. Populations are largely disjunct and include Clandulla, Ben Bullen and Sunny Corner State Forests; isolated populations have also been recorded from Turon and Gardens of Stone National Parks. Grows in dry sclerophyll forest and woodland communities on sandstone. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Pilularia novae-hollandiae	Austral Pillwort	E1,3		0	In NSW, Austral Pillwort has been recorded from suburban Sydney, Khancoban, the Riverina between Albury and Urana (including Henty, Walbundrie, Balldale and Howlong), Oolambeyan National Park near Carathool and at Lake Cowal near West Wyalong. The populations at Lake Cowal and Oolambeyan NP are the only known extant populations in NSW, although the species is obscure and has possibly been overlooked elsewhere. The species has also been recorded in the Australian Capital Territory, Victoria, Tasmania, South Australia and Western Australia. Austral Pillwort grows in shallow swamps and waterways, often among grasses and sedges. It is most often recorded in drying mud as this is when it is most conspicuous. **Moderate – Search area is within the species predicted distribution and associated vegetation community (PCT 74) is present. However, no records are within 10 km.**	**Yes**
Pimelea bracteata		E4A	CE	0	*Pimelea bracteata* is endemic to New South Wales where it is currently known from the Southern Tablelands. The main areas of occurrence of *P. bracteata* are in the northern area of Kosciuszko National Park, Scabby Range Nature Reserve, neighbouring State Forests and freehold land. *Pimelea bracteata* occurs in wetlands and along waterways and stream edges in high altitude treeless subalpine valleys. It can also occur in wet heathland and closed heath. **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km.**	**No**
Polygala linariifolia	Native Milkwort	E1		0	North from Copeton Dam and the Warialda area to southern Queensland; also found on the NSW north coast near Casino and Kyogle, and there is an isolated population in far western NSW near Weebah Gate, west of Hungerford. This species also occurs in Western Australia. In the Pilliga area, this species has been recorded in Fuzzy Box woodland, White Cypress Pine-Bulloak - Ironbark woodland, Rough-barked Apple riparian forb-grass open forest, and Ironbark - Brown Bloodwood shrubby woodland.	**No**

					Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km	
Pomaderris cotoneaster	Cotoneaster Pomaderris	E1	E	0	Cotoneaster Pomaderris has a very disjunct distribution, being known from the Nungatta area, northern Kosciuszko National Park (near Tumut), the Tantawangalo area in South-East Forests National Park and adjoining freehold land, Badgery's Lookout near Tallong, Bungonia State Conservation Area, the Yerranderie area, Kanangra-Boyd National Park, the Canyonleigh area and Ettrema Gorge in Morton National Park. The species has also been recorded along the Genoa River in Victoria. Cotoneaster Pomaderris has been recorded in a range of habitats in predominantly forested country. The habitats include forest with deep, friable soil, amongst rock beside a creek, on rocky forested slopes and in steep gullies between sandstone cliffs. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Pomaderris queenslandica	Scant Pomaderris	E1		0	Widely scattered but not common in north-east NSW and in Queensland. It is known from several locations on the NSW north coast and a few locations on the New England Tablelands and North West Slopes, including near Torrington and Coolata. Found in moist eucalypt forest or sheltered woodlands with a shrubby understorey, and occasionally along creeks. **Moderate – Search area is within the species predicted distribution and associated vegetation communities (PCTs 78 and 469) are present. However, no records are within 10 km.**	**Yes**
Prasophyllum petilum	Tarengo Leek Orchid	E1,P,2	E	0	Natural populations are known from a total of five sites in NSW. These are near Boorowa, Queanbeyan area, Ilford, Delegate and a newly recognised population c.10 km west of Muswellbrook. It also occurs at Hall in the Australian Capital Territory. This species has also been recorded at Bowning Cemetery where it was experimentally introduced, though it is not known whether this population has persisted. Grows in open sites within Natural Temperate Grassland at the Boorowa and Delegate sites. Also grows in grassy woodland in association with River Tussock, Black Gum and tea-trees near Queanbeyan and within the grassy groundlayer dominated by Kangaroo Grass under Box-Gum Woodland at Ilford (and Hall, ACT). **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Prasophyllum sp. Wybong		P	CE	0	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.	**Yes**

					Moderate – Search area is within the species predicted distribution and associated vegetation communities (PCTs 81 and 267) are present. However, no records are within 10 km.	
Pterostylis cobarensis	Greenhood Orchid	V,P,2		0	Recorded from Bourke, Nyngan, Cobar, Nymagee, Warren, Gilgandra, Narrabri, Coonabarabran districts. Recorded from a number of reserves and state forests including Mutawintji, Gundabooka, Culgoa, Warrumbungles National Parks, Quanda, Yathong Nature Reserves, Mt Grenfell Historic Site and Bimbilwindi and Pilliga East State Forests. There are also records from the Darling Downs district of Queensland. Habitats are eucalypt woodlands, open mallee or *Callitris* shrublands on low stony ridges and slopes in skeletal sandy-loam soils.' **Moderate – Search area is within the species predicted distribution and associated vegetation community (PCT 70) is present. However, no records are within 10 km.**	**Yes**
Pultenaea humilis	Dwarf Bush-pea	V		0	*Pultenaea humilis* is rare in New South Wales and Tasmania, but relatively common in Victoria. In NSW, *Pultenaea humilis* is currently known from three confirmed localities in the NSW South Western Slopes bioregion. The extent of occurrence of *Pultenaea humilis* in NSW is estimated to be approximately 6000 km2. However, the total population of *Pultenaea humilis* in NSW is not known. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Senecio garlandii	Woolly Ragwort	V		0	This daisy is found between Temora, Bethungra and Albury and possibly Burrinjuck near Yass. The largest populations are at The Rock and Mt Tabletop (and surrounds). There is a single population in Victoria at Chiltern. Woolly Ragwort occurs on sheltered slopes of rocky outcrops. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km**	**No**
Swainsona murrayana	Slender Darling Pea	V	V	0	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. **Moderate – Search area is within the species predicted distribution and associated vegetation communities (PCTs 26, 81 and 248) are present. However, no records are within 10 km.**	**Yes**
Swainsona recta	Small Purple-pea	E1	E	0	Small Purple-pea was recorded historically from places such as Carcoar, Culcairn and Wagga Wagga where it is probably now extinct. Populations	**Yes**

					still exist in the Queanbeyan and Wellington-Mudgee areas. Over 80% of the southern population grows on a railway easement. It is also known from the ACT and a single population of four plants near Chiltern in Victoria. Grows in association with understorey dominants that include Kangaroo Grass, poa tussocks and spear-grasses. **Moderate – Search area is within the species predicted distribution and associated vegetation community (PCT 267) is present. However, no records are within 10 km**	
Swainsona sericea	Silky Swainson-pea	V		0	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. **Moderate – Search area is within the species predicted distribution and associated vegetation communities (PCTs 26, 70, 74, 248, 267 and 469) are present. However, no records are within 10 km.**	**Yes**
Thesium australe	Austral Toadflax	V	V	0	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 **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km.**	**No**
Tylophora linearis		V	E	2	Occurs from southern Queensland into central NSW, as far south near Temora with the majority of records occurring in the central western region. Records from Goonoo, Pilliga West, Pilliga East, Bibblewindi, Cumbil and 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. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 70 and 469) are present. Also, records are within 10 km.**	**Yes**
Zieria ingramii	Keith's Zieria	E1	E	0	Known predominately from Goonoo SCA, about 40 km north-east of Dubbo. An old record exists from a locality east of Mogriguy on the Mendooran Road, however searches of the area have not relocated the species. Grows in dry sclerophyll forest on light sandy soils. All known	**No**

					populations have been recorded in Eucalyptus-Callitris woodland or open forest with a shrubby to heathy understorey. **Low – Search area is within the species known distribution. However no associated vegetation communities are present and no records within 10 km.**	
Zieria obcordata	Granite Zieria	E1	E	0	Occurs at two sites with a geographic range of 105 km. These are in the Wuuluman area near Wellington, comprising of a single subpopulation over 3 sites comprising up to 200 plants and Crackerjack Rock/Rock Forests area NW of Bathurst, with a subpopulation comprising of 14 sites, totaling to approximately 700 adults plants after good seasons. Grows in eucalypt woodland or shrubland dominated by species of Acacia on rocky hillsides. Also occurs in Eucalyptus and Callitris dominated woodland with an open, low shrub understorey, on moderately steep, mainly west to north-facing slopes in sandy loam amongst granite boulders. The altitude range of sites is 500 to 830 metres. Associated vegetation includes Eucalyptus blakelyi, Brachychiton populneus and Acacia implexa woodland with pockets of low shrub understorey. Also, in *E. goniocalyx, E. blakelyi, E. macrorhyncha, A. doratoxylon, A. vestita* and *Callitris glaucophylla* woodland with a shrubby understorey. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km.**	**No**
Keyacris scurra	Key's Matchstick Grasshopper	E1	E	0	Key's Matchstick grasshopper was originally distributed from Victoria to Orange (NSW) across the wheat/sheep belt, typically recorded in native grasslands and grassy woodland. Typically found in native grasslands and grassy woodlands but it has also been recorded in other vegetation associations usually containing a native grass understory (especially kangaroo grass *Themeda triandra*) and known food plants (particularly Asteraceae). **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km.**	**No**
Synemon plana	Golden Sun Moth	V	V	0	The Golden Sun Moth's NSW populations are found in the area between Queanbeyan, Gunning, Young and Tumut. The species' historical distribution extended from Bathurst (central NSW) through the NSW Southern Tablelands, through to central and western Victoria, to Bordertown in eastern South Australia. Occurs in Natural Temperate Grasslands and grassy Box-Gum Woodlands in which groundlayer is dominated by wallaby grasses *Austrodanthonia* spp. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km.**	**No**

Aepyprymnus rufescens	Rufous Bettong	V,P		0	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. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km.**	**No**
Bettongia lesueur graii	Boodie, Burrowing Bettong (mainland)	E4,P	X	0	The mainland subspecies (*graii*) is now extinct; however, two subspecies occur on islands off the coast of Western Australia; one undescribed subspecies on Boodie and Barrow Islands off the Pilbara coast; the other (*lesueur*) on Bernier and Dorre Islands off Shark Bay. Both these subspecies are listed nationally as vulnerable. It is the latter subspecies that has been used to establish a population in feral-free enclosures at the Australian Wildlife Conservancy run Scotia Sanctuary in south western New South Wales. The Boodie once lived in a range of dry subtropical and tropical habitats, from open Eucalyptus and Acacia woodlands to arid spinifex grasslands. In its current range on the islands, it seems to prefer open Triodia (spinifex) and dune habitats but will burrow anywhere except places with rocky substrate. **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km.**	**No**
Cercartetus nanus	Eastern Pygmy-possum	V,P		0	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. **Moderate – Search area is within the species known distribution and associated vegetation communities (PCTs 70, 74, 78, 248, and 469) are present. However, no records are within 10 km.**	**Yes**
Chalinolobus dwyeri	Large-eared Pied Bat	E1,P	E	0	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	**Yes**

					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 sandstone caves and overhangs. They remain loyal to the same cave over many years. Found in well-timbered areas containing gullies. **Moderate – Search area is within the species known distribution and associated vegetation communities (PCTs 70, 78, and 267) are present. However, no records are within 10 km.**	
Chalinolobus picatus	Little Pied Bat	V,P		6	The Little-Pied Bat is found in inland Queensland and NSW (including Western Plains and slopes) extending slightly into South Australia and Victoria. Occurs in dry open forest, open woodland, mulga woodlands, chenopod shrublands, cypress pine forest and mallee and Bimbil box woodlands. Roosts in caves, rock outcrops, mine shafts, tunnels, tree hollows and buildings. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 70, 74, 78, 81, 248, 267 and 469) are present. Also, records are within 10 km.**	**Yes**
Dasyurus maculatus	Spotted-tailed Quoll	V,P	E	1	The range of the Spotted-tailed Quoll has contracted considerably since European settlement. It is now found in eastern NSW, eastern Victoria, south-east and north-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. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 78, 81, 267 and 469) are present. Also, one records are within 10 km.**	**Yes**
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V,P		0	The Eastern False Pipistrelle is found on the south-east coast and ranges of Australia, from southern Queensland to Victoria and Tasmania. Prefers moist habitats, with trees taller than 20 m. Generally, roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km.**	**No**
Isoodon auratus auratus	Golden Bandicoot (mainland)	E4,P	V	0	It is now extinct on the mainland except in a few locations in the north-west Kimberley between Mitchell Plateau in the north. **Absent – Search area is outside of the species distribution, there are no associated vegetation communities present nor are there records from within 10 km.**	**No**

Leporillus apicalis	Lesser Stick-nest Rat	E4,P	X	0	Formerly widespread in Australia; the last specimen of the Lesser Stick-nest Rat was captured near Mt Crombie, South Australia in 1933. In the nineteenth century it occupied a broad area stretching from the Riverina in New South Wales, through most of inland South Australia and into the Gibson Desert, reaching the Western Australian coast in the Gascoyne region. The Lesser Stick-nest Rat is presumed to have become extinct in the Northern Territory by the 1940s, following a broad-scale decline extending over at least the previous 30 years. A potential record of the species from 1970, together with continued occasional reports of fresh vegetation being added to old stick-nests provides speculations that the Lesser Stick-nest Rat may still be extant. Much of the species' range was in remote portions of central Australia, which have not been fully surveyed. If the species is found to persist, numbers are likely to be very small and conservation action will be extremely urgent. The Lesser Stick-nest Rat was found in arid and semi-arid areas of central Australia. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km.**	**No**
Leporillus conditor	Greater Stick-nest Rat	E4,P	V	0	The Greater Stick-nest Rat were once found through much of arid and semi-arid Australia, from Shark Bay to western New South Wales and north-western Victoria. By the 1930s Greater Stick-nest Rats were extinct on the mainland. A small population survived only on East and West Franklin Islands, off the far west coast of South Australia. In an effort to save the species, captive-bred animals from these islands have been released in other South Australian sites as well as on Salutation Island, in Henri Freycinet Harbour, and on Heirisson Prong, both in the Shark Bay World Heritage Area. They are found nowhere else in the world. The Greater Stick-nest Rats inhabit semi-arid to arid perennial shrublands where there is little or no fresh water, particularly with succulent and semi-succulent plant species. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km.**	**No**
Macropus dorsalis	Black-striped Wallaby	E1,P		0	From the Townsville area in Queensland to northern NSW where it occurs on both sides of the Great Divide. On the north west slopes of NSW it occurs in Brigalow remnants to south of Narrabri. On the north coast it is confined to the upper catchments of the Clarence and Richmond Rivers. Preferred habitat is characterised by dense woody or shrubby vegetation within three metres of the ground. This dense vegetation must occur near a more open, grassy area to provide suitable feeding habitat. On the north west slopes, associated with dense vegetation, including brigalow, ooline and semi-evergreen vine thicket. On the north coast, closely associated with dry rainforest but also occur in moist eucalypt forest with a rainforest understorey or a dense shrub layer.	**No**

					Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km.	
Macrotis lagotis	Bilby	E4,P	V	0	Bilbies were common in many habitats throughout Australia, from the dry interior to temperate coastal regions. Changes to the Bilby's habitat have seen their numbers greatly reduced and today the species is nationally listed as vulnerable and is presumed extinct in NSW. They now occur in fragmented populations in mulga shrublands and spinifex grasslands in the Tanami Desert of the Northern Territory; in the Gibson and Great Sandy Deserts and the Pilbara and Kimberley regions of Western Australia; and the Mitchell Grasslands of southwest Queensland. Once widespread in arid, semi-arid and relatively fertile areas, the Bilby is now restricted to arid regions and remains a threatened species. The Bilby prefers arid habitats because of the spinifex grass and acacia shrub. **Absent – Although the search area occurs outside of the species natural distribution, the subject site does cross through a section of the TWPZ which contains a population of this species. A member of TWPZ should be present to supervise works around the Bilby burrows if animals are within the area at the time of construction.**	**No**
Miniopterus orianae oceanensis	Large Bent-winged Bat	V,P		7	Eastern Bentwing-bats occur along the east and north-west coasts of Australia. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. **Moderate – Search area is within the species known distribution, but no associated vegetation communities are present. However, records are within 10 km.**	**Yes**
Myotis macropus	Southern Myotis	V,P		0	The Southern Myotis is found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. It is rarely found more than 100 km inland, except along major rivers. Generally, roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface. **Moderate – Search area is within the species known distribution and associated vegetation communities (PCTs 74, 78, 81, 248 267 and 469) are present. However, no records occur within 10 km.**	**Yes**
Nyctophilus corbeni	Corben's Long-eared Bat	V,P	V	1	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	**Yes**

					the western slopes and plains of NSW and southern Queensland. Roosts in tree hollows, crevices, and under loose bark. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 26 70, 78, 81, 248, 267 and 469) are present. Also, a record is within 10 km.**	
Petauroides volans	Southern Greater Glider	E1,P	E	0	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. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km.**	**No**
Petaurus australis	Yellow-bellied Glider	V,P	V	0	The Yellow-bellied Glider is found along the eastern coast to the western slopes of the Great Dividing Range, from southern Queensland to Victoria. Occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. **Moderate – Search area is within the species known distribution and associated vegetation communities (PCTs 70,74, 81, 248 and 267) are present. However, no records occur within 10 km.**	**Yes**
Petaurus norfolcensis	Squirrel Glider	V,P		1	Inhabits woodlands and dry sclerophyll forests, usually in diverse stands of shrubs and trees. Shelters and breeds in tree hollows, and is primarily an insectivorous animal but, has also been known to ingest plant exudates. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 74, and 267) are present. Also, a record is within 10 km.**	**Yes**
Petrogale penicillata	Brush-tailed Rock-wallaby	E1,P	V	0	The range of the Brush-tailed Rock-wallaby extends from south-east Queensland to the Grampians in western Victoria, roughly following the line of the Great Dividing Range. However, the distribution of the species across its original range has declined significantly in the west and south and has become more fragmented. In NSW they occur from the Queensland border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. Occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. Shelter or bask during the day in rock crevices, caves and overhangs and are most active at night when foraging. Browse on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees. Highly territorial and have strong site fidelity with an average home range size of about 15 ha. Males tend to have larger home ranges than females. The home range consists of a refuge area and a foraging range linked by habitually used commuting routes. Females settle	**Yes**

					in or near their mother's range, while males mainly disperse between female groups within colonies, and less commonly between colonies. **Moderate – Search area is within the species known distribution and associated vegetation communities (PCTs 70,78, 81 and 267) are present. However, no records occur within 10 km.**	
Phascogale tapoatafa	Brush-tailed Phascogale	V,P		0	The Brush-tailed Phascogale has a patchy distribution around the coast of Australia. In NSW it is mainly found east of the Great Dividing Range although there are occasional records west of the divide. Prefer dry sclerophyll open forest with sparse groundcover of herbs, grasses, shrubs or leaf litter. Also inhabit heath, swamps, rainforest and wet sclerophyll forest. **Moderate – Search area is within the species known distribution and associated vegetation communities (PCTs 74, and 267) are present. However, no records occur within 10 km.**	**Yes**
Phascolarctos cinereus	Koala	E1,P	E	7	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 northern tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the plains west of the Great Dividing Range. Inhabit eucalypt woodlands and forests. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 26, 70, 74, 78, 81, 248, 267 and 469) are present. Also, records are within 10 km.**	**Yes**
Pseudomys novaehollandiae	New Holland Mouse	P	V	0	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. **Moderate – Search area is within the species known distribution and associated vegetation community (PCT 469) is present. However, no records occur within 10 km.**	**Yes**
Pseudomys oralis	Hastings River Mouse	E1,P	E	0	A patchy distribution spanning the Great Dividing Range from the Hunter Valley, south of Mt Royal, north to the Bunya Mountains near Kingaroy in south-east Queensland, at elevations between 300 m and 1100 m. A variety of dry open forest types with dense, low ground cover and a diverse mixture of ferns, grass, sedges and herbs.	**No**

					Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km.	
Pseudomys pilligaensis	Pilliga Mouse	V,P	V	0	Distribution restricted to the Pilliga region of New South Wales. However, a Pilliga Mouse was reportedly trapped in the Warrumbungles after a major wildfire in January 2013, suggesting a sparse local population may have previously existed that could now respond to early stages of the post-fire succession. The Pilliga Mouse typically occurs at low densities and appears to prefer areas with sparse ground cover. Evidence exists of marked population fluctuations. **Low – Search area is within the species known distribution. However, no associated vegetation communities are present and no records within 10 km.**	**No**
Pteropus poliocephalus	Grey-headed Flying-fox	V,P	V	32	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; 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. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 70, 78, 81, 267 and 469) are present. Also, records are within 10 km.**	**Yes**
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V,P		9	The Yellow-bellied Sheathtail-bat is a wide-ranging species found across northern and eastern Australia. In the most southerly part of its range - most of Victoria, south-western NSW and adjacent South Australia - it is a rare visitor in late summer and autumn. There are scattered records of this species across the New England Tablelands and North West Slopes. Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory. Breeding has been recorded from December to mid-March, when a single young is born.	**Yes**

					Seasonal movements are unknown; there is speculation about a migration to southern Australia in late summer and autumn. **High – Search area is within the species known distribution and associated vegetation communities (PCTs 26, 70, 74, 78, 81, 248, 267 and 469) are present. Also, records are within 10 km.**	
Scoteanax rueppellii	Greater Broad-nosed Bat	V,P		0	The Greater Broad-nosed Bat is found mainly in the gullies and river systems that drain the Great Dividing Range, from north-eastern Victoria to the Atherton Tableland. It extends to the coast over much of its range. In NSW it is widespread on the New England Tablelands, however, does not occur at altitudes above 500 m. Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings. Forages after sunset, flying slowly and directly along creek and river corridors at an altitude of 3 - 6 m. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects; this species has been known to eat other bat species. **Low – Search area is within the species predicted distribution however, no associated vegetation communities are present and no records within 10 km.**	**No**
Sminthopsis macroura	Stripe-faced Dunnart	V,P		0	Throughout much of inland central and northern Australia, extending into central and northern NSW, western Queensland, Northern Territory, South Australia and Western Australia. They are rare on the NSW Central West Slopes and North West Slopes with the most easterly records of recent times located around Dubbo, Coonabarabran, Warialda and Ashford. Native dry grasslands and low dry shrublands, often along drainage lines where food and shelter resources tend to be better. **Moderate – Search area is within the species known distribution and associated vegetation community (PCT 26) is present. However, no records occur within 10 km.**	**Yes**
Vespadelus troughtoni	Eastern Cave Bat	V,P		0	The Eastern Cave Bat is found in a broad band on both sides of the Great Dividing Range from Cape York to Kempsey, with records from the New England Tablelands and the upper north coast of NSW. The western limit appears to be the Warrumbungle Range, and there is a single record from southern NSW, east of the ACT. Very little is known about the biology of this uncommon species. A cave-roosting species that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded roosting in disused mine workings, occasionally in colonies of up to 500 individuals. Occasionally found along cliff-lines in wet eucalypt forest and rainforest. Little is understood of its feeding or breeding requirements or behaviour. BioNet Atlas states that the species occurs within two kilometres of rocky areas containing caves, overhangs, escarpments,	**Yes**

					outcrops, crevices or boulder piles, or within two kilometres of old mines, tunnels, old buildings or sheds. **Moderate – Search area is within the species known distribution and associated vegetation communities (PCTs 70, 78, 81, 267 and 469) are present. However, no records occur within 10 km.**	
Aprasia parapulchella	Pink-tailed Legless Lizard	V,P	V	0	The Pink-tailed Legless Lizard is only known from the Central and Southern Tablelands, and the South Western Slopes. 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*). **Moderate – Search area is within the species known distribution and associated vegetation communities (PCTs 267 and 469) are present. However, no records occur within 10 km.**	**Yes**
Delma impar	Striped Legless Lizard	V,P	V	0	The Striped Legless Lizard occurs in the Southern Tablelands, the South West Slopes, the Upper Hunter and possibly on the Riverina. Populations are known in the Goulburn, Yass, Queanbeyan, Cooma, Muswellbrook and Tumut areas. Also occurs in the ACT, Victoria and south-eastern South Australia. Found mainly in Natural Temperate Grassland but has also been captured in grasslands that have a high exotic component. Also found in secondary grassland near Natural Temperate Grassland and occasionally in open Box-Gum Woodland. **Low – Search area is within the species predicted distribution. However, no associated vegetation communities are present and no records within 10 km.**	**No**
Hoplocephalus bitorquatus	Pale-headed Snake	V,P		0	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 and Tenterfield; however, most records appear to be from sites of relatively lower elevation. Although the Pale-headed snake distribution is very cryptic, it now appears to have contracted to a patchy and fragmented distribution. 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. **Moderate – Search area is within the species known distribution and associated vegetation communities (PCTs 26, 78 and 469) are present. However, no records occur within 10 km**	**Yes**

Varanus rosenbergi	Rosenberg's Goanna	V,P			Rosenberg's Goanna occurs on the Sydney Sandstone in Wollemi National Park to the north-west of Sydney, in the Goulburn and ACT regions and near Cooma in the south. There are records from the South West Slopes near Khancoban and Tooma River. Also occurs in South Australia and Western Australia. Found in heath, open forest and woodland. **Low – Search area is within the species predicted distribution. However, no associated vegetation communities are present and no records within 10 km.**	**No**

*NSW Status: P=Protected, P13=Protected native plant, V=Vulnerable, E1=Endangered, E2=Endangered population, E4=Extinct, E4A=Critically endangered, 2=Category 2 sensitive species, 3=Category 3 sensitive species.

+Commonwealth Status: C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable, Bonn=Bonn Convention.

Likelihood of occurrence table for BC Act-listed Threatened Ecological Communities.

Community Name	*NSW status	Likelihood of Occurrence	5-part test required (Yes/No)
Brigalow within the Brigalow Belt South, Nandewar and Darling Riverine Plains Bioregions	E3	This community occurs north of Bourke between the Culgoa and Warrego Rivers on soft red earths and heavy grey clays on level to slightly undulating plains. The structure of Brigalow-Gidgee ranges from woodland to shrubland and scrub depending on local conditions. The canopy is dominated by either Brigalow *Acacia harpophylla* or Gidgee *Acacia cambagei* with the other species being co-dominant or part of the shrub layer, depending on site disturbance. **Absent – Community does not occur within the subject site.**	No
Carex Sedgeland of the New England Tableland, Nandewar, Brigalow Belt South and NSW North Coast Bioregions	E3	Carex Sedgelands are mostly found at higher altitude on tablelands but extend onto the slopes. The community has been recorded from the local government areas of Armidale Dumaresq, Warrumbungle, Glen Innes Severn, Guyra, Gwydir, Inverell, Liverpool Plains, Tamworth Regional, Uralla and Walcha. The community occupies an estimated extent of 5000 hectares, which is estimated to be a 50% decline in extent since European settlement. Less than 100 hectares is currently represented in conservation reserves in NSW. **Absent – Community does not occur within the subject site.**	No
Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions	E3	This ecological community occurs on brown loam or clay, alluvial or colluvial soils on prior streams and abandoned channels or slight depressions on undulating plains or flats of the South West Slopes, Brigalow Belt South and Darling Riverine Plains Bioregions. Mainly in the Dubbo-Narromine-Parkes-Forbes area. The community often occurs upslope from River Red Gum communities above frequently inundated areas of the floodplain. It also occurs on colluvium soils on lower slopes and valley flats. **Absent – Community does not occur within the subject site.**	No
Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	E3	Inland Grey Box Woodland occurs predominately within the Riverina and South West Slopes regions of NSW down to the Victorian border. It includes Albury to the east and may extend out west towards Hay. This community also extends across the slopes and plains in Central and Northern NSW up to the Queensland Border. This includes Yetman and Inverell in the North, Molong to the east of the Central Slopes and plains and out towards Nymagee to the west. **Present – This community was recorded within the subject site.**	Yes
Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions	E3	This ecological community is scattered across the eastern parts of the alluvial plains of the Murray-Darling river system. The community is also known as Boree particularly in the southern part of its distribution. Typically, it occurs on red-brown earths and heavy textured grey and brown alluvial soils within a climatic belt receiving between 375 and 500 mm mean annual rainfall. This EEC is known from parts of the Local Government Areas of Berrigan, Bland, Bogan, Carrathool, Conargo, Coolamon, Coonamble, Corowa, Forbes, Gilgandra, Griffith, Gwydir, Inverell, Jerilderee, Lachlan, Leeton, Lockhart, Moree Plains, Murray, Murrumbidgee, Narrabri, Narranderra, Narromine, Parkes, Urana, Wagga Wagga and Warren, and but may occur elsewhere in these bioregions.	Yes

		Present – This community was recorded within the subject site.	
Pilliga Outwash Ephemeral Wetlands in the Brigalow Belt South Bioregion	E3	Species-rich herb field of shallow basin wetlands, along with the structurally distinct but the less common sedge land/herb field of the deeper 'tank' wetlands and a single wetland with a floristically depauperate *'Diplachne fusca*' wet grassland. **Absent – Community does not occur within the subject site.**	No
Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions	E3	This community is dominated by *Callitris glaucophylla*, typically occupying red-brown loamy sands with alkaline sub-soils on the alluvial plain of the Murray River and its tributaries, and on parts of the sandplain in south-western NSW. In the Riverina bioregion and the far south-western portion of the NSW South Western Slopes bioregion, the community is typically associated with prior streams and aeolian source-bordering dunes, which are scattered within an extensive alluvial clay plain dominated by chenopod shrublands. In the Murray-Darling Depression bioregion, the community occurs as scattered patches on sandhills and lunettes within an extensive aeolian sandplain dominated by woodlands of mallee eucalypts or belah. **Absent – Community does not occur within the subject site.**	No
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	E4B	Box-Gum Woodland is found from the Queensland border in the north, to the Victorian border in the south. It occurs in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions. **Present – This community was recorded within the subject site.**	Yes

APPENDIX D – BC ACT TESTS OF SIGNIFICANCE

Biodiversity Conservation Act 2016 Test of significance

The threatened species 'test of significance' (or '5-part test') is used to determine if a development or activity is likely to significantly affect threatened species or ecological communities, or their habitats. The test of significance is set out in s.7.3 of the *Biodiversity Conservation Act 2016*, and is completed in accordance with the questions set out below:

The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

   i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

   ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

c) in relation to the habitat of a threatened species or ecological community:

   i. the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

   ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

   iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,

d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

BC Act Tests of Significance for Threatened Species and/or Populations.

Species Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
Crinia sloanei	Sloane's Froglet	This species is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats. This species was not detected during the field survey and no records occur within the 10 km search area. As such, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **74** and **81** within the subject site, hence **1.67 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the lack of records within the search area it is unlikely the habitat being removed would be important for the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Anseranas semipalmata	Magpie Goose	Mainly found in shallow wetlands (less than 1 m deep) with a dense growth of rushes or sedges. Their activities are centred on wetlands, mainly those on floodplains of rivers and large shallow wetlands formed by run-off. This species was not detected during the field survey, however, six records occur within the 10 km search area. Considering the absence of wetland habitat, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCT **78** within the subject site, hence **0.27 ha** of this PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Records exist within the search area; however, no records are located within the subject site. The most suitable habitat for the species would be the Macquarie River which crosses the alignment corridor between pole 23 and 24. However, vegetation clearing is unlikely at this section of the proposal; therefore, the proposal would be unlikely to impact suitable habitat for this species.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Anthochaera phrygia	Regent Honeyeater	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 high abundance and species richness of bird species. Breeding varies between regions and corresponds with flowering of key eucalypt and mistletoe species. Although 21 records occur within the 10 km search area, this species was not detected during the field survey. Given the narrow extent of vegetation clearing, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **78, 81, 267**, and **469** within the subject site, hence **13.68 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Records exist within the search area; however, no records are located within the subject site. Given the narrow extent of vegetation clearing, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Aphelocephala leucopsis	Southern Whiteface	This species prefers the drier habitats of southern Australia. Commonly found in dry open forests and woodland, mallee, mulga and saltbush. Prefers sites with fallen timber or dead trees and stumps. Although two records occur within the 10 km search area, this species was not detected during the field survey. Considering the limited suitability of the site (with little fallen timber, dead trees and stumps), the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **70, 78, 81, 248**, and **267** within the subject site, hence about **15.93 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation due to the clearing of overstory vegetation under the hanging lines, especially between pole 28 to 44. iii. Records exist within the search area; however, no records are located within the subject site. Given the narrow clearance required within the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Ardeotis australis	Australian Bustard	This species mainly inhabits tussock and hummock grasslands, though prefers tussock grasses to	N/A	i. This species is associated with the PCTs **26**, and **248** within the subject site, hence about	No AOBV present within or	Yes. See **Appendix G**	No significant impact will arise to the

		hummock grasses. It breeds on bare ground on low sandy ridges or stony rises in ecotones between grassland and protective shrubland cover; roosts on ground among shrubs and long grasses or under trees. Preferred habitat for this species does not occur within the subject site. Furthermore, the species was not detected during the field survey and no records occur within the 10 km search area. As such, the proposal is unlikely to place a local population at risk of extinction.		**1.94 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the lack of records within the search area and the narrow clearance required within the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	close to the subject site.		local viability of this species or its habitat due to the undertaking of the proposal
Artamus cyanopterus cyanopterus	Dusky Woodswallow	This species breeds in open twig nests in shrubs or on low trees in dry open eucalypt and mallee forests and woodlands generally with an open or sparse understorey. It mainly eats insects but occasionally takes nectar and fruit. This species was not detected on site however, five records occur within 10 km. Considering the few records within the 10 km, and the narrow extent of the impact footprint, it is unlikely the proposal will have an adverse effect on the life cycle of the species.	N/A	i. This species is associated with PCTs **70, 78, 81, 248, 267** and **469** within the subject site. Consequently, up to **16.53 ha** of associated PCTs for this species will be removed or modified because of this proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the minimal records within the search area and the narrow clearance required within the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Burhinus grallarius	Bush Stone-curlew	Nests on the ground in a scrape or small bare patch. Inhabits open forests and woodlands with a sparse grassy groundlayer and fallen timber. The species was not detected during the field survey. Furthermore, only one record	N/A	i. This species is associated with the PCTs **26, 70, 74, 78, 81, 248, 267**, and **469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the

		occurs within the 10 km search area. As such, the proposal is unlikely to place a local population at risk of extinction.		associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that only one record occurs within the search area and given the narrow clearance required within the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.			undertaking of the proposal
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	Dependent on large hollow-bearing eucalyptus trees (absent within impact area) and feeding exclusively on several species of she-oak. A small number of she-oak (*Casuarina* species) plants were seen within the site. Furthermore, twenty-three South-eastern Glossy Black-Cockatoo records occur within the 10 km search area. However, the species was not detected during the field survey. Considering the scarcity of suitable hollow-bearing trees, and the relatively narrow impact footprint, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **26, 70, 74, 78, 81, 267**, and **469** within the subject site, hence about **16.03 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the inability to detect the species during the field survey, the scarcity of suitable breeding trees, and the narrow clearance required within the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Chthonicola sagittata	Speckled Warbler	The Speckled Warbler is dependent on large, relatively undisturbed areas of Eucalypt dominated communities, with a thick grassy understory for breeding. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth, and an open canopy. The subject site has been previously disturbed and	N/A	i. This species is associated with the PCTs, **70, 74, 78, 81, 248, 267,** and **469** within the subject site, consequently about **16.03 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		does not contain optimal habitat for this species. Although 26 records occur within the 10 km search area, the species was not detected during the field survey. Considering the above, and the relatively narrow impact footprint, the proposal is unlikely to place a local population at risk of extinction.		iii. The alignment corridor was not typically characterised by a relatively undisturbed area of Eucalypt dominated communities. Furthermore, the species was not detected during the field survey. Considering the above, and the narrow clearance required within the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.			
Circus assimilis	Spotted Harrier	This species occurs in grassy open woodland including *Acacia* and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands. Twenty-three records occur within 10 km. However, neither the species nor suitable nests were detected during the field survey. Considering the above, and the relatively narrow impact footprint, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs, **70, 74, 78, 248,** and **469** within the subject site, consequently about **4.96 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the inability to detect the species during the field survey, the absence of suitable nests, and the narrow clearance required within the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	This species requires tree hollows for nesting. It forages in woodland dominated by stringybarks, and other rough bark eucalyptus trees, usually with an open grassy understory. Although 16 records occur within the 10 km search area, the species was not detected during the field survey. Furthermore, only three habitat	N/A	i. This species is associated with the PCTs, **70, 74, 78, 81, 248, 267** and **469** within the subject site, consequently about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		trees with hollows suitably small for this species are located within the subject site. Considering the above, and the relatively narrow impact footprint, the proposal is unlikely to place a local population at risk of extinction.		will increase fragmentation in areas where a new alignment is proposed. iii. Given the inability to detect the species during the field survey, the scarcity of hollow-bearing trees, and the narrow clearance required for the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.			
Daphoenositta chrysoptera	Varied Sittella	The Varied Sittella inhabits eucalypt forests and woodlands and constructs a cup-shaped nest in an upright tree fork high in the living canopy, often reusing the same nest over successive years. Four records of the species occur within 10 km. However, the species was not detected on site. Considering the above, and the relatively narrow impact footprint, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **26**, **70, 74, 78, 81, 248, 267**, and **469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that few records occur within the search area and considering the narrow clearance of the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Ephippiorhynchus asiaticus	Black-necked Stork	The species prefers floodplain wetlands (swamps, billabongs, watercourses and dams) of the major coastal rivers. Secondary habitat includes minor floodplains, coastal sandplain wetlands and estuaries. No records of the species occur within 10 km. Considering this, and the marginal suitability of the habitat, it is unlikely that the proposal will have an adverse effect on the lifecycle of the species.	N/A	i. This species is associated with the PCT **78** within the subject site, hence about **0.27 ha** of this PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the limited suitability of the subject site and, the lack of records within the 10 km search area, and the narrow clearance required for the alignment corridor, it is unlikely the proposal	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

				would jeopardise the long-term survival of the species in the locality.			
Epthianura albifrons	White-fronted Chat	The White-fronted Chat constructs cup-shaped nests in dense, low vegetation. This species was not detected during the field survey and only one record (from 1989) occurs within the 10 km search area. As such, the subject site is not likely to be critical to the lifecycle of the species.	N/A	i. This species is not associated with any PCTs within the subject site. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the inability to detect the species during the field survey, the lack of records (since 2989) within the 10 km search area, and the narrow clearance required for the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Falco subniger	Black Falcon	The Black Falcon is widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. Nine records occur within 10 km of the subject site. However, considering the inability to detect the species during the field survey, the scarcity of suitable breeding nests within the subject site, and the relatively narrow impact footprint, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs, **70, 74, 248,** and **267** within the subject site, consequently about **16.47 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the inability to detect the species during the field survey, the scarcity of nests, and the narrow clearance required for the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Gallinago hardwickii	Latham's Snipe	Latham's Snipe is a non-breeding visitor to south-eastern Australia. The species was not detected on site and only three records occur	N/A	i. This species is not associated with of the PCTs encountered within the subject site. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation	No AOBV present within or close to the	Yes. See **Appendix G**	No significant impact will arise to the local viability of

		within 10 km. All three records are associated with sewage ponds > 7 km north of the subject site. Considering this, and the marginal suitability of the habitat within the subject site, it is unlikely that the proposal would have an adverse effect on the lifecycle of the species.		associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the limited suitability of habitat within the subject site, the minimal records within the search area, and the narrow clearance required for the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	subject site.		this species or its habitat due to the undertaking of the proposal
Glossopsitta porphyrocephala	Purple-crowned Lorikeet	This species is found in open forests and woodlands, particularly where there are large flowering eucalypts. It is also recorded from mallee habitats. The species breeds away from feeding areas, utilising hollow branches or holes in trees. This species was not detected during the field survey and no records occur within the 10 km search area. As such, it is unlikely that the proposal would have an adverse effect on the lifecycle of the species.	N/A	i. This species is associated with the PCT **74** within the subject site, hence about **1.24 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the inability to detect the species during the field survey, the lack of records within the 10 km search area, and the scarcity of hollow-bearing trees, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Glossopsitta pusilla	Little Lorikeet	This species forages primarily in the canopy of open *Eucalyptus* forest and woodland, yet also finds food in *Angophora, Melaleuca* and other tree species. Nests in proximity to feeding areas, if possible, most typically selecting hollows in the limb or trunk of smooth-barked *Eucalypts*. Eight records of the species occur within 10 km. However, the species was not detected during the field	N/A	i. This species is associated with the PCTs **74, 78, 81, 267** and **469** within the subject site, hence about **14.92 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the inability to detect the species during the field survey, the scarcity of hollow-bearing trees, and the narrow clearance	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		survey. Furthermore, there are only three habitat trees with hollows suitably small for this species within the subject site. Considering the above, and the relatively narrow impact footprint, the proposal is unlikely to place a local population at risk of extinction.		required for the alignment corridor, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.			
Grantiella picta	Painted Honeyeater	Breeds in nests within Boree/ Weeping Myall (*Acacia pendula*), Brigalow (*A. harpophylla*) and Box-Gum Woodlands and Box-Ironbark Forests. Specialist feeder on the fruits of mistletoes. One record of this species occurs within the 10 km search area. However, neither the species nor trees with mistletoe were detected during the field survey. As such, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is not associated with any PCTs encountered within the subject site. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the inability to detect the species or associated mistletoe plants, and the low number of records within the search area, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Grus rubicunda	Brolga	This species often feed in dry grassland or ploughed paddocks or even desert claypans, they are dependent on wetlands too, especially shallow swamps, where they will forage with their head entirely submerged. No records of the species occur within 10 km. Considering this, and the marginal suitability of the habitat, it is unlikely that the proposal would have an adverse effect on the lifecycle of the species.	N/A	i. This species is associated with the PCT **26** and **78** within the subject site, hence about **0.37 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the lack of records within the 10 km search area, the limited suitability of the subject site, and the narrow clearance required for the alignment corrido, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Haliaeetus leucogaster	White-bellied Sea-Eagle	This seabird is found along major waterways and favours habitats with large open water such as lakes and the sea. A single record occurs within 10 km. However, neither the species nor any suitably large nests were detected during the field survey. Considering the above, and the relatively narrow impact footprint, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is not associated with any PCTs encountered within the subject site. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the inability to detect the species or its nests during the field survey, and the low number of records within the 10 km search area, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Hamirostra melanosternon	Black-breasted Buzzard	This species is adapted to living in a range of inland habitats, especially along timbered watercourses which is the preferred breeding habitat. It also hunts over grasslands and sparsely timbered woodlands. The species was not detected during the field survey and no records of the species occur within 10 km. As such, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCT **78** within the subject site, hence about **0.27 ha** of this PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the inability to detect the species during the field survey and the lack of records within the 10 km search area, it is unlikely the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Hieraaetus morphnoides	Little Eagle	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. Nineteen records of the species occur within 10 km.	N/A	i. This species is not associated with any PCTs encountered within the subject site. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Although 19 records of this species have been documented within the search area,	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		However, neither the species nor its nests were detected on site. Although suitable habitat for this species is present, considering the narrow extent of the subject site, the absence of suitable nests, and the high mobility of this species, it is unlikely that the proposal would have an adverse effect on the lifecycle of the species.		considering the narrow extent of the subject site, the absence of suitable nests, and the high mobility of this species, it is unlikely that the proposal would jeopardise the long-term survival of the species in the locality.			
Hirundapus caudacutus	White-throated Needletail	This is a migratory species which is usually seen in eastern Australia from October to April. It breeds in forests in south-eastern Siberia, Mongolia, the Korean Peninsula and northern Japan June-August. The species is more common in coastal areas, less so inland. As this species breeds exclusively outside of Australia, and they prefer coastal ecosystems, the subject site is unlikely to be critical to the lifecycle of the species. As such, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is not associated with any PCTs encountered within the subject site. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the few records within the search area and the narrow clearance within the subject site, it is unlikely that the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Lathamus discolor	Swift Parrot	This species breeds in Tasmania, before migrating to Mainland Australia for winter. This species forages arboreally, favouring 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*). It occupies a variety of habitats including forest,	N/A	i. This species is not associated with any PCTs encountered within the subject site. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Due to the limited records within the search area and the narrow clearance within the subject site, it is unlikely that the proposal would	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		woodland, suburban parks, and gardens. Of the above species, two preferred forage species were identified in the subject site and two Swift Parrot records occur within 10 km. As this species breeds in Tasmania, the subject site would represent foraging habitat only. Given the narrow extent of the footprint, the proposal is unlikely to have an adverse effect on the life cycle of the species.		jeopardise the long-term survival of the species in the locality.			
Lophochroa leadbeateri	Pink Cockatoo	The species inhabits a wide range of trees and treeless inland habitats, always within easy reach of water. It feeds mostly on the ground, especially on the seeds of native and exotic melons and on the seeds of species of saltbush, wattles and cypress pines. Although four records occur within the 10 km search area, the species was not detected during the field survey. Considering the scarcity of suitable hollow-bearing trees, and the relatively narrow impact footprint, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **26, 70, 74, 78, 81, 248** and **469** within the subject site, consequently about **5.49 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Considering the scarcity of suitable hollow-bearing trees, and the relatively narrow impact footprint, it is unlikely that the proposal would jeopardise the long-term survival of the species in the locality.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Lophoictinia isura	Square-tailed Kite	Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses. The species was not detected on site. However, six records occur within 10 km. Considering the narrow extent of	N/A	i. This species is associated with the PCTs **26, 70, 74, 78, 81, 248, 267**, and **469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the

		the subject site, the absence of suitable nests, and the high mobility of this species, the proposal is unlikely to place a local population at risk of extinction.		associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the limited suitability of the subject site, the scarcity of nests, and the narrow clearance required for the alignment corridor, it is unlikely that the proposal would jeopardise the long-term survival of the species in the locality.			undertaking of the proposal
Melanodryas cucullata cucullata	South-eastern Hooded Robin	This species prefers a lightly wooded country with open eucalypt woodland or acacia scrub, often in or near open areas. They require structurally diverse habitats featuring mature eucalypts, saplings, small shrubs, and tall native grasses. Although two records occur within the 10 km search area, the most recent of these records is from 2010. Furthermore, the species was not detected during the field survey. Considering the narrow extent of the subject site, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **26, 70, 74, 78, 81, 248, 267,** and **469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the minimal records within the search area and the narrow clearance of the alignment corridor, the vegetation clearing is unlikely to impact the habitat of this species should the proposal progress.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	This species occupies open forests and woodlands dominated by box and ironbark eucalypts. Although three records occur within the 10 km search area, the species was not detected during the field survey. Considering the narrow extent of the subject site, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs, **70, 74, 78, 81, 248, 267,** and **469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the few records within the search area and the narrow clearance of the alignment	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

				corridor, the vegetation clearing is unlikely to impact the habitat of this species should the proposal progress.			
Neophema chrysostoma	Blue-winged Parrot	Blue-winged Parrots occur in range of habitats from coastal to semi-arid and favour grasslands and grassy woodlands. Mainly found in Tasmania and Victoria but some populations can be found in Western NSW and Eastern SA. Although two records occur within the 10 km search area, the species was not detected during the field survey. Considering the narrow extent of the subject site, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is not associated with any PCTs encountered within the subject site. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the minimal records within the search area and the narrow clearance of the alignment corridor, the vegetation clearing is unlikely to impact the habitat of this species should the proposal progress.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Neophema pulchella	Turquoise Parrot	The Turquoise Parrot's range extends from southern Queensland through to northern Victoria, from the coastal plains to the western slopes of the Great Dividing Range. Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. Although 10 records occur within the 10 km search area, the species was not detected during the field survey. Considering the narrow extent of the subject site, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs, **70, 74, 78, 81, 248, 267, and 469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Considering the narrow extent of the subject site, and the scarcity of hollows for breeding, it is unlikely that the proposal would affect the species' long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Ninox connivens	Barking Owl	This species utilises woodland and open forest, preferring riparian habitats for breeding, using the large hollows of old trees. Requires	N/A	i. This species is associated with the PCTs **26, 70, 74, 78, 81, 248, 267** and **469** within the subject site, hence about **17.87 ha** of these	No AOBV present within or close to the	Yes. See **Appendix G**	No significant impact will arise to the local viability of

		very large permanent territories in most habitats due to sparse prey densities, with individuals hunting over 2000 hectares. In total, 11 records occur within 10 km. However, considering the scarcity of hollow-bearing trees, and the narrow extent of the subject site, relative to the home range of this species, the proposal is unlikely to place a local population at risk of extinction.		PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Considering the narrow extent of the subject site and the scarcity of hollows for breeding, it is unlikely that the proposal would affect the species' long-term survival.	subject site.		this species or its habitat due to the undertaking of the proposal
Ninox strenua	Powerful Owl	This species requires large tree hollows in eucalypts, with pairs mating for life and showing high fidelity to a large territory. With no trees within the subject site meeting this need it would be utilised only for hunting. A single record occurs within 10 km. As this species has home ranges spanning up to 4000 ha and requires large hollow bearing trees, which were scarce, the proposal is unlikely to place a local population at risk of extinction. .	N/A	i. This species is associated with the PCT **78** within the subject site, hence about **0.27 ha** of this PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Considering the narrow extent of the subject site, and the scarcity of hollows for breeding, it is unlikely that the proposal would affect the species' long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Oxyura australis	Blue-billed Duck	The Blue-billed Duck is endemic to south-eastern and south-western Australia. It is widespread in NSW, but most common in the southern Murray-Darling Basin area. Only two records of the species occur within 10 km of the subject site. The species was not detected on site and only occurs in deep water bodies; therefore, the proposal is	N/A	i. This species is not associated with any PCTs encountered within the subject site. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Due to the limited records within the search area and the marginal suitability of habitat, it is unlikely that the proposal would affect the species' long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		unlikely to place a local population at risk of extinction.					
Pachycephala inornata	Gilbert's Whistler	The Gilbert's Whistler occurs in a range of habitats within NSW, though the shared feature appears to be a dense shrub layer. It is widely recorded in mallee shrublands, but also occurs in box-ironbark woodlands, Cypress Pine and Belah woodlands and River Red Gum forests, though at this stage it is only known to use this habitat along the Murray, Edwards and Wakool Rivers. The species was not detected during the field survey and no records occur within 10 km. Therefore, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCT **267** within the subject site, hence about **12.38 ha** of this PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records exist within the search area, it is unlikely the proposal development would significantly affect the long-term survival of the species.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Petroica boodang	Scarlet Robin	The Scarlet Robin is primarily a resident in dry eucalypt forests and woodlands throughout eastern NSW. The species was not detected during the field survey and no records occur within 10 km. Therefore, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs, **70, 74, 78, 81, 248, 267,** and **469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given no records are within the search area, it is unlikely the proposal would significantly affect the long-term survival of the species.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Petroica phoenicea	Flame Robin	The Flame Robin breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Often build nests near the ground in sheltered sites. Although	N/A	i. This species is associated with the PCT **70, 248,** and **267** within the subject site, hence about **15.23 ha** of this PCT would be modified/removed because of the proposal.	No AOBV present within or close to the	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or

		two records occur within the 10 km search area, the species was not detected during the field survey. Considering the narrow extent of the subject site, the proposal is unlikely to place a local population at risk of extinction.		ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the minimal records within the search area it is unlikely the proposal development would significantly affect the long-term survival of the species.	subject site.		its habitat due to the undertaking of the proposal
Polytelis swainsonii	Superb Parrot	The species inhabits Box-Gum, Box-Cypress-pine and Boree woodlands and River Red Gum Forest. 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. Thirty-six records of the species occur within 10 km. However, this species was not observed during the field surveys, only three hollow-bearing trees are present, and the subject site is outside of the key breeding area for this species (roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west). Therefore, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **26, 70, 74, 78, 81, 248, 267** and **469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Considering the narrow extent of the subject site located outside of the key breeding area for this species, and the scarcity of hollows for breeding, it is unlikely that the proposal would affect the species' long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	This species Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Woodlands on fertile soils in	N/A	i. This species is associated with the PCTs **26, 70, 74, 78, 81, 248,** and **267** within the subject site, hence about **17.27 ha** of these PCTs would be modified/removed because of the proposal.	No AOBV present within or close to the	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or

		coastal regions. This species was not observed during the field surveys. However, as 213 records occur within 10 km it should be assumed present. Considering the narrow extent of the subject site, and the absence of breeding or roosting nests for this species, the proposal is unlikely to place a local population at risk of extinction.		ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Considering the narrow extent of the subject site and the absence of breeding or roosting nests for this species, it is unlikely that the proposal would affect the species' long-term survival.	subject site.		its habitat due to the undertaking of the proposal
Rostratula australis	Australian Painted Snipe	This species 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. No nests or individuals of the species were recorded during the field survey. Only four known records occur within 10 km, all of which were recorded in 2009 and are located > 4 km north of the subject site in a swampy area adjacent to Fitzroy Street. Considering the limited records within the search area and the narrow size of the subject site, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCT **70** within the subject site, hence about **1.01 ha** of this PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the minimal records within the search area and the narrow extent of the subject site, it unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Stagonopleura guttata	Diamond Firetail	This species is normally found in grassy *Eucalypt* woodlands, including Box-Gum Woodlands and Snow Gum *Eucalyptus* pauciflora Woodlands. Also, occurs in open forest, mallee,	N/A	i. This species is associated with the PCTs **26, 70, 74, 78, 81, 248, 267** and **469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due

		Natural Temperate Grassland, and in secondary grassland derived from other communities. It breeds in fibrous stick nests. This species was not observed during the field surveys. Of the nine recorded occurrences within 10 km of the site, the most recent dates back to 2012. This suggests that the subject site may not be a preferred habitat for the species, despite the presence of associated vegetation communities. Therefore, the proposal is unlikely to place a local population at risk of extinction.		ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the minimal records within the search area and the narrow extent of the subject site, it is unlikely that the proposal would affect the species long-term survival.			to the undertaking of the proposal
Stictonetta naevosa	Freckled Duck	The Freckled Duck is found primarily in south-eastern and south-western Australia, occurring as a vagrant elsewhere. This species was not observed during the field survey and no records occur within 10 km. Although associated vegetation occurs within the subject site, considering the scarcity of aquatic habitat and absence of records within the search area, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCT **70** within the subject site, consequently about **1.01 ha** of this PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur within the search area and the narrow extent of the subject site, it unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Tyto novaehollandiae	Masked Owl	This species breeds in large hollows in moist eucalypt forested gullies. The subject site did not contain any hollows large enough for this species. They hunt extensively along the edges of forests, including roadsides with a home-range of ~1000 ha. A single record occurs within 10 km.	N/A	i. This species is associated with the PCTs **26, 70, 74, 78, 81, 248, 267** and **469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the

		Furthermore, given the species high mobility, the absence of moist eucalypt forest within the subject site, and the low availability of suitable hollows within the subject site, the proposal is unlikely to place a local population at risk of extinction.		will increase fragmentation in areas where a new alignment is proposed. iii. Considering the narrow extent of the subject site, the single record within the search area, and the absence of moist eucalyptus forest within the subject site, it is unlikely that the proposal would affect the species long-term survival.			undertaking of the proposal
Acacia ausfeldii	Ausfeld's Wattle	For this species, established plants are likely to be killed by fire, as mature and juvenile plants have a single-stemmed growth form. Associated species include *Eucalyptus albens, E. blakelyi* and *Callitris* spp., with an understorey dominated by *Cassinia* spp. and grasses. The species was not detected on site and no records occur within 10 km. Considering the above, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCT **267** within the subject site, hence about **12.38 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur within the search area and the narrow extent of the subject site, it is it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Austrostipa wakoolica	A spear-grass	Grows on floodplains of the Murray River tributaries, in open woodland on grey, silty clay or sandy loam soils; habitats include the edges of a lignum swamp with box and mallee; creek banks in grey, silty clay; mallee and lignum sandy-loam flat; open Cypress Pine Forest on low sandy range; and a low, rocky rise. The species was not detected on site and no records occur within 10 km. Considering the above, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **26, 70, 74** and **248** within the subject site, hence about **4.19 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur within the search area and the narrow extent of the subject site, it is it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Commersonia procumbens		Grows in sandy sites, often along roadsides. Recorded in *Eucalyptus dealbata* and *E. sideroxylon* communities, *Melaleuca uncinata* scrub, under mallee eucalypts with a *Calytrix tetragona* understorey, and in a recently burnt Ironbark and *Callitris* area. Also, in *E. fibrosa* subsp. *nubila*, *E. dealbata*, *E. albens* and *Callitris glaucophylla* woodlands north of Dubbo. The species was not detected on site. Three records of the species occur within a 10 km radius. While associated vegetation communities are present within the subject site, the records within the search area date back to 1993 and 1887. Given this, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the **PCTs 70, 267 and 469** within the subject site, hence about **13.99 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the minimal records within the search area and that the most recent record dates back to 1993, it appears unlikely that a population occurs within the subject site. Consequently, it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Cullen parvum	Small Scurf-pea	In known populations in Victoria and NSW, plants are found in grassland, River Red Gum (*Eucalyptus camaldulensis*) Woodland or Box-Gum Woodland, sometimes on grazed land and usually on table drains or adjacent to drainage lines or watercourses, in areas with rainfall of between 450 and 700 mm. The species was not detected on site and no records occur within 10 km. Considering the above, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCT **74** within the subject site, consequently about **1.24 ha** of these PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur within the search area and the narrow extent of the subject site, it is it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Dichanthium setosum	Bluegrass	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. The species was not detected on site and no records occur within 10 km. Considering the above, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **26, 78** and **81** within the subject site, consequently about **0.8 ha** of these PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur within the search area and the narrow extent of the subject site, it is it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Digitaria porrecta	Finger Panic Grass	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.* The species was not detected on site and no records occur within 10 km. Considering the above, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **26** and **81** within the subject site, consequently about **0.53 ha** of these PCT would be modified/removed because of the proposal. However, no records have been documented within the search area. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur within the search area and the narrow extent of the subject site, it is it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Diuris tricolor	Pine Donkey Orchid	The Pine Donkey Orchid grows in sclerophyll forest among grass, often with native Cypress Pine (*Callitris* spp.). It is found in sandy	N/A	i. This species is associated with the PCTs **70, 81, 248, 267** and **469** within the subject site, hence about **16.26 ha** of these PCTs would be modified/removed because of the proposal.	No AOBV present within or close to the	Yes. See **Appendix G**	No significant impact will arise to the local viability of

		soils, either on flats or small rises. Also recorded from a red earth soil in a Bimble Box community in western NSW. In total, 17 records of this species occur within the 10 km search area. As the field survey was conducted in January, outside of the survey window for this species (September – October), when the species may have already died off below ground level, it is not possible to determine the presence/absence of this species within the subject site. However, other nearby targeted surveys conducted by OzArk during the appropriate survey period have not detected the species. Furthermore, most records within the 10 km search area occur within Mugga Hill Reserve, the Travelling Stock Route opposite Mugga Hill Reserve, and in Little Beni State Conservation Area. As such, the proposal is unlikely to place a local population at risk of extinction.		Seventeen records have been documented within the search area. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Considering the result of nearby targeted surveys, the narrow extent of the impact footprint, and the location of known records within the 10 km search area, it is unlikely that the proposal would jeopardise the long-term survival of the species.	subject site.		this species or its habitat due to the undertaking of the proposal
Homoranthus darwinioides	Fairy Bells	This species grows in various woodland habitats with shrubby understoreys, usually in gravely sandy soils. Only one record (from 1897) occurs within the 10 km search area. As such, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCT **469** within the subject site, hence about **0.6 ha** of this PCT would be modified/removed because of the proposal. One record has been documented within the search area. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

				iii. Considering the age of the single record within the search area and the narrow extent of the impact footprint, it is unlikely that the proposal would jeopardise the long-term survival of the species.			
Indigofera efoliata	Leafless Indigo	Dies back to a substantial underground rootstock in unfavourable seasons and it is possible that aerial parts do not appear at all unless there is significant rainfall. The species was not detected on site. Ten records occur within 10 km though these records are all over 100 years old. Considering the above, and the narrow extent of the impact footprint, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCT **248** within the subject site, hence about **1.84 ha** of this PCT would be modified/removed because of the proposal. Ten records have been documented within the search area. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Considering the age of the records within the search area and the narrow extent of the impact footprint, it is unlikely that the proposal would jeopardise the long-term survival of the species.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Lepidium aschersonii	Spiny Peppercress	This species is not widespread, occurs in the marginal central-western slopes and north-western plains regions of NSW (and potentially the southwestern plains). The species was not detected on site and no records occur within 10 km. As such, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **74** and **81** within the subject site, consequently about **1.67 ha** of these PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Monotaxis macrophylla	Large-leafed Monotaxis	*Monotaxis macrophylla* displays the properties of a fire ephemeral species in many ways. Germination is stimulated by the passage of fire, individual plants	N/A	i. This species is associated with the PCT **469** within the subject site, consequently about **0.6 ha** of this PCT would be modified/removed because of the proposal.	No AOBV present within or close to the	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or

		have a short life span, a large biomass is produced in a short period of time, flowering occurs shortly after germination, and populations do not persist in the absence of fire. The species was not detected on site and no records occur within 10 km. As such, the proposal is unlikely to place a local population at risk of extinction.		ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is unlikely that the proposal would affect the species long-term survival.	subject site.		its habitat due to the undertaking of the proposal
Pilularia novae-hollandiae	Austral Pillwort	Austral Pillwort grows in shallow swamps and waterways, often among grasses and sedges. It is most often recorded in drying mud as this is when it is most conspicuous. The species was not detected on site and no records occur within 10 km. As such, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCT **74** within the subject site, consequently about **1.24 ha** of this PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Pomaderris queenslandica	Scant Pomaderris	Widely scattered but not common in north-east NSW and in Queensland. It is known from several locations on the NSW north coast and a few locations on the New England Tablelands and North West Slopes, including near Torrington and Coolata. The species was not detected on site and no records occur within 10 km. As such, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **78** and **469** within the subject site, consequently about **0.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Tylophora linearis		Growing in low-altitude sedimentary flats in dry scrub and open forests, this species is typically found in association with *Acacia haeoides, A. lineata, Melaleuca uncinate,* and various *Casuarina* and *Myoporum* species. Two records of this species (from 2010) occur within the 10 km search area. Both records are located within the Beni State Conservation Area, approximately 9.3 km from the subject site. Furthermore, the species was not detected during the field survey. As such, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **70** and **469** within the subject site, consequently about **1.61 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the distance from known records and the inability to detect the species during the field survey, it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Prasophyllum sp. Wybong		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. No records occur within 10 km. As such, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **81** and **267** within the subject site, consequently about **12.81 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Pterostylis cobarensis	Greenhood Orchid	Habitats are eucalypt woodlands, open mallee or *Callitris* shrublands on low stony ridges and slopes in skeletal sandy-loam soils. Associated species include *Eucalyptus morrisii, E. viridis, E. intertexta, E. vicina, Callitris*	N/A	i. This species is associated with the PCT **70** within the subject site, consequently about **1.01 ha** of this PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the

		glaucophylla, Geijera parviflora, Casuarina cristata, Acacia doratoxylon, Senna spp. and *Eremophila* spp. In total, seven associated species were recorded during the field survey. However, no Greenhood Orchid records occur within the 10 km search area. As such, the proposal is unlikely to place a local population at risk of extinction.		will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is it is unlikely that the proposal would affect the species long-term survival.			undertaking of the proposal
Swainsona murrayana	Slender Darling Pea	This species 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 produce winter-spring growth, flower in spring to early summer and then die back after flowering. They re-shoot readily and often carpet the landscape after good cool-season rains. No associated species were recorded during the field survey. Furthermore, no Slender Darling Pea records occur within the 10 km search area. As such, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **26, 81,** and **248** within the subject site, consequently about **2.37 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Swainsona recta	Small Purple-pea	This species grows in association with understorey dominants that include Kangaroo Grass *Themeda triandra*, poa tussocks *Poa* spp. and spear-grasses *Austrostipa* spp. These understorey dominants were detected during the field survey. However, no Small Purple-	N/A	i. This species is associated with the PCT **267** within the subject site, hence about **12.38 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the

		pea records occur within the 10 km search area. As such, the proposal is unlikely to place a local population at risk of extinction.		will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is it is unlikely that the proposal would affect the species long-term survival.			undertaking of the proposal
Swainsona sericea	Silky Swainson-pea	The Silky Swainson-pea grows in a variety of habitats, from natural temperate grasslands to snow gum woodlands. They can on occasion be found in association with *Callitris* species, which were present within the subject site. However, no *Swainsona* species were detected during the field survey, nor are there any records within the 10 km search area. Furthermore, *S. sericea*'s stronghold in NSW is on the Monaro, > 400 km south of the subject site. Given the significant distances, the subject site is not likely to be critical to the lifecycle of the species.	N/A	i. This species is associated with the PCTs **61, 70, 74, 248, 267,** and **469** within the subject site, consequently about **17.17 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area, and the large distance from the Monaro, it is it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Cercartetus nanus	Eastern Pygmy-possum	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	N/A	i. This species is associated with the PCTs **70, 74, 78, 248** and **469** within the subject site, consequently about **4.96 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is unlikely there would be significant impact to the habitat of this species should the proposal progress.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		occur in grassy woodlands and the presence of Eucalypts alone is sufficient to support populations in low densities. No records occur within 10 km. As such, the proposal is unlikely to place a local population at risk of extinction.					
Chalinolobus dwyeri	Large-eared Pied Bat	The Large-eared Pied Bat roosts in caves, crevices in cliffs, old mine workings and in disused Fairy Martin nests. With the subject site lacking these crucial features for the species, it may be used for foraging but is unlikely to be critical to the lifecycle of the species. Furthermore, no records occur within 10 km. As such, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **70, 78,** and **267** within the subject site, consequently about **13.66 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur within the search area and the narrow extent of the subject site, it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Chalinolobus picatus	Little Pied Bat	Occurs in dry open forest, open woodland, mulga woodlands, chenopod shrublands, cypress pine forest and mallee and Bimble box woodlands. The species roosts in caves, rock outcrops, mine shafts, tunnels, tree hollows and buildings. Six records occur within 10 km. However, given the narrow extent of the subject site and the scarcity of suitable hollow-bearing trees, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **70, 74, 78, 81, 248, 267 and 469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the few records within the search area and the narrow extent of the subject site, it is unlikely that the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Dasyurus maculatus	Spotted-tailed Quoll	The Spotted-tailed Quoll is the largest marsupial carnivore found on the Australian mainland. Quolls utilise hollow-bearing trees, fallen logs and rocky outcrops as den sites. Home ranges vary in size considerably, from hundreds to thousands of hectares (depending on sex). The species was not detected on site and only a single record occurs within 10 km. Considering that only a single record occurs within the search area, and the substantial size of the home ranges for this species, relative to the size of the subject site, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **78, 81, 267** and **469** within the subject site, hence about **13.68 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that only one record occurs within the search area and the narrow extent of the subject site, it is unlikely the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Miniopterus orianae oceanensis	Large Bent-winged Bat	This species forms discrete populations centred around a maternity cave which is used annually, outside of breeding they disperse into smaller groups in ~300 km radius. Primarily roost in caves but will also use derelict mines, storm water tunnels, buildings, and other structures. Although seven records of the species occur within 10 km, the subject site does not contain suitable roosting opportunities for the species. Considering the above, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is not associated with any of the PCTs encountered within the subject site. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the lack of suitable roosting features and the narrow extent of the subject site, it is unlikely the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

Myotis macropus	Southern Myotis	This species forages over water and generally roosts close to water in groups of 10 – 15. Roosting occurs in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. The subject site contains limited hollow-bearing trees suitable for roosting. Furthermore, no records occur within 10 km. Considering the limited impacts to foraging and roosting habitat for this species, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **74, 78, 81, 248 267 and 469** within the subject site, consequently about **13.66 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is unlikely there would be significant impact to the long-term survival of the species.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Nyctophilus corbeni	Corben's Long-eared Bat	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. Only a single record (from 1999) occurs within 10 km. Considering this, and the limited impacts to foraging and roosting habitat for this species, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **26 70, 78, 81, 248, 267 and 469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that only one record occurs within the search area and the narrow extent of the subject site it is unlikely the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Petaurus australis	Yellow-bellied Glider	Occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. Forest type preferences vary with latitude and elevation; mixed coastal forests to	N/A	i. This species is associated with the PCTs **70, 74, 81, 248,** and **267** within the subject site, consequently about **16.89 ha** of these PCTs would be modified/removed because of the proposal.	No AOBV present within or close to the	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or

		dry escarpment forests in the north; moist coastal gullies and creek flats to tall montane forests in the south. No records occur within 10 km. As such, the proposal is unlikely to place a local population at risk of extinction.		ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is unlikely the proposal would affect the species long-term survival.	subject site.		its habitat due to the undertaking of the proposal
Petaurus norfolcensis	Squirrel Glider	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. Only a single record occurs within 10 km. Considering this, and the low impact to hollow-bearing trees, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **74** and **267** within the subject site, hence about **13.62 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that only one record occurs within the search area, and the narrow extent of the subject site, it is unlikely the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Petrogale penicillata	Brush-tailed Rock-wallaby	Occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. Shelter or bask during the day in rock crevices, caves and overhangs and are most active at night when foraging. The subject site does not have caves, boulders or other suitable habitat features to support this species. Furthermore, the species was not detected on site and no records occur within 10 km. Considering the above, the	N/A	i. This species is associated with the PCTs **70, 78, 81,** and **267** within the subject site, consequently about **14.09 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the lack of suitable habitat and absence or records within the search area, it is unlikely the proposal would affect the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		proposal is unlikely to place a local population at risk of extinction.					
Phascogale tapoatafa	Brush-tailed Phascogale	Prefer dry sclerophyll open forest with sparse groundcover of herbs, grasses, shrubs or leaf litter. Also inhabit heath, swamps, rainforest and wet sclerophyll forest. No records occur within 10 km. Considering this, and the narrow extent of the impact footprint, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **74** and **267** within the subject site, consequently about **13.62 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area, it is unlikely there would be a significant impact to the long-term survival of the species.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Phascolarctos cinereus	Koala	The Koala is a highly selective browser, extremely dependent on the presence of food tree species. As the subject site occurs within the Western Slopes and Plains Koala Management Area, one primary feed tree species (River Red Gum) and six secondary food tree species are present. Seven records occur within 10 km. However, no Koala individuals or signs of presence were detected during the field survey. Considering the relative scarcity of records, and the narrow extent of the impacts, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **26, 70, 74, 78, 81, 248 and 267** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Considering the inability to detect the species during the field survey, the relative scarcity of records, and the narrow extent of the impacts, the proposal is unlikely that the proposal would jeopardise the long-term survival of the species.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Pseudomys novaehollandiae	New Holland Mouse	Known to inhabit open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes. It is a social	N/A	i. This species is associated with the PCT **469** within the subject site, consequently about **0.6 ha** of this PCT would be modified/removed because of the proposal.	No AOBV present within or close to the	Yes. See **Appendix G**	No significant impact will arise to the local viability of

		animal, living predominantly in burrows shared with other individuals. No records occur within 10 km; therefore, the proposal is unlikely to place a local population at risk of extinction.		ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is unlikely there would be significant impact to the long-term survival of the species.	subject site.		this species or its habitat due to the undertaking of the proposal
Pteropus poliocephalus	Grey-headed Flying-fox	This species is found in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Its roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, and in vegetation with a dense canopy. The nearest mapped camp is located approximately 3.1 km southwest of the subject site, along the Macquarie River. As of 2021, this camp consisted of 1-499 individuals (as per the National Flying-fox Monitor). Given the distance between the site and the nearest camp, individuals would only use available habitat within the subject site for foraging purposes. There are 32 records of this species within the 10 km search area. It is likely that most of these records are associated with the Macquarie River roosting camp. Considering that numerous urban gardens within the Dubbo region are likely to contain suitable	N/A	i. This species is associated with the PCTs **70, 78, 81, 267** and **469** within the subject site, hence about **14.68 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Considering the distance to the nearest mapped camp and the narrow extent of the impacts, it is unlikely that the proposal would jeopardise the long-term survival of the species.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		foraging habitat, and the larger area of similar habitat that would remain within the study area, the proposal is unlikely to place the local population of this species at risk of extinction.					
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	The Yellow-bellied Sheathtail-bat roosts in groups of up to six, in small tree hollows, up to three of which will be impacted by this proposal. Nine records of this species occur within the search area. Considering the narrow extent of the impact, and the relatively few hollows impacted, the proposal is unlikely to place a local population at risk of extinction	N/A	i. This species is associated with the PCTs **26, 70, 74, 78, 81, 248, 267** and **469** within the subject site, hence about **17.87 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given narrow extent of the subject site with relatively few small hollows, it is unlikely that the proposal will impact the species long-term survival.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Sminthopsis macroura	Stripe-faced Dunnart	Native dry grasslands and low dry shrublands, often along drainage lines where food and shelter resources tend to be better. They shelter in cracks in the soil, in grass tussocks or under rocks and logs. No records occur within 10 km; therefore, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCT **26** within the subject site, consequently about **0.1 ha** of this PCT would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given that no records occur with the search area it is unlikely there would be significant impact to the long-term survival of the species.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Vespadelus troughtoni	Eastern Cave Bat	A cave-roosting species that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded	N/A	i. This species is associated with the PCTs **70, 78, 81, 267** and **469** within the subject site, consequently about **14.68 ha** of these PCTs	No AOBV present within or close to the	Yes. See **Appendix G**	No significant impact will arise to the local viability of

		roosting in disused mine workings, occasionally in colonies of up to 500 individuals. No roosting habitat would be impacted, and no records occur within 10 km; therefore, the proposal is unlikely to place a local population at risk of extinction.		would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Given the absence of nearby records and roosting habitat, it is unlikely the proposal would interfere with the long-term survival of the species.	subject site.		this species or its habitat due to the undertaking of the proposal
Aprasia parapulchella	Pink-tailed Legless Lizard	Inhabits sloping, open woodland areas with predominantly native grassy ground layers, particularly those dominated by Kangaroo Grass (*Themeda australis*). Also, found beneath small, partially embedded rocks and appear to spend considerable time in ant burrows below these rocks. The subject site contained very little surface rock and no records occur within 10 km. Therefore, the proposal is unlikely to place a local population at risk of extinction.	N/A	i. This species is associated with the PCTs **267 and 469** within the subject site, consequently about **12.98 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Considering the subject site contained very little surface rock and no records occur within 10 km, it is unlikely there would be a significant impact to the long-term survival of the species.	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal
Hoplocephalus bitorquatus	Pale-headed Snake	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. No records occur within 10 km and very few hollow-bearing trees occur within	N/A	i. This species is associated with the PCTs **26, 78,** and **469** within the subject site, consequently about **0.97 ha** of these PCTs would be modified/removed because of the proposal. ii. The subject site consists of derived and remnant vegetation, with existing fragmentation associated with the existing line. The proposal will increase fragmentation in areas where a new alignment is proposed. iii. Considering, no records occur within 10 km and very few hollow-bearing trees occur within	No AOBV present within or close to the subject site.	Yes. See **Appendix G**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal

		the impact footprint; therefore, the proposal is unlikely to place a local population at risk of extinction.		the impact footprint therefore, it is unlikely the proposal would interfere with the long-term survival of the species.			

BC Act Tests of Significance for Threatened Ecological Communities

Community	a.	b.	c.	d.	e.	Impact Significance
Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	N/A	i. The occurrences of PCT 81, 248 and 267 within the subject site fit the criteria for this TEC. Consequently, up to 14.65 ha of this TEC would be removed or modified due to this proposal. Although the total area of occupancy of this TEC within the study area was unable to be confirmed within the scope of the field survey, the TEC was observed to extend beyond the subject site particularly between poles 27 and 28 for PCT 81, poles 35 and 36 for PCT 248 and between multiple poles from 45 to 81 for PCT 267. This EEC has been extensively cleared from the study area, and only small patches remain. As such, any impact to this EEC is highly detrimental to its persistence within the landscape. Therefore, efforts must be made to retain as much of this EEC as possible. Provided the mitigation measures outlined in **Section 7** are adhered to, and considering that the patches extend beyond the subject site, the proposal will not have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction.	i. The proposal will impact up to 14.65 ha of this EEC. Minor indirect impacts to adjacent occurrences of the EEC may also result. ii. The surrounding landscape is already highly fragmented as a result of agricultural landuse, infrastructure, and residential construction. The proposal will widen the existing fragmentation, via the loss of isolated trees, and reduce connectivity within the landscape. Where possible, mature *Eucalyptus microcarpa* must be retained to reduce impacts to the TEC as much as possible. iii. Considering this EEC has been extensively cleared from the study area and only small patches remain, the local occurrence of this EEC should be considered important to the long-term survival of the community. As such, opportunities to minimise or mitigate the impacts of this proposal on the EEC must be considered wherever possible.	No. AOBV not present	Yes. The following KTPs were assessed as being very likely to be exacerbated by the proposal (**Appendix G**): • Clearing of native vegetation • Loss of Hollow-bearing trees The following KTPs were additionally assessed as being likely to be exacerbated by the proposal (**Appendix G**): • Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners *Manorina melanocephala.* • Anthropogenic Climate Change • Bushrock removal • Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus* (L.) • Removal of dead wood and dead trees, • Competition from feral honey bees, *Apis mellifera* • Infection by *Psittacine Circoviral* (beak and feather) Disease affecting endangered psittacine	No significant impact provided mitigation measures in **Section 7.2** are adhered to

		ii. Direct and indirect impacts of the proposal would be confined to fragmented occurrences of remnant woodland. Any impact to this EEC is highly detrimental to its persistence within the landscape. Therefore, efforts must be made to retain as much of this EEC as possible. Providing the mitigation measures outlined in **Section 7** are adhered to, the proposal will not have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction.			species and populations, and • Invasion of native plant communities by exotic perennial grasses. However, the mitigation measures in **Section 7.2** of this BAR will reduce the likelihood of exacerbating KTPS.	
Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes bioregions	N/A	i. The occurrence of PCT 26 within the subject site fits the criteria for this TEC. Consequently, up to 0.10 ha of this community would be removed or modified due to this proposal. Although the total area of occupancy in the region was not thoroughly investigated, the EEC was observed to extend beyond the subject site. This EEC has been extensively cleared from the study area, and only small patches remain. As such, any impact to this EEC is highly detrimental to its persistence within the landscape. Therefore, efforts must be made to retain as much of this EEC as possible. Provided the mitigation measures outlined in **Section 7** are adhered to, the proposal will not have an adverse effect on the extent of the ecological community such that its local	i. The proposal will impact up to 0.10 ha of this EEC. Minor indirect impacts to adjacent occurrences of the EEC may also result. ii. The surrounding landscape is already highly fragmented as a result of agricultural landuse, infrastructure, and residential construction. The proposal will widen the existing fragmentation, via the loss of isolated trees, and reduce connectivity within the landscape. Where possible, mature Weeping Myall trees should be retained to reduce impacts to the TEC as much as possible. iii. Considering this EEC has been extensively cleared from the study area and only small patches remain, the local occurrence of this EEC should be considered important to the long-term survival of the community. As such, opportunities to minimise or mitigate the	No. AOBV not present	Yes. The following KTPs were assessed as being very likely to be exacerbated by the proposal (**Appendix G**): • Clearing of native vegetation • Loss of Hollow-bearing trees The following KTPs were additionally assessed as being likely to be exacerbated by the proposal (**Appendix G**): • Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners *Manorina melanocephala.* • Anthropogenic Climate Change • Bushrock removal	No significant impact provided mitigation measures in **Section 7.2** are adhered to

		occurrence is likely to be placed at risk of extinction. ii. Direct and indirect impacts of the proposal would be confined to fragmented occurrences of isolated Weeping Myall trees, with no remnant understorey. Any impact to this EEC is highly detrimental to its persistence within the landscape. Therefore, efforts must be made to retain as much of this EEC as possible. Considering the mitigation measures outlined in **Section 7** are adhered to, the proposal will not have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction.	impacts of this proposal on the EEC must be considered.		• Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus* (L.) • Removal of dead wood and dead trees, • Competition from feral honey bees, *Apis mellifera* • Infection by *Psittacine Circoviral* (beak and feather) Disease affecting endangered psittacine species and populations, and • Invasion of native plant communities by exotic perennial grasses. However, the mitigation measures in **Section 7.2** of this BAR will reduce the likelihood of exacerbating KTPS.	
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	N/A	i. The occurrence of PCT 74 within the subject site fits the criteria for this TEC. Consequently, up to 1.24 ha this CEEC would be removed or modified due to this proposal. Although the total area of occupancy in the region was not thoroughly investigated, the CEEC was observed to extend beyond the subject site between poles 42 and 43. This CEEC has been extensively cleared from the study area, and only small patches remain. As such, any impact to this CEEC is highly detrimental to its persistence within the landscape. Therefore, efforts must be made to retain as much of	i. The proposal will impact up to 1.24 ha of this CEEC. Minor indirect impacts to adjacent occurrences of the CEEC may also result. ii. The surrounding landscape is already highly fragmented as a result of agricultural landuse, infrastructure, and residential construction. The proposal will widen the existing fragmentation, via the loss of isolated trees, and reduce connectivity within the landscape. Where possible, mature White Box, Yellow Box and/or Blakely's Red Gum should be retained to reduce impacts to the TEC as much as possible. iii. Considering this CEEC has been extensively cleared from the study area	No. AOBV not present	Yes. The following KTPs were assessed as being very likely to be exacerbated by the proposal (**Appendix G**): • Clearing of native vegetation • Loss of Hollow-bearing trees The following KTPs were additionally assessed as being likely to be exacerbated by the proposal (**Appendix G**): • Aggressive exclusion of birds from woodland and forest habitat by abundant	No significant impact provided mitigation measures in **Section 7.2** are adhered to

		this CEEC as possible. Provided the mitigation measures outlined in **Section 7** are adhered to, and considering that the patch extends beyond the subject site, the proposal will not have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction. ii. Direct and indirect impacts of the proposal would be confined to fragmented occurrences of remnant woodland. Any impact to this EEC is highly detrimental to its persistence within the landscape. Therefore, efforts must be made to retain as much of this EEC as possible. Considering the mitigation measures outlined in **Section 7** are adhered to, the proposal will not have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction.	and only small patches remain, the local occurrence of this CEEC should be considered important to the long-term survival of the community. As such, opportunities to minimise or mitigate the impacts of this proposal on the CEEC must be considered.		Noisy Miners *Manorina melanocephala.* • Anthropogenic Climate Change • Bushrock removal • Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus* (L.) • Removal of dead wood and dead trees, • Competition from feral honey bees, *Apis mellifera* • Infection by *Psittacine Circoviral* (beak and feather) Disease affecting endangered psittacine species and populations, and • Invasion of native plant communities by exotic perennial grasses. However, the mitigation measures in **Section 7.2** of this BAR will reduce the likelihood of exacerbating KTPS.	

APPENDIX E – FM ACT TESTS OF SIGNIFICANCE

Fisheries Management Act 1994 Test of Significance

The threatened species test of significance (or "7-part test") is used to determine if a development or activity is likely to significantly affect threatened species or ecological communities, or their habitats. The test of significance is set out in Part 7A, Division 12 of the *Fisheries Management Act 1994*, and is completed in accordance with the questions set out below:

The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

a. in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

b. in the case of an endangered population, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction,

c. in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity—

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

d. in relation to the habitat of a threatened species, population or ecological community—

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the threatened species, population or ecological community in the locality,

e. whether the proposed development or activity is likely to have an adverse effect on any critical habitat (either directly or indirectly),

f. whether the proposed development or activity is consistent with a Priorities Action Statement,

g. whether the proposed development constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

FM Act Tests of Significance

The aquatic ecological community in the Darling River Ecological community – Endangered Ecological Community							
a.	**b.**	**c.**	**d.**	**e.**	**f.**	**g.**	**Impact Significance**
N/A	N/A	i. This community includes all fish and aquatic invertebrates within all natural rivers, creeks, streams and associated lagoons, billabongs, lakes, wetlands, paleochannels, floodrunners, effluent streams and the floodplains of the Darling River within NSW (DPI primefect 2007). Consequently, the community occurs within the subject site as the Macquarie River and its tributaries. The proposal involves rebuilding of powerline from Dubbo South to Forest Glen Solar Farm. As such, the proposal is unlikely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction. ii. The proposal will not have direct interference with the Macquarie River therefore the proposal is unlikely to adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.	i. Considering the powerlines would be overhead of the Macquarie River, the proposal would not lead to any compositional changes to this EEC. ii. The proposal will not fragment or isolate any aquatic habitat. iii. Considering the aquatic ecosystem of the lower Macquarie River has been greatly modified since European settlement, by river regulation, agricultural land uses and the introduction of non-native species, the occurrence of the threatened aquatic ecological community within the study area should be considered important to the long-term survival of the community. Considering the relatively minor nature of the impact, the proposal is unlikely to significantly reduce the extent or condition of this occurrence.	Although critical habitat has not been identified, it is expected that the Macquarie River constitutes critical habitat for this community. The proposal will not lead to a modification of the habitat.	The proposal would not have the potential to contradict any of the following Recovery Actions for this EEC: • Allocating and managing environmental water flows in regulated rivers through the water sharing plan processes • Riparian vegetation management and restoration projects being conducted by landholders, community groups and Catchment Management Authorities. • Providing fish passage by removing barriers or installing fishways in consultation with affected stakeholders. • Conserving and, where possible, restoring habitats through the protection of aquatic and riparian vegetation and encouraging the	Yes. The proposal is likely to exacerbate the following KTPs listed under the FM Act: • Degradation of native riparian vegetation along New South Wales water courses.	No significant impact

					use of effective erosion control measures. However, the implementation of the mitigation measures proposed in Table 7-1 will reduce the risk of the proposal contradicting recovery actions.		

Silver Perch (*Bidyanus bidyanus)* – Vulnerable Species							
a.	**b.**	**c.**	**d.**	**e.**	**f.**	**g.**	**Impact Significance**
i. Silver Perch have been found in a wide range of habitats and climates across the Murray-Darling Basin. They are generally found in faster-flowing water including rapids and races and more open sections of river. Individuals sometimes form large shoals in open water. They are opportunistic omnivores, feeding upon insect larvae, molluscs, annelid worms, algae, and vegetative matter. Silver perch undertake long spawning migratory runs upstream in spring in response to increased water levels and temperatures. The causes of decline in Silver Perch may include predation by introduced fish such as gambusia and redfin perch, habitat loss, egg mortality in weir pools due to stagnation, physical barriers impeding migration (e.g., weirs and dams), rapid fluctuations in water levels (due to water regulation) that have deleterious effects on reproduction and recruitment. The proposal will not have direct interference with the Macquarie River; therefore, the proposal is unlikely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.	N/A	N/A	i. The proposal will require works near the bank of the Macquarie River and 13 of its tributaries. No works will take place directly within a watercourse and no aquatic vegetation, or snags are expected to be impacted. ii. The proposal will not fragment or isolate any aquatic habitat. iii. Although the Macquarie River is likely of value to this threatened species, it is unlikely that the proposed works would significantly impact downstream habitat which may support this species. Provided mitigation measures outlined in **Section 7** are adhered to, the proposal is unlikely to impact the long-term survival of this species.	Critical habitat has not been identified for this endangered species. Considering there are no published records of this species within 100 km, watercourses within the subject site are unlikely to constitute critical habitat for this species.	Coldwater pollution and barriers to fish passage are two of the primary issues identified in the Priorities Action Statement for this species – this proposal would not exacerbate either issue.	One KTP is relevant to the proposal: 1) Degradation of native riparian vegetation along NSW water courses. Owing to the limited disturbance to riparian vegetation required by this proposal, and provided the mitigation measures outlined in **Section 7** are adhered to, this KTP is unlikely to significantly impact the Silver Perch.	No significant impact

Southern Purple Spotted Gudgeon (*Mogurnda adspersa*) – Endangered Species							
a.	**b.**	**c.**	**d.**	**e.**	**f.**	**g.**	**Impact Significance**
i. Southern Purple Spotted Gudgeon are a benthic species that can be found in a variety of habitat types such as rivers, creeks and billabongs with slow-moving or still waters or in streams with low turbidity. Cover in the form of aquatic vegetation, overhanging vegetation from river banks, leaf litter, rocks or snags are important for the species. The proposal will not have direct interference with the Macquarie River; therefore, the proposal is unlikely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.	N/A	N/A	i. The proposal will require works near the bank of the Macquarie River and 13 of its tributaries. No works will take place directly within a watercourse and no aquatic vegetation, or snags are expected to be impacted. ii. The proposal will not fragment or isolate any aquatic habitat. iii. There are records of this species in the Macquarie River in central NSW. Although the Macquarie River is likely of value to this threatened species, it is unlikely that the proposed works would significantly impact downstream habitat which may support this species. Provided mitigation measures outlined in **Section 7** are adhered to, the proposal is unlikely to impact the long-term survival of this species.	Although critical habitat has not been identified, a record within the Dubbo region suggests that the Macquarie River may contain habitat critical to the survival of the species. Considering the proposal would not directly interfere with the Macquarie River, it is not expected to impact any habitat critical to the survival of the species.	Coldwater pollution and barriers to fish passage are two of the primary issues identified in the Priorities Action Statement for this species – this proposal would not exacerbate either issue.	One KTP is relevant to the proposal: 1) Degradation of native riparian vegetation along NSW water courses. Owing to the limited disturbance to riparian vegetation required by this proposal, and provided the mitigation measures outlined in **Section 7** are adhered to, this KTP is unlikely to significantly impact the Southern Purple Spotted Gudgeon.	No significant impact

Eel-tailed Catfish (*Tandanus tandanus)* in the Murray Darling Basin – Endangered Population							
a.	**b.**	**c.**	**d.**	**e.**	**f.**	**g.**	**Impact Significance**
N/A	i. The Eel tailed catfish is a non-migratory, benthic (bottom dwelling) species. The species inhabits a range of freshwater environments including rivers, creeks, lakes, billabongs and lagoons and spawns between September to February when water temperatures are 20-24°C. The causes of decline in Eel tailed catfish may include predation by introduced fish such as gambusia and redfin perch, habitat loss, fishing pressures, and rapid fluctuations in water levels (due to water regulation) that have deleterious effects on reproduction and recruitment. This species prefers clear waters. One of the key threats to the life cycle of this species is the siltation of their spawning sites. The proposal will not lead to any runoff or sedimentation to impact this species. The proposal will not have direct interference with the Macquarie River; therefore, the proposal is unlikely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.	N/A	i. The proposal will require works near the bank of the Macquarie River and 13 of its tributaries. No works will take place directly within a watercourse and no aquatic vegetation, or snags are expected to be impacted. ii. The proposal will not fragment or isolate any aquatic habitat. iii. There are no records of this species on BioNet or the Atlas of Living Australia within the LGA, therefore the watercourses are unlikely to be of key importance to this endangered population.	Critical habitat has not been identified for this endangered population. Considering there are no published records of this species within 35 km, watercourses within the subject site are unlikely to constitute critical habitat for this endangered population.	Recommended Recovery Actions for the Murray Darling population of Eel-tailed Catfish include advising consent authorities during development, scientific research, educating the public, law enforcement at important sites, minimising impacts to habitat, rehabilitating habitat, invasive species control, and stocking. The proposal is not contradictory to the Recommended Recovery Actions for this endangered population.	One KTP is relevant to the proposal: 1) Degradation of native riparian vegetation along NSW water courses. Owing to the limited disturbance to riparian vegetation required by this proposal, and provided the mitigation measures outlined in **Section 7** are adhered to, this KTP is unlikely to significantly impact the Eel-tailed Catfish in the Murray Darling Basin.	No significant impact

Western Population of the Olive Perchlet (*Ambassis agassizii*) – Endangered Population							
a.	**b.**	**c.**	**d.**	**e.**	**f.**	**g.**	**Impact Significance**
N/A	i. Olive Perchlet inhabit rivers, creeks, ponds and swamps. They are usually found in slow-flowing or still waters. During the day the species resides in sheltered areas such as overhanging vegetation, aquatic macrophyte beds, logs, dead branches and boulders, and disperses to feed at night. The causes of the decline in Olive Perchlet may include predation by introduced fish such as gambusia and redfin perch; habitat loss; rapid fluctuations in water levels (due to water regulation) that have deleterious effects on successful reproduction and recruitment. Spawning occurs on rocks and aquatic plants on the streambed at water temperatures above 23°C and therefore takes place between October and December. The proposal will not have direct interference with the Macquarie River; therefore, the proposal is unlikely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.	N/A	i. The proposal will require works near the bank of the Macquarie River and 13 of its tributaries. No works will take place directly within a watercourse and no aquatic vegetation, or snags are expected to be impacted. ii. The proposal will not fragment or isolate any aquatic habitat. iii. There are no records of this species on BioNet or the Atlas of Living Australia within the LGA, therefore the watercourses are unlikely to be of key importance to this endangered population.	Critical habitat has not been identified for this endangered population. Considering there are no published records of this species within 100 km, watercourses within the subject site are unlikely to constitute critical habitat for this endangered population.	Recommended Recovery Actions for this endangered population include advising consent authorities during development, scientific research, educating the public, law enforcement at important sites, minimising impacts to habitat, rehabilitating habitat, invasive species control, and stocking. The proposal is not contradictory to the Recommended Recovery Actions for this endangered population.	One KTP is relevant to the proposal: 1) Degradation of native riparian vegetation along NSW water courses. Owing to the limited disturbance to riparian vegetation required by this proposal, and provided the mitigation measures outlined in **Section 7** are adhered to, this KTP is unlikely to significantly impact the Western Population of the Olive Perchlet.	No significant impact

Trout cod (*Maccullochella macquariensis*) – Endangered Species							
a.	**b.**	**c.**	**d.**	**e.**	**f.**	**g.**	**Impact Significance**
Trout Cod are often found in faster flowing water with rocky and gravel bottoms, but can also be found in some slower flowing, lowland rivers. Large woody snags are very important for the species as they provide complex habitats for each stage of the species' life cycle. The causes of the decline in Trout Cod populations include habitat modification and degradation. Historic overfishing and current illegal fishing practices. Competition with and predation of juveniles by introduced species. Cold water pollution. They form pairs and spawn during spring and early summer when the water temperature is around 15ºC. Females produce 1,200 – 11,000 adhesive eggs (2.5 – 3.6 mm in diameter) that attach to hard substrates and are guarded by the male. Larvae hatch after 5 - 10 days when they are approximately 6 - 9 mm in length and then disperse by drifting in the water column. The proposal will not have direct interference with the Macquarie River; therefore, the proposal is unlikely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.	N/A	N/A	i. The proposal will require works near the bank of the Macquarie River and 13 of its tributaries. No works will take place directly within a watercourse and no aquatic vegetation, or snags are expected to be impacted. ii. The proposal will not fragment or isolate any aquatic habitat. iii. There are records of this species in the Macquarie River in central NSW. Although the Macquarie River is likely of value to this threatened species, it is unlikely that the proposed works would significantly impact downstream habitat which may support this species. Provided mitigation measures outlined in **Section 7** are adhered to, the proposal is unlikely to impact the long-term survival of this species.	Although critical habitat has not been identified, two records within the Dubbo region suggests that the Macquarie River may contain habitat critical to the survival of the species. Considering the proposal would not directly interfere with the Macquarie River, it is not expected to impact any habitat critical to the survival of the species.	Recommended Recovery Actions for this endangered species include: • Habitat protection and restoration • Reduce the impact of Illegal fishing and incidental capture • Minimising risks from inter-specific competition and introduced species • Establishing new populations through stocking • Research and monitoring • Community awareness, involvement and support. The proposal is not contradictory to the Recommended Recovery Actions for this endangered species.	One KTP is relevant to the proposal: 1) Degradation of native riparian vegetation along NSW water courses. Owing to the limited disturbance to riparian vegetation required by this proposal, and provided the mitigation measures outlined in **Section 7** are adhered to, this KTP is unlikely to significantly impact the Trout Cod.	No significant impact

Appendix F – MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The EPBC Act protects nationally and internationally important flora, fauna, ecological communities, and heritage places, which are defined in the EPBC Act as matters of national environmental significance. The EPBC Act policy Matters of National Environmental Significance: Significant Impact Guidelines 1.1 (DoE, 2013) forms the basis of determining if impact to protected matters is significant.

The EPBC Act protected matters search identified four wetlands of international importance, six TECs, 47 threatened species, 12 migratory species and 23 marine species that could possibly occur in the study area. Assessment of the subject site determined that no Ramsar wetland would be impacted by the development.

The following tables give an overview of the assessments of those threatened entities that could occur within the subject site and shows that the proposed activity:

1. Is not likely to have a significant impact on a matter of national environmental significance. The matters of national environmental significance are:
   i. World heritage properties.
   ii. National heritage places.
   iii. Wetlands of international importance.
   iv. Threatened species and ecological communities.
   v. Migratory species.
   vi. Commonwealth marine areas.
   vii. The Great Barrier Reef Marine Park. And;
   viii. Nuclear actions (including uranium mines).
   ix. A water resource, in relation to coal seam gas development and large coal mining development.
2. Is not likely to have a significant impact on the environment in general (for actions by Commonwealth agencies or actions on Commonwealth land) or the environment on Commonwealth land (for actions outside Commonwealth land).

Notes: Important Population as determined by the *Environment Protection and Biodiversity Conservation Act 1999*, is one that for a vulnerable species:

a) is likely to be key source populations either for breeding or dispersal

b) is likely to be necessary for maintaining genetic diversity

c) is at or near the limit of the species range.

A ‘significant impact’ is an impact which is important, notable, or of consequence, having regard to its context or intensity (DoE, 2013).

Wetlands of International Importance

Name	Proximity	Assessment	Assessment of significance required (Yes / No)
Banrock Station wetland complex	700-800km upstream from Ramsar site	The proposal is not within close proximity of the Banrock Station wetland complex.	No
Riverland	700-800km upstream from Ramsar site	The proposal is not within close proximity of the Riverland.	No
The Coorong, and lakes Alexandrina and Albert wetland	800-900km upstream from Ramsar site	The proposal is not within close proximity of the Coorong or Lakes Alexandrina and Albert wetland.	No
The Macquarie Marshes	100-150 km upstream from Ramsar site	The proposal is not within close proximity of the Macquarie Marshes.	No

EPBC Act-Listed Threatened Ecological Communities

Name	Status	Assessment of significance required (Yes / No)
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	No, this community does not occur within the subject site.
Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	No, this community does not occur within the subject site.
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	No, this community does not occur within the subject site.
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	No, this community does not occur within the subject site.
Weeping Myall Woodlands	Endangered	No, this community does not occur within the subject site.
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	No, this community does not occur within the subject site.

EPBC Act-Listed Critically Endangered and Endangered Species

Bidyanus bidyanus – Silver Perch	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	Silver Perch have been found in a wide range of habitats and climates across the Murray-Darling Basin. They are generally found in faster-flowing water including rapids and races and more open sections of river. Individuals sometimes form large shoals in open water. They are opportunistic omnivores, feeding upon insect larvae, molluscs, annelid worms, algae, and vegetative matter. Silver perch undertake long spawning migratory runs upstream in spring in response to increased water levels and temperatures. The causes of decline in Silver Perch may include: predation by introduced fish such as gambusia and redfin perch, habitat loss, egg mortality in weir pools due to stagnation, physical barriers impeding migration (e.g., weirs and dams), rapid fluctuations in water levels (due to water regulation) that have deleterious effects on reproduction and recruitment. The nearest Atlas of Living Australia record for this species is from > 100 km southeast of the subject site, near the Bell River. Furthermore, the proposal will not directly interfere with the Macquarie River. As such, the proposal would not interfere with the spawning migration of this species and would not lead to a long-term decrease in the size of a population of this species.
Reduce the area of occupancy of the species	As the proposal would not remove, isolate, or fragment any aquatic habitat, it would not reduce the area of occupancy for this species.
Fragment an existing population into two or more populations	This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	No critical habitat has been declared for Silver Perch under the EPBC or FM Acts. However, considering the lack of records within 100 km, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	The proposal would not interfere with the spawning migration of this species and would therefore not disrupt the breeding cycle for a population of this species.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not directly interfere with the Macquarie River. However, some riparian vegetation may be impacted. This removal/modification of riparian vegetation is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Considering the limited impact on aquatic habitat and the lack of records within 100 km, the proposal should not interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Maccullochella macquariensis – Trout Cod	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	Trout Cod are often found in faster flowing water with rocky and gravel bottoms, but can also be found in some slower flowing, lowland rivers. Large woody snags are very important for the species as they provide complex habitats for each stage of the species' life cycle. The causes of the decline in Trout Cod populations include habitat modification and degradation. Historic overfishing and current illegal fishing practices. Competition with and predation of juveniles by introduced species. Cold water pollution The nearest Atlas of Living Australia record for this species is located within the Dubbo region. However, considering the proposal would not directly interfere with the Macquarie River, it would not lead to a long-term decrease in the size of a population of this species.
Reduce the area of occupancy of the species	As the proposal would not remove, isolate, or fragment any aquatic habitat, it would not reduce the area of occupancy for this species.
Fragment an existing population into two or more populations	This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	No critical habitat has been declared for Trout Cod under the EPBC or FM Acts. However, considering that two records of this species occurs within the Dubbo region, the Macquarie River may contain habitat critical to the survival of the species. As the proposal would not directly interfere with the Macquarie River, it is not expected to impact any habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	Considering the above, this proposal is unlikely to disrupt the breeding cycle of a population of this species.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not directly interfere with the Macquarie River. However, some riparian vegetation may be impacted. This removal/modification of riparian vegetation is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Considering the limited impact on aquatic habitat, the proposal should not interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Crinia sloanei – Sloane's Froglet	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will lead to the removal of approximately **1.67 ha** of PCTs associated with the species. The subject site is not within a priority management area for the species. Furthermore, there are no documented records within a 10 km radius of the subject site. This species is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats. It prefers wetlands that contain riparian and aquatic vegetation. The disturbance will be limited to the edges of the existing powerline corridor on the subject site, except for the section of the easement between poles 28 and 44, where a new powerline alignment will be created. Considering the scarcity of suitable habitat and absence of records within the search area, it is unlikely that the proposal will result in a long-term reduction in the size of any population.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering the low suitability of habitat within the subject site and lack of records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **1.67 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Fragmentation and degradation of habitat; reduction of water quality; drought and climate change; and susceptibility to the amphibian chytrid fungus are the main threats to this species. The proposal would not significantly impact the recovery of this species.
Conclusion	**No significant impact**

Anthochaera phrygia– Regent Honeyeater	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will lead to the removal of approximately **13.68 ha** of PCTs associated with the species. The subject site is not within a priority management area for the species. There are 21 records of the species within 10 km of the subject site. 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. The proposal will occur mostly within a previously disturbed corridor which does not contain any mistletoe plants. Furthermore, of the 21 records within the 10 km search area, only 1 individual has been recorded in the past 10 years (in 2019). Considering the above, it is unlikely that the proposal will result in a long-term reduction in the size of any population.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Any breeding or foraging habitat in areas where the species is likely to occur must be considered habitat critical to the survival of this species. Within NSW, key areas include the Bundarra-Barraba region, Pilliga Woodlands, Mudgee-Wollar region, Capertee Valley and Hunter Valley. The subject site is not within any of the above regions and is not within a priority management area for the species. Considering the above, and that only a single individual has been recorded in the 10 km search area in the past 10 years, it is unlikely that the subject site contains habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **13.68 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Forest harvesting, residential/industrial development, agricultural clearing, senescence and dieback are the main threats to this species. Although this proposal will exacerbate the impacts of habitat clearing, due to the clearing/modifying of up to **13.68 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Lathamus discolor – Swift Parrot	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will not impact any associated PCT for this species. The subject site is not within a priority management area for the species. Two records have been reported within the search area. As this species breeds in Tasmania, the subject site would represent foraging habitat only. Given the narrow extent of the footprint, it is unlikely that the proposal will result in a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival for the Swift Parrot includes breeding and foraging habitat in Tasmania, and foraging habitat on the Australian mainland. All preferred foraging species within known and likely foraging habitat on the mainland including Yellow Gum (*E. leucoxylon*); Red Ironbark (*E. tricarpa*); Mugga Ironbark (*E. sideroxylon*); Grey Box (*E. microcarpa*); White Box (*E. albens*); Yellow Box (*E. melliodora*); Swamp Mahogany (*E. robusta*); Forest Red Gum (*E. tereticornis*); Blackbutt (*E. pilularis*); and Spotted Gum (*Corymbia maculata*). Four of these species were recorded within the subject site. As such, the subject site contains habitat critical to the survival of the species. However, considering the narrow extent of the subject site which mostly occurs within a previously disturbed corridor, the proposal is unlikely to have a significant adverse effect on habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal won't remove/modify any known associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Modification of habitat loss and fragmentation from forest harvesting, residential/industrial development, agricultural clearing, senescence and dieback are the main threats to this species. The proposal will not exacerbate any of the abovementioned threats. Therefore, it is unlikely to directly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Lophochroa leadbeateri – Pink Cockatoo	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will affect up to **5.49 ha** of associated PCT for this species. The subject site is not within a priority management area for the species. Also, limited records (4) have been reported within the search area. This species is adaptable to a variety of tree-dominated and treeless inland habitats. Although four records occur within the 10 km search area, the species was not detected during the field survey. Furthermore, only three potentially suitable tree hollows occur within the subject site. Considering the above, and the narrow extent of the footprint, it is unlikely that the proposal will result in a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the eastern Pink Cockatoo consist of: • Arid and semi-arid woodlands dominated by mulga (*Acacia aneura*), mallee and box eucalypts, slender cypress pine (*Callitris gracilis*) or belah (*Casuarina cristata*). • Known habitat containing suitable attributes, especially where there are large mature trees with suitable hollows; and • Surrounding matrix of these areas for the role of providing movement corridors for dispersal across the landscape. Habitat within the subject site broadly fits the definition of habitat critical to the survival of the Pink Cockatoo. However, considering the low number of records within the 10 km search area, the low number of potentially suitable tree hollows within the subject site, and the narrow extent of the subject site which mostly occurs within a previously disturbed corridor, the proposal is unlikely to have a significant adverse effect on habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	The species nests in hollow-bearing trees. The survey identified three hollow-bearing trees, specifically between poles 32 to 40. This section falls within the TWPZ easement, where a new access alignment corridor must be created. Considering only three potentially suitable tree hollows may be impacted, the proposal is unlikely to disrupt the breeding cycle of any population. However, where possible, hollow-bearing trees should be avoided (see **Section 7**).
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **5.49 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).

Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Clearing of woodlands, heavy grazing of feeding areas resulting in the removal of seeding grasses and preventing regeneration of food plants, loss of existing and future hollow-bearing trees, and illegal nest-robbing and trapping are the main threats to this species. Although this proposal will exacerbate the impacts of habitat loss, due to the clearing/modifying of up to **5.49 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Melanodryas cucullata cucullata – South-eastern Hooded Robin	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will impact up to **17.87 ha** of associated PCT for this species. The subject site is not within a priority management area for the species. The species requires structurally diverse habitats featuring mature eucalypts, saplings, small shrubs, and tall native grasses. Although two records occur within the 10 km search area, the most recent of these records is from 2010. Furthermore, the species was not detected during the field survey. Considering the above, and the narrow extent of the subject site, the proposal is not anticipated to cause a long-term decrease in any population of this species.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the South-eastern Hooded Robin include areas of dry eucalypt and acacia woodlands and shrublands remnants with an open understorey, some grassy areas and a complex ground layer, often in or near clearings or open areas; structurally diverse habitats featuring: mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses; standing dead or live trees and tree stumps are also essential for nesting, roosting and foraging; and moderately deep to deep soils, rocks and fallen timber which provides essential foraging habitat. The subject site contains a small area of habitat which fits this description. However, considering the narrow extent of the subject site which mostly occurs within a previously disturbed corridor, and the lack of records within the 10 km search area in the past 15 years, the proposal is unlikely to have a significant adverse effect on habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **17.87 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Clearing of woodlands, loss and fragmentation of habitat, modification/destruction of ground habitat from stock, removal of fallen timber, introduction of exotic pasture grasses and habitat loss and degradation are the main threats to the species. The proposal will modify about **17.87 ha** associated PCTs, this should not significantly interfere with the recovery of the species within the region.

Conclusion	No significant impact

Rostratula australis – Australian Painted Snipe	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will affect up to **1.01 ha** of associated PCT for this species. The subject site is not located within a priority management area for the species. This species 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. No nests or individuals of the species were recorded during the field survey. Only four known records occur within 10 km, all of which were recorded in 2009 and are located > 4 km north of the subject site in a swampy area adjacent to Fitzroy Street. Considering the limited records within the search area and the narrow size of the subject site, the proposal is not expected to result in a long-term decline in the species' population.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Due to relatively scarce records and unpredictable movements, very little is known about the specific habitat requirements of the Australian Painted Snipe. The habitat, or biophysical environment, of the Australian Painted Snipe varies across its range, so it is not possible to generate one detailed description or definition of habitat critical to survival. As a guide, habitat critical to the survival of the Australian Painted Snipe can be considered to include: • Any natural wetland habitat where the species is known or likely to occur (especially with suitable breeding habitat). • Any location outside the above area that may be periodically occupied by Australian Painted Snipe when wetland conditions are favourable. Considering the subject site would periodically constitute suitable habitat for this species when rainfall inundates low-lying areas, it is considered habitat critical to the survival of the species. However, considering the age and distance to the four records within the 10 km search area, the proposal is unlikely to have a significant adverse effect on habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **1.01 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).

Interfere with the recovery of the species.	Drainage of wetlands, reduction in water quality, predation by introduced species, inappropriate fire and grazing regimes, and the invasion of exotic weeds are the main threats to this species. Although this proposal will lead to the modification of **1.01 ha** of associated PCT, the proposal should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Austrostipa wakoolica – A spear-grass	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will affect up to **4.19 ha** of associated PCT for this species. The subject site is not within a priority management area for the species. No records of the species occur within 10 km. The habitats for this species include the edges of a lignum swamp with box and mallee; creek banks in grey, silty clay; mallee and lignum sandy-loam flat; open Cypress Pine Forest on low sandy range; and a low, rocky rise. While a few dried creeks cross the path of the proposal footprint, the species was not observed on the site. Moreover, no records of the species occur within 10 km. As such, it is unlikely the proposal will lead to a long-term decrease in any population of this species.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering the inability to detect the species during the field survey, and the lack of records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will reduce the area of associated PCT by up to **4.19 ha**. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Habitat reduction, loss of connectivity, modification, and clearing from pastoral development, irrigation, altered flooding regimes, and agricultural activities such as fence line and water storage maintenance; grazing impacts; drought; and weed invasion and competition, particularly from exotic grasses are the main threats for this species. Although this proposal will exacerbate the impacts of habitat loss, due to the clearing/modifying of up to **4.19 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Indigofera efoliata – Leafless Indigo	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will affect up to **1.84 ha** of associated PCT for this species. The subject site is not within a priority management area for the species. Ten records occur within the 10 km search area; however, all of these records are > 100 years old. Furthermore, the species was not detected during the field survey. As such, it is unlikely the proposal will lead to a long-term decrease in any population of this species.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering the prior disturbance to the site, and the lack of recent records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will reduce the area of associated PCT by up to **1.84 ha**. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Clearing and habitat disturbance; insufficient understanding of threats; and over-collecting are the main threats for this species. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **1.84 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Prasophyllum sp. Wybong	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will impact up to **12.8 ha** associated PCT for this species. The subject site is not within a priority management area for the species. This species is known to occur in open eucalypt woodland and grassland. However, no records occur within the 10 km search area. As such, it is unlikely the proposal will lead to a long-term decrease in any population of this species.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering the prior disturbance to the site, and the lack of records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will reduce the area of associated PCT by up to **12.8 ha** for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The main potential threats to *Prasophyllum sp.* Wybong (C. Phelps ORG 5269) include chemical drift from agricultural properties, illegal collection, trampling by people and climate change. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **12.8 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region
Conclusion	**No significant impact**

Swainsona recta – Small Purple-pea	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will impact up to **12.38 ha** associated PCT for this species. The subject site is not within a priority management area for the species. Associated understorey species were recorded during the field survey. However, no Small Purple-pea records occur within the 10 km search area. As such, it is unlikely the proposal will lead to a long-term decrease in any population of this species.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Given the small number of extant populations, small area of occupancy and the reliance on in-situ protection for the conservation of the species, all populations and the habitat they occupy are critical to the survival of the Small Purple-pea. However, considering the prior disturbance to the site and the lack of records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will reduce the area of associated PCT by up to **12.38 ha** for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Grazing and trampling by cattle, sheep and goats; loss, degradation and fragmentation of habitat and/or populations for residential and agricultural developments; weed invasion; and competition from other native grassland species within the habitat because of reduced fire frequency are the main threats for this species. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **12.38 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region
Conclusion	**No significant impact**

Tylophora linearis	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will impact up to **1.61 ha** of associated PCT for this species. The subject site is not within a priority management area for the species. Two records of this species (from 2010) occur within the 10 km search area. Both records are located within the Beni State Conservation Area, approximately 9.3 km from the subject site. Furthermore, the species was not detected during the field survey. Therefore, it is unlikely that a population occurs within the subject site, and thus the proposal will not lead to a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering the prior disturbance to the site, and the low number of records within the 10 km search area, and the inability to detect the species during the field survey, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will reduce the area of associated PCT by up to **1.61 ha**. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	General roadside maintenance; invasion by perennial grass; forest management and hazard reduction burns; habitat clearing; grazing and trampling by domesticated and feral animals; and a lack of knowledge of the species' ecology are the main threats for this species. The proposal is unlikely to significantly interfere with the recovery of the species within the region. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **1.61 ha** of associated PCT, it is not ideal habitat and this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Chalinolobus dwyeri – Large-eared Pied Bat	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will impact up to **13.66 ha** associated PCT for this species. The subject site is not within a priority management area for the species. The Large-eared Pied Bat roosts in caves, crevices in cliffs, old mine workings and in disused Fairy Martin nests. The subject site lacks these habitat features for roosting. Furthermore, no records occur within 10 km. Therefore, it is unlikely that a population occurs within the subject site, and thus the proposal will not lead to a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the Large-eared Pied Bat includes any maternity roosts, and sandstone cliffs and fertile wooded valley habitat within close proximity of each other. The subject site does not contain suitable roosting habitat and is not within a priority management area for the species. Considering the above, and the absence of records within 10 km, it is unlikely that the subject site contains habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will reduce the area of associated PCT by up to **13.66 ha**. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Clearing of roosting and foraging habitat close to cliffs, caves and old mine workings are the main threats to the species. The proposal is not near cliffs, caves, or old mine workings, and therefore is unlikely to directly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

Dasyurus maculatus – Spotted-tailed Quoll	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will impact up to **13.68 ha** associated PCT for this species. The subject site is not within a priority management area for the species. A single record occurs within 10 km. 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. The species was not detected on site and only a single record occurs within 10 km. Considering that only a single record occurs within the search area, and the substantial size of the home ranges for this species, relative to the size of the subject site, the proposal will not lead to a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	As indicated above it is unlikely that an established population exists at the site. Therefore, the current area of occupancy will not likely be significantly reduced.
Fragment an existing population into two or more populations	As indicated above it is unlikely that an established population exists at the site. This proposal is not expected to result in any additional fragmentation for this species.
Adversely affect habitat critical to the survival of a species	Habitat that is critical to the survival of the Spotted-tailed Quoll includes large patches of forest with adequate denning resources and relatively high densities of medium-sized mammalian prey. Considering the small patch size of forest within the subject site, and the low availability of denning resources, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of a population	As indicated above it is unlikely that an established population exists at the site. Therefore, the proposal would not disrupt the breeding cycle of a population.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will reduce the area of associated PCT by up to **13.68 ha**. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss, modification and fragmentation of habitat, competition with introduced predators such as cats and foxes, deliberate poisoning, shooting and trapping, primarily in response to chicken predation, vehicle strikes and poisoning from eating cane toads are the key threats to this species. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **13.68 ha** of associated PCT, it is not ideal habitat, and this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

***Phascolarctos cinereus* – Koala**	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will impact up to **17.87 ha** of associated PCT for this species. The subject site occurs within the Western Slopes and Plains Koala Management Area. One primary feed tree species (River Red Gum) and six secondary food tree species are present. Seven records occur within 10 km. However, no Koala individuals or signs of presence were detected during the field survey. Considering the relative scarcity of records, the narrow extent of the impacts, and that similar vegetation is abundant within the study area, it is unlikely that the proposal will lead to a long-term decrease in the size of any population.
Reduce the area of occupancy of the species	The proposal will impact up to **17.87 ha** of associated PCT for this species. With the disturbance only being temporary and minimal clearance beyond the already disturbed roadside, it is highly unlikely the proposal will reduce the area of occupancy for the species.
Fragment an existing population into two or more populations	The proposal will not isolate any habitat, therefore not fragmenting any existing population into two or more populations.
Adversely affect habitat critical to the survival of a species	With the subject site being within a priority management area and containing one primary food tree species, it could be considered critical habitat for the species. All impacts to potential habitat for an endangered species must be regarded as deleterious. However, considering the small extent of the footprint and the prior disturbance, the impacts associated with the proposal are unlikely to be significant and should not affect the habitat long term, nor the survival of the species.
Disrupt the breeding cycle of a population	Mitigation measures will be implemented to reduce disruptions to the breeding cycles wherever possible (see **Section 7**).
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **17.87 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss, modification, and fragmentation of habitat; vehicle strikes; predation by roaming or domestic dogs; intense prescribed burns or wildfires that scorch or burn the tree canopy; and disease are the main threats for this species. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **17.87 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

EPBC Act-listed Vulnerable Species

Aphelocephala leucopsis – Southern Whiteface	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **15.93 ha** associated PCT for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species distribution. The Southern Whiteface prefers sites with fallen timber or dead trees and stumps. Although two records occur within the 10 km search area (both > 20 years old), this species was not detected during the field survey. Considering the limited suitability of the site (with little fallen timber, dead trees and stumps), it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species. Furthermore, if a population of this species were to occur within the subject site it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the Southern Whiteface includes areas of: • relatively undisturbed open woodlands and shrublands with an understorey of grasses or 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. Considering the inability to detect the species during the field survey, the lack of records (in the past 20 years) in the 10 km search area, and the low number of hollow-bearing trees, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **15.93 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Habitat loss, degradation, fragmentation and removal, climate change, predation from invasive species, invasive weeds, firewood collection and competition with noisy miners (*Manorina melanocephala*) are the main threats for this species. Although this proposal would exacerbate the loss of habitat, due to the clearing/modifying of up to **15.93 ha** of

	associated PCT, it is not ideal habitat and this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Calyptorhynchus lathami lathami – South-eastern Glossy Black-Cockatoo	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **16.03 ha** of associated PCT for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. Twenty-three South-eastern Glossy Black-Cockatoo records occur within the 10 km search area. However, the species was not detected during the field survey. Considering the scarcity of suitable hollow-bearing trees, and the relatively narrow impact footprint, it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species. Furthermore, if a population of this species were to occur within the subject site it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the South-eastern Glossy Black-Cockatoo include any habitat used by the species for foraging, breeding, roosting, or dispersal. Considering the site represents poor foraging and breeding habitat (low availability of feed trees and hollow-bearing trees), no South-eastern Glossy Black-Cockatoo were recorded during the field survey, and the relatively narrow impact footprint, it is unlikely that the subject site contains habitat critical to the survival of the species
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **16.03 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Reduction of suitable habitat through clearing for development, decline of hollow bearing trees over time due to land management activities, excessively frequent fire and/or predation by feral herbivores which eliminates sheoaks from areas, and reduced access to surface water in close proximity to foraging and nesting habitat are the main threats facing this species. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **16.03 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

Climacteris picumnus victoriae – Brown Treecreeper (eastern subspecies)	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **17.87 ha** of associated PCT for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. Although 16 records occur within the 10 km search area, the species was not detected during the field survey. Furthermore, only three habitat trees with hollows suitably small for this species are located within the subject site. Considering the above, and the relatively narrow impact footprint, it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species. Furthermore, if a population of this species were to occur within the subject site it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the Brown Treecreeper (eastern subspecies) includes areas that have a relatively undisturbed grassy woodland with native understorey; large living or dead trees and stumps with hollows which are essential for roosting and nesting sites; and fallen timber which provides essential foraging habitat. Considering the prior disturbance to the site, the relatively low number of tree hollows, and the inability to detect the species during the field survey, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **17.87 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Historical loss of habitats; fragmentation of woodland and forest remnants which isolates populations and causes local extinctions; ongoing degradation of habitat, particularly the loss of tree hollows and fallen timber from firewood collection; and the lack of regeneration of eucalypt overstorey in woodland due to overgrazing and too-frequent fires are the main threats facing this species. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **17.87 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

Gallinago hardwickii – Latham's Snipe	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will not impact any associated PCT for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. Latham's Snipe is a non-breeding visitor to south-eastern Australia. The species was not detected on site and only three records occur within 10 km. All three records are associated with sewage ponds > 7 km north of the subject site. Considering this, and the marginal suitability of the habitat within the subject site, it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species Further, if a population were to occur within the impact area, it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering the three records within the 10 km search area are concentrated around the sewage treatment ponds > 7 km from the subject site, it is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not impact any associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The major threat facing this species is the drainage and modification of wetlands. The proposal is unlikely to significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Grantiella picta – Painted Honeyeater	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will not impact any associated PCT for this species. Also, only one record has been reported within the search area. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. This species is a specialist feeder on the fruits of mistletoes. Neither the species nor the mistletoe food plants were detected during the field survey. Considering the above, and the relatively narrow impact footprint, it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species Further, if a population were to occur within the impact area, it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the Painted Honeyeater includes: • Known or likely breeding habitat in Boree/Weeping Myall (*Acacia pendula*), Brigalow (*A. harpophylla*) woodlands, box-gum woodlands and box-ironbark forests on the inland slopes of the Great Dividing Range in New South Wales, Victoria and southern Queensland. • All preferred foraging species within known and likely foraging habitat particularly mistletoes of the genus Amyema growing on forest and woodland eucalypts and acacias. Considering the absence of mistletoe within the subject site, and only one Painted Honeyeater has been documented with 10 km, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not impact any associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Clearing of woodlands and open forests, removal of trees with mistletoe infestations, degradation of open forest and woodland remnants, weed infestation, increase of noisy minor populations and inappropriate fire regimes are the key threats to this species. The proposal is unlikely to directly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Hirundapus caudacutus – White-throated Needletail	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will not impact any associated PCT for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. The species is more common in coastal areas, less so inland. Eight records occur within the 10 km search area. However, the species was not detected during the field survey. Considering the species is mostly aerial, feeding on flying insects, it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species Further, if a population were to occur within the impact area, it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering this species is more common in coastal areas, and only a small area of potential foraging habitat occurs within the subject site, it is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not impact any associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Aerial collision with wind turbines, wires, windows and lighthouses are the biggest threats for this species while it resides in Australia. Though the reduction in invertebrate prey due to the loss of woodland habitat is also a threat. It Is unlikely that the proposal will interfere with the recovery of this species.
Conclusion	**No significant impact**

Neophema chrysostoma – Blue-winged Parrot	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will not impact any associated PCT for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. Blue-winged Parrots occur in range of habitats from coastal to semi-arid and favour grasslands and grassy woodlands. Although two records occur within the 10 km search area, the species was not detected during the field survey. Considering the narrow extent of the subject site, it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species Further, if a population were to occur within the impact area, it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the blue-winged parrot includes: • 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. Considering the marginal suitability of habitat within the subject site, the low number of records within the 10 km search area, and the inability to detect the species during the field survey, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will not impact any associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Though there is no clear explanation for the population decline of blue-winged parrots, declines have likely been caused by habitat loss and deterioration in habitat quality. The proposal is unlikely to significantly interfere with the recovery of the species within the region.

Conclusion	No significant impact

Polytelis swainsonii – Superb Parrot	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **17.87 ha** of associated PCT for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. The species inhabit Box-Gum, Box-Cypress-pine and Boree woodlands and River Red Gum Forest. 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 ground. Thirty-six records of the species occur within 10 km. However, this species was not observed during the field surveys, only three hollow-bearing trees are present, and the subject site is outside of the key breeding area for this species (roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west). Considering the above, and the narrow extent of the subject site, it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species Further, if a population were to occur within the impact area, it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	The habitat critical to the survival of the Superb Parrot can be divided into breeding and foraging habitat, as described below: The Superb Parrot usually nests in hollow limbs or holes in the trunk of large eucalypts. Across its range, the Superb Parrot uses two distinct habitat types for breeding: riverine forests in the Riverina, and box-gum woodlands in the tablelands and slopes. In the Riverina of Victoria and New South Wales, Superb Parrots nest in loose colonies along the Murrumbidgee, Edward and Murray Rivers in areas of mature River Red Gum *Eucalyptus camaldulensis* forest. Forests and woodlands used for nesting on the inland slopes and tablelands comprise at least six species of *Eucalyptus* including River Red Gum, Blakely's Red Gum *E. blakelyi*, Apple Box *E. bridgesiana*, Grey Box *E. microcarpa*, White Box *E. albens* and Red Box *E. polyanthemos*. After breeding, Superb Parrots generally move away from their breeding habitat in mid-January. Superb Parrots' foraging habitats vary throughout the year. After the breeding season, which ends in mid-January, some birds move to Boree *Acacia pendula* woodlands between the Murrumbidgee and Murray Rivers. However, the precise distribution and habitat use of others during mid-January to early April is not well documented. From April to August, they inhabit River Red Gum forests and box-pine woodlands in north-central NSW and similar habitats in the Riverina region. Between May and August, they return to riverine forests and nearby woodlands, forming large flocks of adults and immature birds that roam extensively for food. During winter, they are rarely found on the inland slopes, with sightings mostly limited to breeding pairs. The majority of the breeding population shifts to eucalypt-pine woodlands in west-central and north-central NSW. Nesting tree species (River Red Gum, Blakely's Red Gum, Grey Box, and White Box) are present within the subject site and 36 Superb Parrot records occur within the search area. As such, the subject site contains habitat critical to the survival of the species. However, considering the low number of hollow-bearing trees within the subject

	site (*n*=3), the narrow impact footprint, and that the site occurs outside of the core breeding area for this species (roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west), the impact to this critical habitat is unlikely to be significant.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **17.87 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss or degradation of habitat, loss of or competition for hollows, road kills, illegal collection of wild birds, psittacine beak and feather disease, and climate change are the main identified threats to this species. Although this proposal will exacerbate the loss of habitat and tree hollows, due to the clearing/modifying of up to **17.87 ha** of associated PCT and the removal of up to three hollow-bearing trees, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

Stagonopleura guttata – Diamond Firetail	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **17.87 ha** of associated PCTs for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. This species was not observed during the field surveys. Of the nine records within 10 km of the site, the most recent dates back to 2012. This suggests that the subject site may not be a preferred habitat for the species, despite the presence of associated vegetation communities. Considering the above, and the narrow extent of the subject site, it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species Furthermore, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of the diamond firetail includes areas of eucalypt, acacia or casuarina woodlands, open forests and other lightly timbered habitats; low tree density, few large logs, and little litter cover but high grass cover for foraging, roosting and breeding; and Drooping She-oak (*Allocasuarina verticillata*). All **17.87 ha** of native vegetation within the subject site fits this broad definition of habitat critical to the survival of the Diamon Firetail. However, considering the relatively narrow extent of the subject site, and the age of records within 10 km, the proposal is unlikely to constitute a significant impact to this critical habitat.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **17.87 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Modification and destruction of ground- and shrub layers within habitat, invasion of weeds, clearing and fragmentation of a variety of habitats and poor regeneration of open forest and woodland habitats are the key threats to the species. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **17.87 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**No significant impact**

Commersonia procumbens	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **13.99 ha** of associated PCTs for this species. The subject site is not within a priority management area for the species; however, it does occur near the edge of the species' distribution. Therefore, any population of this species within the subject would be considered as important population. This species grows in sandy sites, often along roadsides and also recorded in *Eucalyptus dealbata* and *Eucalyptus sideroxylon* communities. The species was not detected on site. Three records of the species occur within a 10 km radius. These records date back to 1993 and 1887. Considering the above, the subject site is unlikely to contain an important population of this species.
Reduce the area of occupancy of an important population	It is unlikely that an important population exists at the site, see above.
Fragment an existing important population into two or more populations	It is unlikely that an important population exists at the site, see above.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering the inability to detect the species during the field survey and the lack of recent records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	It is unlikely that an important population exists at the site, see above.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **13.99 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Lack of fire or fire suppression, woody shrub competition (particularly thick stands of *Acacia triptera*), invasive grasses, and continued grading of roads and roadsides are the main threats to this species. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **13.99 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

Dichanthium setosum – Bluegrass	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **0.80 ha** of associated PCTs for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. This species is often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. The species was not detected on site and no records occur within 10 km. As such, it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species Furthermore, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering the lack of records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **0.80 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Heavy grazing by domestic stock, clearing of habitat for pasture improvement and cropping, frequent fires, invasion by introduced grasses such as Coolatai and African Lovegrass and Phalaris, as well as ox-eye daisy, road widening, and inappropriate slashing regimes are the key threats to this species. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **0.80 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

Homoranthus darwinioides – Fairy Bells	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **0.6 ha** of associated PCTs for this species. The subject site is not within a priority management area for the species; however, it does occur near the edge of the species' distribution. Therefore, any population of this species within the subject would be considered as important population. This species grows in various woodland habitats with shrubby understoreys, usually in gravely sandy soils. Only one record (from 1897) occurs within the 10 km search area. As such, the subject site is unlikely to contain an important population of this species.
Reduce the area of occupancy of an important population	It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering the lack of recent records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	It is unlikely that an important population exists within the site.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **0.6 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Small population size and species susceptibility to catastrophic events such as fire, clearing, mining, and logging; feral animal and stock impacts; erosion of fragile sandstone habits; high-frequency fire impacting recruitment; and roadside and track (including walking track) maintenance are the key threats to this species. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **0.6 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

Lepidium aschersonii – Spiny Peppercress	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **1.67 ha** of associated PCTs for this species. The subject site is not within a priority management area for the species however, it is at the edge of its distribution. Therefore, any population of this species within the subject site would be considered as important population. This species is often 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*) is often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. The species was not detected on site and no records occur within 10 km. Considering the above, the subject site is unlikely to contain an important population of this species.
Reduce the area of occupancy of an important population	It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, the Spiny Peppercress grows on the ridges of gilgai clays dominated by Brigalow, Belah, Buloke and Grey Box. Gilgai clays do not occur within the subject site. Furthermore, the species was not detected during the field survey and no records occur within the 10 km search area. As such, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	It is unlikely that an important population exists within the site.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **1.67 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Invasion and spread of exotic grasses, overgrazing by domestic livestock, habitat fragmentation and loss due to land clearing, inappropriate application of pesticides, and altered hydrological regimes are the main threats to the species. Although this proposal will exacerbate the impacts of habitat loss, due to the clearing/modifying of up to **1.67 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

Swainsona murrayana – Slender Darling Pea	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **2.37 ha** of associated PCTs for this species. The subject site is not within a priority management area for the species however, it is at the edge of its distribution. Therefore, any population of this species within the subject site would be considered as important population. No associated species were recorded during the field survey. Furthermore, no Slender Darling Pea records occur within the 10 km search area. Considering the above, the subject site is unlikely to contain an important population of this species.
Reduce the area of occupancy of an important population	It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering the lack of records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	It is unlikely that an important population exists within the site.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **2.37 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Heavy grazing; loss of grassland habitat to cultivation; and invasion of grassland habitat by weeds are the main threats to the species. The proposal alone is unlikely to directly interfere with the recovery of the species within the region. Although this proposal will exacerbate the loss of habitat, due to the clearing/modifying of up to **2.37 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

Nyctophilus corbeni – Corben's Long-eared Bat	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **16.62 ha** of associated PCTs for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. This species often 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. Only a single record of the species exists within the search area, approximately 3.5 km north of the subject site from pole 21. The single record dates back to 1999. Considering the above, and the narrow extent of the subject site, it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species Furthermore, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering the lack of recent records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **16.62 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss of remnant semi-arid woodland and mallee habitat, loss of hollow bearing trees, application of pesticides, inappropriate fire regimes, disturbance of breeding sites and winter roosting and loss of habitat are the biggest threats to this species. Although this proposal will exacerbate the loss of habitat and tree hollows, due to the clearing/modifying of up to **16.62 ha** of associated PCT and the removal of up to three hollow-bearing trees, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

Petaurus australis – Yellow-bellied Glider	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **16.89 ha** of associated PCTs for this species. The subject site is not within a priority management area for the species however, it is at the edge of its distribution. Therefore, any population of this species within the subject would be considered as important population. This species often occurs in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. Considering the site has been previously disturbed, it does not constitute mature eucalypt forest. Furthermore, there are no Yellow-bellied Glider records within the search area. Considering the above, and the narrow extent of the subject site, it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species Furthermore, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, specific habitat features critical to survival are den trees (typically veteran rose gums *Eucalyptus grandis*), and sap feed trees (red mahogany *E. resinifera*), and the connectivity of the two. considering the lack of these tree species within the subject site and the absence of Yellow-bellied Glider records within the search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **16.89 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss and fragmentation of habitat. Loss of hollow-bearing trees and the Loss of feed trees are the major threat to the species. Although this proposal will exacerbate the loss of habitat and tree hollows, due to the clearing/modifying of up to **16.89 ha** of associated PCT and the removal of up to three hollow-bearing trees, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

Petrogale penicillata – Brush-tailed Rock-wallaby	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **14.08 ha** of associated PCTs for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. This species often occupies rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. The subject site does not have caves, boulders or other suitable habitat features to support this species. Furthermore, the species was not detected on site and no records occur within 10 km. Considering the above, it is unlikely that the proposal will lead to a long-term decrease in the size of any population of this species Furthermore, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Habitat critical to survival of the species includes rocky refuge habitat, foraging habitat and commuting routes between the two. Considering the lack of nearby rocky habitat and the absence of records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	As indicated above, if a population were to occur within the subject site, it would not fit the definition of an important population under the EPBC Act.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify **14.08 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Predation by foxes and wild dogs, competition for forage and refuge areas with feral goats, and the loss, degradation and fragmentation of habitat are the major threat to the species. Although this proposal will exacerbate the impacts of habitat loss, due to the clearing/modifying of up to **14.08 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

Pseudomys novaehollandiae – New Holland Mouse	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **0.6 ha** of associated PCTs for this species. The subject site is not within a priority management area for the species however, it is at the edge of its distribution. Therefore, any population of this species within the subject would be considered as important population. This species often inhabits open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes. There are no records within the search area. As such, the subject site is unlikely to contain an important population of this species.
Reduce the area of occupancy of an important population	It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	Habitat critical to the survival of this species refers to areas that are necessary: • for activities such as foraging, breeding, shelter or dispersal; • for the long-term maintenance of the species (including the maintenance of other species/subspecies essential to the survival of the species); • to maintain genetic diversity and long-term evolutionary development; or • for the reintroduction of subpopulations or recovery of the species Considering the lack of records within the 10 km search area, the subject site is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	It is unlikely that an important population exists within the site.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **0.6 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss and modification of habitat, weed invasion, Phytophthora, and inappropriate fire and disturbance management are the major threats to the species. Although this proposal will exacerbate the impacts of habitat loss, due to the clearing/modifying of up to **0.6 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

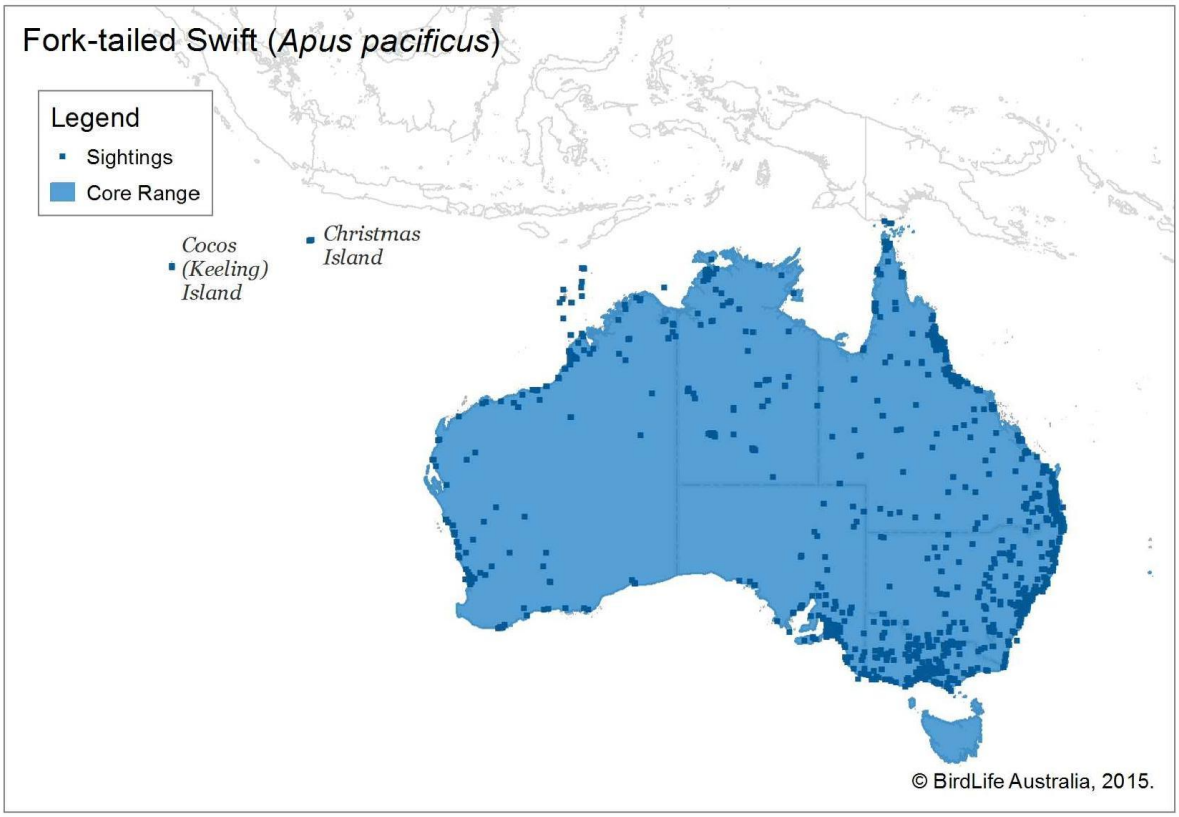
Pteropus poliocephalus – Grey-headed Flying-fox	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **14.68 ha** of associated PCTs for this species. The subject site is not within a priority management area for the species, nor is it at the edge of the species' distribution. The nearest mapped camp is located approximately 3.1 km southwest of the subject site, along the Macquarie River. As of 2021, this camp consisted of 1-499 individuals (as per the National Flying-fox Monitor). Given the distance between the site and the nearest camp, individuals would only use available habitat within the subject site for foraging purposes. There are 32 records of this species within the 10 km search area. It is likely that most of these records are associated with the Macquarie River roosting camp. Considering that numerous urban gardens within the Dubbo region are likely to contain suitable foraging habitat, and the larger area of similar habitat that would remain within the study area, the proposal is unlikely to place the local population of this species at risk of extinction. Furthermore, this local population does not fit the definition of an important population under the EPBC Act.
Reduce the area of occupancy of an important population	As indicated above, the population occurring within the search area does not fit the definition of an important population under the EPBC Act.
Fragment an existing important population into two or more populations	As indicated above, the population occurring within the search area does not fit the definition of an important population under the EPBC Act.
Adversely affect habitat critical to the survival of a species	Important winter and spring vegetation communities are those that contain *Eucalyptus tereticornis, E. albens, E. crebra, E. fibrosa, E. melliodora, E. paniculata, E. pilularis, E. robusta, E. seeana, E. sideroxylon, E. siderophloia, Banksia integrifolia, Castanospermum australe, Corymbia citriodora citriodora, C. eximia, C. maculata, Grevillea robusta, Melaleuca quinquenervia* or *Syncarpia glomulifera*. Habitat critical to the survival of the Grey-headed Flying-fox may also be vegetation communities not containing the above tree species but which: • contain native species that are known to be productive as foraging habitat during the final weeks of gestation, and during the weeks of birth, lactation and conception (August to May) • contain native species used for foraging and occur within 20 km of a nationally important camp as identified on the Department's interactive flying-fox web viewer, or • contain native and or exotic species used for roosting at the site of a nationally important Grey-Headed Flying-Fox camp as identified on the Department's interactive flying-fox web viewer. Important winter and spring vegetation communities were recorded during the field survey. As such, the subject site contains habitat critical to the survival of the species. However, considering the proposal would not impact a roosting camp, and the closest roosting camp is not a nationally important camp, the proposal is unlikely to significantly impact any habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	The breeding cycle of the population would not be affected, as the species was not observed on the subject site, and the proposal would not directly impact any roosting camps.
Modify, destroy, remove, isolate, or decrease the availability or quality of	The proposal will remove/modify up to **14.68 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species.

habitat to the extent that the species is likely to decline	This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Loss of roosting and foraging sites; electrocution on powerlines; entanglement in netting and on barbed wire; heat stress; and conflict with humans are the main threats to the species. Though powerlines are a concern for this species, the proposal itself is unlikely to interfere with the recovery of the species.
Conclusion	**No significant impact**

Aprasia parapulchella – Pink-tailed Legless Lizard	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to **12.98 ha** of associated PCTs for this species. The subject site is not within a priority management area for the species however, it is at the edge of its distribution. Therefore, any population of this species within the subject site would be considered an important population. This species often inhabits sloping, open woodland areas with predominantly native grassy ground layers, particularly those dominated by Kangaroo Grass (*Themeda australis*). Sites are typically well-drained, with rocky outcrops or scattered, partially-buried rocks. The subject site contained very little surface rock and no records occur within 10 km. As such, the subject site is unlikely to contain an important population of this species.
Reduce the area of occupancy of an important population	It is unlikely that an important population exists within the site.
Fragment an existing important population into two or more populations	It is unlikely that an important population exists within the site.
Adversely affect habitat critical to the survival of a species	Critical habitat for this species has not been formally identified. However, considering the lack of records within 10 km, the subject land is unlikely to contain habitat critical to the survival of the species.
Disrupt the breeding cycle of an important population	It is unlikely that an important population exists within the site.
Modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to **12.98 ha** of associated PCT for the species. The proposal will not isolate any habitat for this species. This removal/modification of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	Habitat loss and fragmentation, habitat degradation through rock removal, and pasture improvement including slashing, ploughing and sowing of non-native species are the major threat to the species. Although this proposal will exacerbate the impacts of habitat loss, due to the clearing/modifying of up to **12.98 ha** of associated PCT, this should not significantly interfere with the recovery of the species within the region.
Conclusion	**Non-significant impact**

EPBC Act-listed Migratory Species

Apus pacificus - Fork-tailed Swift	
Significant Impact Guideline	**Assessment**
Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles, or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species.	The subject site occurs within the core non-breeding range of the Fork-tailed Swift (see figure below). As the species is very widely distributed, and as the subject site contains only a small area of potential foraging habitat, the proposal is unlikely to substantially modify, destroy or isolate any area of important habitat for this migratory species.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species.	It is highly unlikely that the proposal site constitutes important habitat for this species. While there is potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species, environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	It is highly unlikely that an ecologically significant proportion of the population occurs within or is dependent on the proposal site. Furthermore, this species breeds on mountain cliffs or island rock caves in Siberia to Japan, and south through eastern China from May-August. As such, the proposal is unlikely to seriously disrupt the lifecycle for this species.
Conclusion	**Non-significant impact**

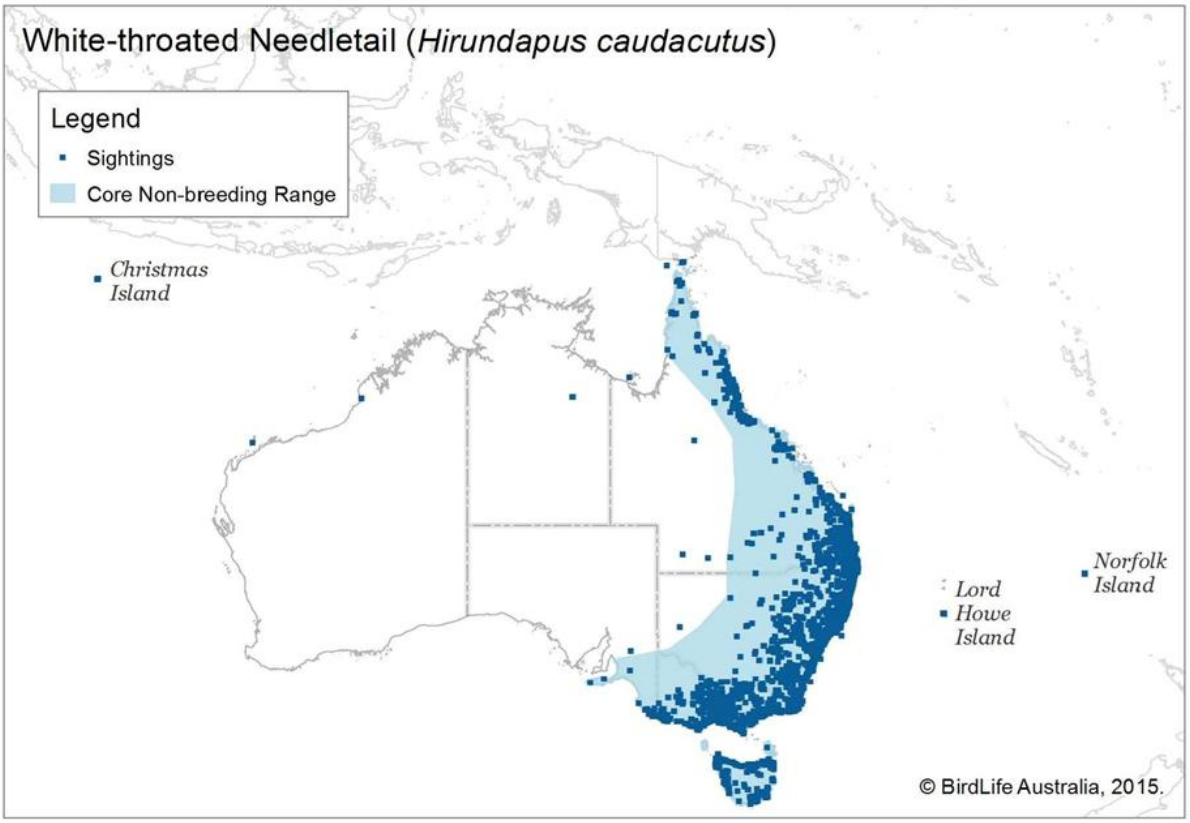


Fork-tailed Swift Core Non-breeding Range

Gallinago hardwickii — Latham's Snipe, Japanese	
Significant Impact Guideline	**Assessment**
Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles, or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species.	Latham's Snipe is a non-breeding visitor to south-eastern Australia. The species was not detected on site and only three records occur within 10 km. All three records are associated with sewage ponds > 7 km north of the subject site. As the species is very widely distributed, and as the subject site contains only a small area of potential foraging habitat, the proposal is unlikely to substantially modify, destroy or isolate any area of important habitat for this migratory species.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species.	It is highly unlikely that the proposal site constitutes important habitat for this species. While there is potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species, environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	It is highly unlikely that an ecologically significant proportion of the population occurs within or is dependent on the proposal site. Furthermore, this species breeds in northern Japan from May – July. As such, the proposal is unlikely to seriously disrupt the lifecycle for this species.
Conclusion	**Non-significant impact**

Tringa stagnatilis – Marsh Sandpiper	
Significant Impact Guideline	**Assessment**
Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles, or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species.	The Marsh Sandpiper is found on coastal and inland wetlands throughout Australia. It is recorded in all regions of NSW but especially the central and south coasts and (inland) on the western slopes of Great Divide and western plains This species was not observed during the field survey. Eleven records of the species occur within 10 km. All 11 records are associated with sewage ponds within Dubbo and most (*n*=10) occur > 7 km north of the subject site. As the species is very widely distributed, and as the subject site contains only a small area of potential foraging habitat, the proposal is unlikely to substantially modify, destroy or isolate any area of important habitat for this migratory species.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species.	It is highly unlikely that the proposal site constitutes important habitat for this species. While there is potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species, environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	It is highly unlikely that an ecologically significant proportion of the population occurs within or is dependent on the proposal site. Furthermore, this species breeds in marshland in eastern Europe, south west Siberia, Mongolia and north China from April – July. As such, the proposal is unlikely to seriously disrupt the lifecycle for this species.
Conclusion	**Non-significant impact**

Hirundapus caudacutus - White-throated Needletail	
Significant Impact Guideline	**Assessment**
Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles, or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species.	The subject site occurs within the core non-breeding range of the White-throated Needletail (see figure below). As the species is very widely distributed, and as the subject site contains only a small area of potential foraging habitat, the proposal is unlikely to substantially modify, destroy or isolate any area of important habitat for this migratory species.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species.	It is highly unlikely that the proposal site constitutes important habitat for this species. While there is potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species, environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	This species breeds in Asia, China, and the Himalayas. As such the proposal is unlikely to seriously disrupt the lifecycle for this species.
Conclusion	**Non-significant impact**



White-throated Needletail Core Non-breeding Range

APPENDIX G – KEY THREATENING PROCESSES

Key Threatening Processes (KTP) predicted as acting on the study area that may be exacerbated by the proposal.

Class	Name	NSW status	Comm. status	Likelihood of Occurrence	Exacerbated by Proposal?
Threat	Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners *Manorina melanocephala.*	KTP	KTP	**Likely**	**Yes** The disturbance of woodland or forest habitat is known to encourage occupancy by Noisy Miners.
Threat	Alteration of habitat following subsidence due to longwall mining	KTP		**Unlikely**	**No** The proposal does not include any activities that would exacerbate this threat.
Threat	Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	KTP		**Unlikely**	**No** The proposal does not include any activities that would exacerbate this threat.
Threat	Anthropogenic Climate Change	KTP	KTP	**Likely**	**Yes** Some unavoidable emissions will occur from machinery.
Threat	Bushrock removal	KTP		**Unlikely**	**Potentially** Some outcropping rock occurs within the subject site (Poles 63 and 64), but it is unlikely to be removed by the proposal. If necessary, it should be relocated nearby.
Threat	Clearing of native vegetation	KTP	KTP	**Very likely**	**Yes** Up to **17.86 ha** of native vegetation will be impacted by the current proposal.
Threat	Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus*	KTP	KTP	**Likely**	**Yes** The spread of grassy weeds that may result from these works could further encourage rabbit activity.
Threat	Competition and habitat degradation by Feral Goats, *Capra hircus* Linnaeus 1758	KTP	KTP	**Unlikely**	**No** The proposal does not include any activities that would exacerbate this threat.
Threat	Competition from feral honey bees, *Apis mellifera*	KTP		**Likely**	**Yes** Up to three hollow-bearing trees would be removed by the proposal. Removal of these trees could exacerbate this KTP. Exacerbation of this KTP could be avoided by retaining these hollow-bearing trees.
Threat	Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	KTP		**Unlikely**	**No** The proposal does not include any activities that would exacerbate this threat

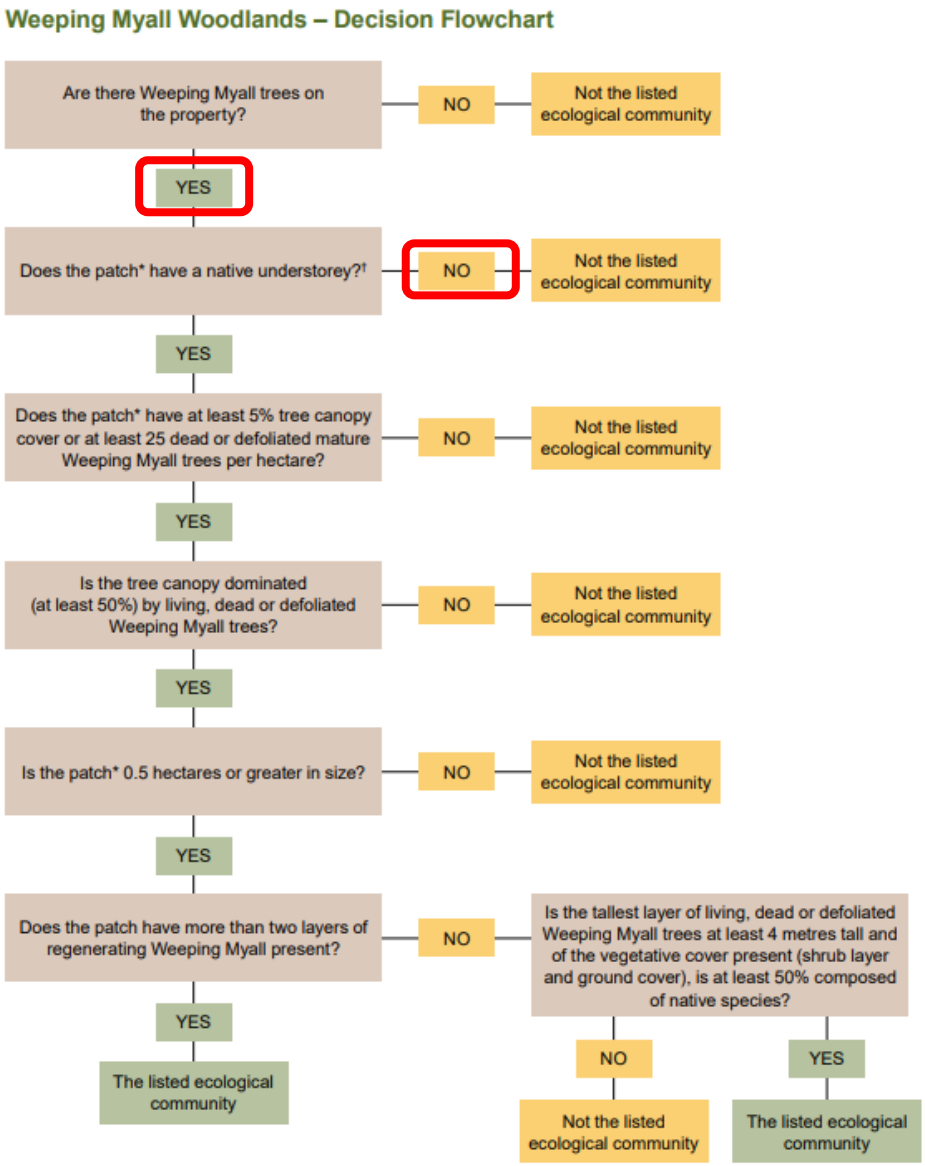
Threat	Habitat degradation and loss by Feral Horses (brumbies, wild horses), *Equus caballus* Linnaeus 1758	KTP		**Unlikely**	**No** The proposal does not include any activities that would exacerbate this threat
Threat	Herbivory and environmental degradation caused by feral deer	KTP		**Unlikely**	**No** The proposed development will not increase occupancy by this species.
Threat	High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	KTP		**Unlikely**	**No** Fire frequency will not increase due to activities undertaken as part of the proposal.
Threat	Importation of Red Fire Ants *Solenopsis invicta*	KTP	KTP	**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Threat	Infection by *Psittacine Circoviral* (beak and feather) Disease affecting endangered psittacine species and populations	KTP	KTP	**Likely**	**Potentially** Up to three hollow-bearing trees would be removed by the proposal. Removal of these trees could exacerbate this KTP. Exacerbation of this KTP could be avoided by retaining these hollow-bearing trees.
Threat	Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	KTP	KTP	**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Threat	Infection of native plants by *Phytophthora cinnamomi*	KTP	KTP	**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Threat	Introduction of the Large Earth Bumblebee *Bombus terrestris*	KTP		**Unlikely**	**No** This species only occurs in Tasmania. It is highly unlikely that the proposal will result in the importation of this species to the mainland.
Threat	Invasion and establishment of exotic vines and scramblers	KTP		**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Threat	Invasion and establishment of Scotch Broom (*Cytisus scoparius*)	KTP		**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Threat	Invasion and establishment of the Cane Toad (*Bufo marinus*)	KTP	KTP	**Unlikely**	**No**

					In the unlikely event that Cane Toads were transported to the site by construction machinery, the climate would likely be too cool to permit establishment.
Threat	Invasion, establishment and spread of Lantana (*Lantana camara*)	KTP		**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Threat	Invasion of native plant communities by African Olive *Olea europaea* subsp. *cuspidata*	KTP		**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Threat	Invasion of native plant communities by *Chrysanthemoides monilifera*	KTP		**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Threat	Invasion of native plant communities by exotic perennial grasses	KTP		**Likely**	**Yes** Exotic perennial grasses already occur at the subject site and will likely spread further. Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Threat	Invasion of the Yellow Crazy Ant, *Anoplolepis gracilipes* (Fr. Smith) into NSW	KTP		**Unlikely**	**No** In the unlikely event that the Yellow Crazy Ant was transported to the site by construction machinery, the climate would likely be too cool to permit establishment.
Threat	Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	KTP	KTP	**Unlikely**	**Potentially** Machinery used on site can potentially act as a transport for biosecurity risks. Implementation of the mitigation measures in **Section 7** should reduce this risk.
Threat	Loss of Hollow-bearing Trees	KTP		**Very Likely**	**Yes** Up to three hollow-bearing trees would be removed by the proposal. Exacerbation of this KTP could be avoided by retaining these hollow-bearing trees.
Threat	Loss or degradation (or both) of sites used for hill-topping by butterflies	KTP		**Unlikely**	**No** No sites known or suspected to be present.
Threat	Predation and hybridisation by Feral Dogs, *Canis lupus familiaris*	KTP		**Unlikely**	**No** The proposed works will not increase the likelihood of this threat.
Threat	Predation by *Gambusia holbrooki* Girard, 1859 (Plague Minnow or Mosquito Fish)	KTP		**Unlikely**	**No**

					The proposal does not include any activities that would exacerbate this threat
Threat	Predation by the European Red Fox (*Vulpes vulpes)*	KTP	KTP	**Unlikely**	**No** Ease of access for feral foxes will not be increased by the proposal
Threat	Predation by the Feral Cat *Felis catus* (Linnaeus, 1758)	KTP	KTP	**Unlikely**	**No** Ease of access for feral cats will not be increased by the proposal
Threat	Predation, habitat degradation, competition, and disease transmission by Feral Pigs	KTP	KTP	**Unlikely**	**No** Ease of access for feral pigs will not be increased by the proposal
Threat	Removal of dead wood and dead trees	KTP		**Unlikely**	**Potentially** No dead wood and trees were encountered directly in the alignment proposal footprint. If any dead wood is detected during works, it should be relocated nearby.

APPENDIX H – TEC DETERMINATION

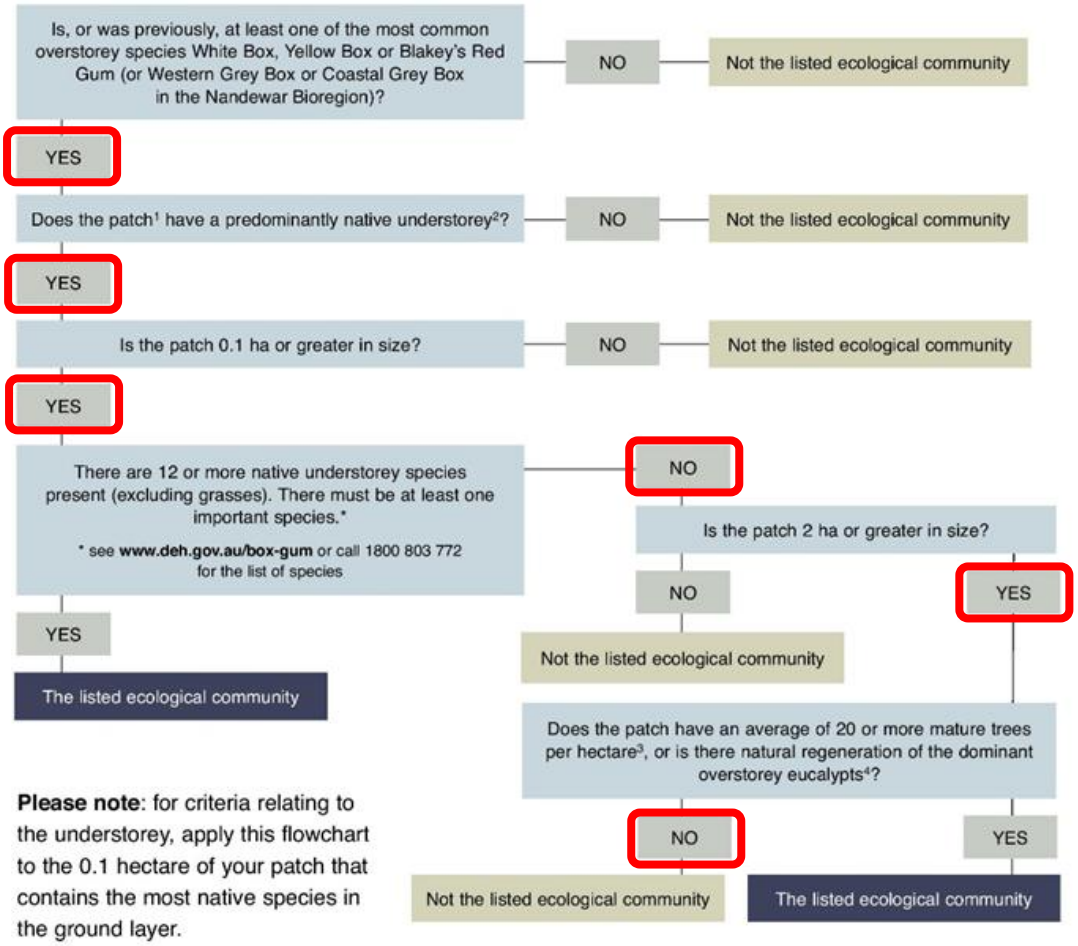
Determination criteria for the EPBC Act-listed EEC: *Weeping Myall Woodlands* – PCT 26



Determination criteria for EPBC Act-listed CEEC: *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* – PCT 74

The flowchart below represents the lowest condition at which patches are included in the listed ecological community. This is not the ideal state of the ecological community. Large patches, those that link remnants in the landscape, those that occur in highly cleared areas, those that contain rare, declining or threatened species, and those that represent the entire range of the ecological community, are important for the long-term future of the ecological community.

Determining if your land has an area of the listed ecological community



Please note: for criteria relating to the understorey, apply this flowchart to the 0.1 hectare of your patch that contains the most native species in the ground layer.

[1] Patch – a patch is a continuous area containing the ecological community (areas of other ecological communities such as woodlands dominated by other species are not included in a patch). In determining patch size it is important to know what is, and is not, included within any individual patch. The patch is the larger of:
- an area that contains five or more trees in which no tree is greater than 75 m from another tree, or
- the area over which the understorey is predominantly native.

Patches must be assessed at a scale of 0.1 ha (1000m²) or greater.

[2] A predominantly native ground layer is one where at least 50 per cent of the perennial vegetation cover in the ground layer is made up of native species. The best time of the year to determine this is late autumn when the annual species have died back and have not yet started to regrow. (At other times of the year, you can determine whether something is perennial or not is if it is difficult to pull out of the soil. Annual species pull out very easily.)

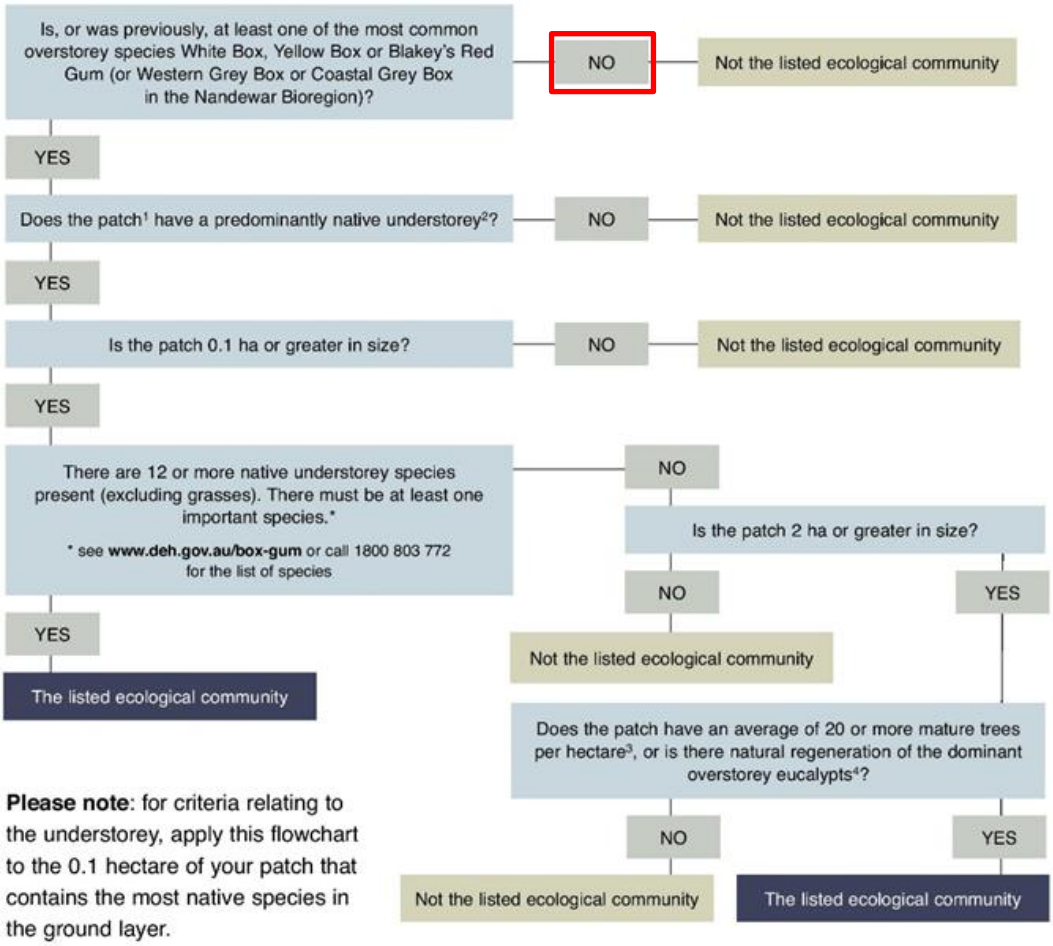
[3] Mature trees are trees with a circumference of at least 125 cm at 130 cm above the ground.

[4] Natural regeneration of the dominant overstorey eucalypts when there are mature trees plus regenerating trees of at least 15 cm circumference at 130 cm above the ground.

Determination criteria for EPBC Act-listed CEEC: *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* – PCT 267

The flowchart below represents the lowest condition at which patches are included in the listed ecological community. This is not the ideal state of the ecological community. Large patches, those that link remnants in the landscape, those that occur in highly cleared areas, those that contain rare, declining or threatened species, and those that represent the entire range of the ecological community, are important for the long-term future of the ecological community.

Determining if your land has an area of the listed ecological community



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- the area over which the understorey is predominantly native.

Patches must be assessed at a scale of 0.1 ha (1000m^2) or greater.

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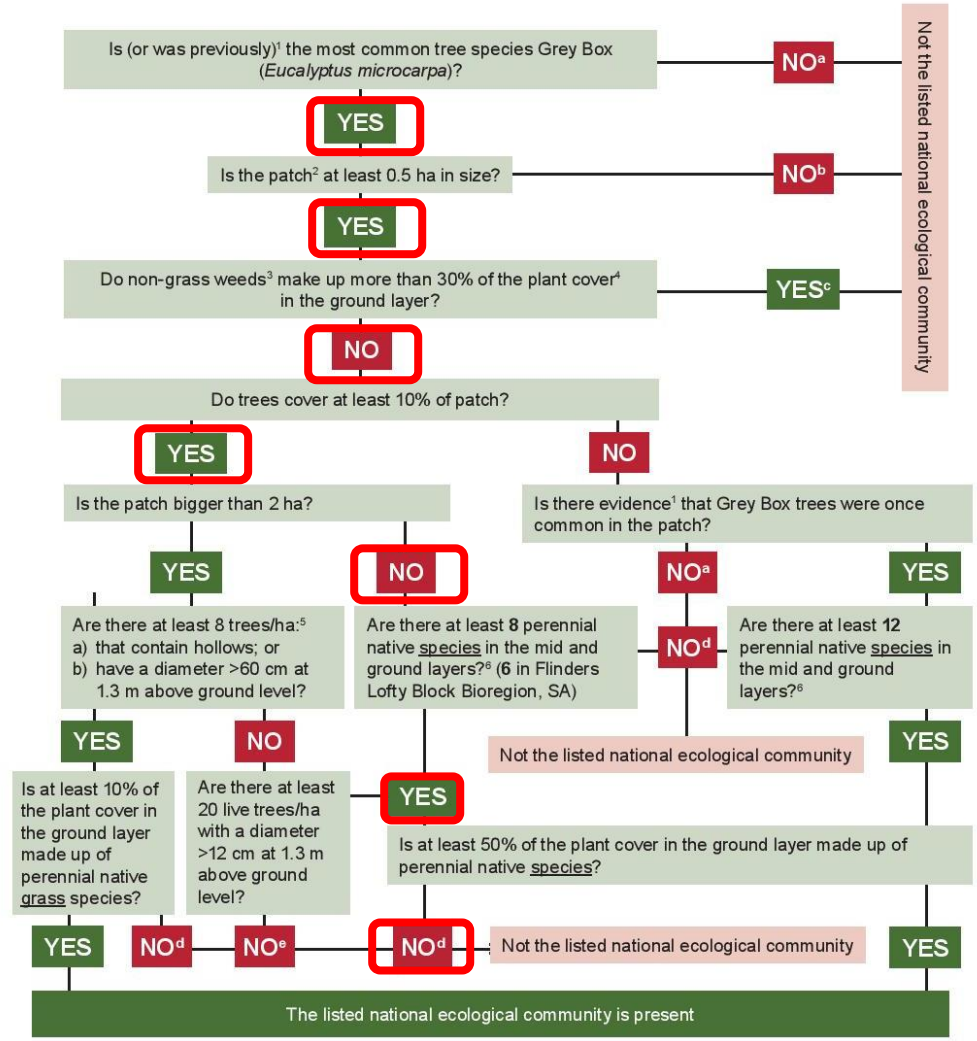
[3] Mature trees are trees with a circumference of at least 125 cm at 130 cm above the ground.

[4] Natural regeneration of the dominant overstorey eucalypts when there are mature trees plus regenerating trees of at least 15 cm circumference at 130 cm above the ground.

Determination criteria for EPBC Act-listed EEC: *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia.* – PCT 81

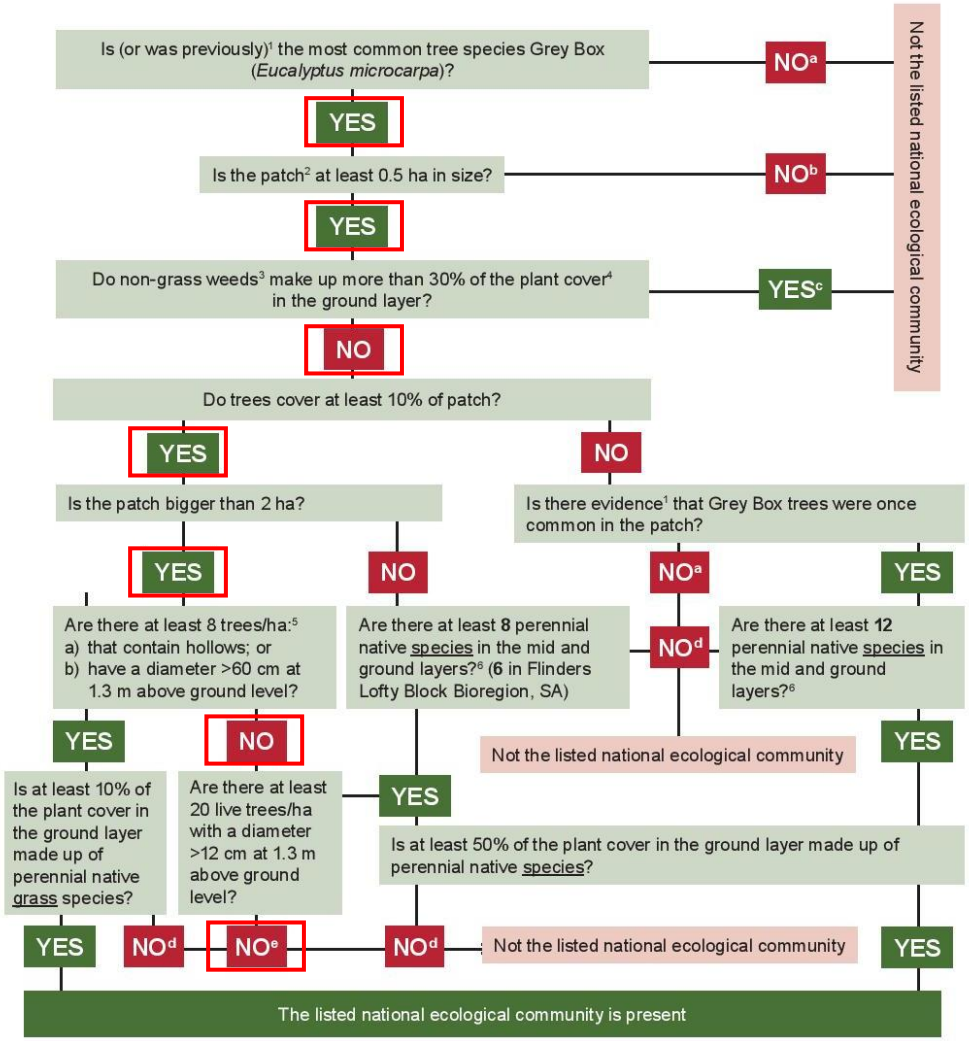


1 Evidence that Grey Box was originally present might include stumps, historical records or presence in nearby vegetation.
2 When considering a patch it is important to note that a patch may extend beyond a property or development site boundary. For the purposes of determining whether or not a patch meets the minimum patch size of the condition thresholds for the ecological community, the entire patch should be considered, not just the area occurring on a property or development site.
3 A weed is defined here as a plant species that is not native to Australia and the species has established viable self-sustaining populations in a region.
4 Plant cover excludes mosses and lichens. Patches of bare ground or leaf litter are also not included.
5 Dead trees are included if present, up to 50% of the total tree count.
6 Relevant growth-forms to include are: grasses, other graminoids, forbs and shrubs less than 4 metres tall. Shrubs that are 4 metres or more in height and non-vascular plants (mosses and lichens) are not included.

Why does my patch not belong to the listed national ecological community? **a** Patch belongs to a different ecological community; **b** Patch is too small; **c** Degraded: patch is too weedy **d** Degraded: too few native species or insufficient native species cover in ground layer; **e** Degraded: too few trees AND insufficient native species cover in ground layer. Rehabilitation work may be able to restore degraded patches enough to qualify as the listed community.

24 | Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-Eastern Australia

Determination criteria for the EPBC Act-listed EEC: *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia* – PCT 248



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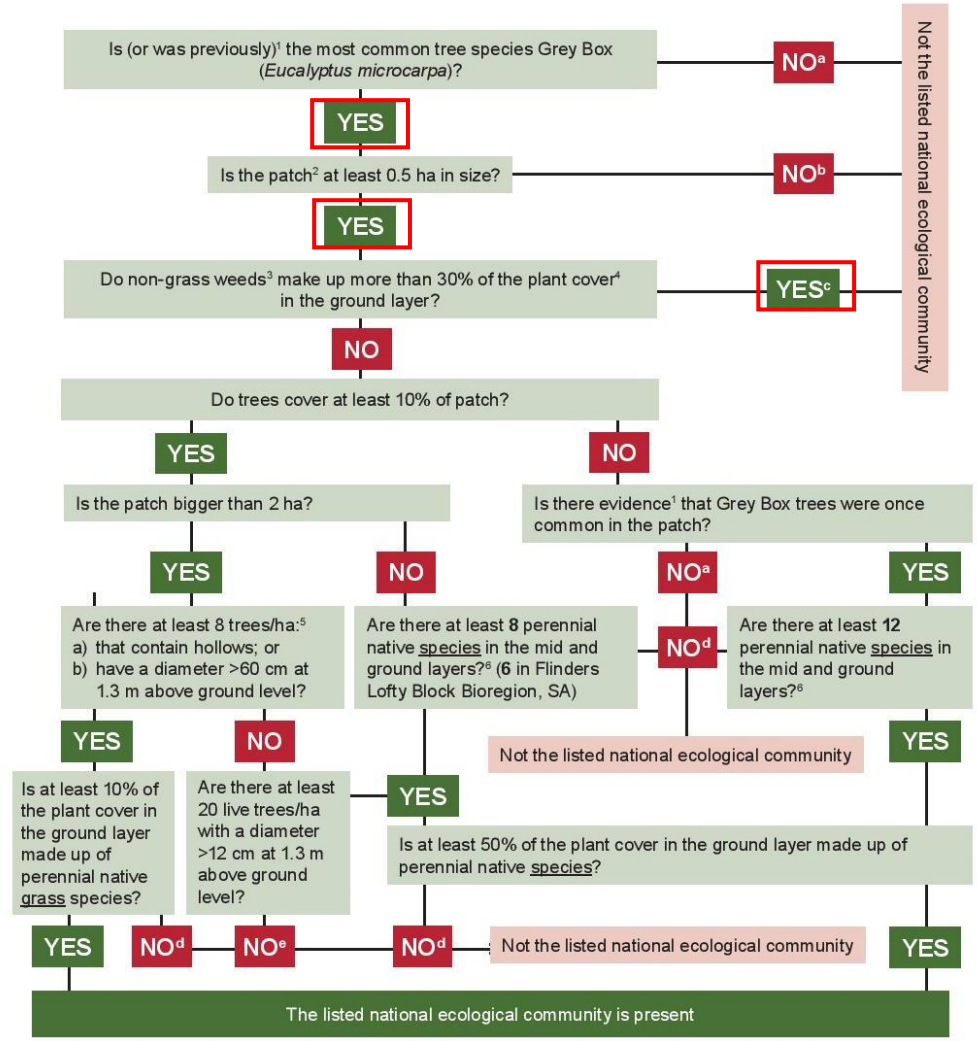
Determination criteria for EPBC Act-listed EEC: *Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia* – PCT 267



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24 | Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-Eastern Australia

Appendix C: Aboriginal Due Diligence Assessment (OzArk 2025b)

View north across the Macquarie River between proposed Structure 23 and 24.

ABORIGINAL DUE DILIGENCE ASSESSMENT REPORT

LINE 943/2 AND 9GG UPGRADE AND REALIGNMENT

FOREST GLEN SOLAR FARM – DUBBO SOUTH SUBSTATION

MARCH 2025

Report prepared by

OzArk Environment & Heritage

for Essential Energy

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DOCUMENT CONTROLS

Proponent	Essential Energy
Document Description	Aboriginal Due Diligence Assessment Report: Line 943/2 and 9GG Upgrade and Realignment
File Location	OzArk Job No.
Clients\Essential Energy\Forest Glen Solar Farm to Zoo ETL_November 2024\Heritage\DD Report	4719

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Prepared for	Prepared by
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Acknowledgement

OzArk acknowledge the traditional custodians of the area on which this assessment took place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the Elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by Essential Energy (EE; the proponent) to complete an Aboriginal due diligence heritage assessment for proposed upgrades and realignment of Line 943/2 and 9GG extending from Forest Glen Solar Farm to Dubbo South Substation (the proposal). The proposal is in the Dubbo Regional Council Local Government Area.

The study area consists of approximately 10 kilometres (km) of the existing Line 943/2 and 9GG easement which extends from the approved Forest Glen Solar Farm to Dubbo South Substation (Structures 82–44, 28–19), as well as approximately 3.7 km of new Electricity Transmission Line (ETL) alignment extending through land owned and managed by Taronga Western Plains Zoo (TWPZ) (Structures 43–29). The existing easement and new alignment are both 45 metres (m) wide. Structures 1–19 and Structures 82–100 are not included in the current assessment as the ground surface has been entirely disturbed or the land has undergone previous assessment.

A 17 x 4 km search of the Aboriginal Heritage Information Management System (AHIMS) centred on the study area returned 110 results for previously recorded Aboriginal sites within the search area. According to the AHIMS search, a total of six sites (AHIMS #36-1-0560, 36-1-0523, 36-1-0418, 36-1-0417, 36-1-0416 and 36-1-0412) are located within the study area. The sites consist of five artefact scatters and one culturally modified tree. These site types are typical of the wider region and were ground-truthed during the visual inspection of the study area to confirm their locations.

The visual inspection of the study area was undertaken by OzArk Archaeologist, Jordan Henshaw over a three-day period from 29 to 31 January 2025. Roger Ebsworth representing Dubbo Local Aboriginal Land Council attended the visual inspection on 29 January and Karryn Schaefer representing Tubba-gah Maing attended the visual inspection on 30 and 31 January.

One previously unrecorded Aboriginal site (Dundullimal Reserve Open Site 2 (DR-OS2)) was recorded during the visual inspection. The details of this site are presented in **Section 3**.

As ground disturbing works will be confined to the proposed structure footings (approximately 1.5 – 2m wide), access tracks (approximately 3 metres [m] wide) and drill pads at pole locations (where required to manage geotechnical or topographical restrictions) to a minimum 10m x 10m and with no more than a 5 degree slope, four of the five sites which were confirmed to be located within the study area will not be impacted. One site located at proposed structure location 35 (WPZ Serengeti OS1 (formerly WPZ-IF1)) will be impacted.

Table 3-3 presents a summary of potential impacts to Aboriginal cultural heritage associated with the proposal.

Although not impacted by the proposal, specific management measures have been outlined for two sites (WPZ-OS4 and WPZ-OS5) to ensure no inadvertent harm occurs whilst ground disturbing works occurs. These management measures are outlined in **Section 4**.

The undertaking of the due diligence process has resulted in the conclusion that harm will occur to Aboriginal objects and that an Aboriginal Heritage Impact Permit (AHIP) application must be made. Integral to an AHIP application is the preparation of an *Aboriginal Cultural Heritage Assessment Report* (ACHAR) and the requirement to follow the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs). The *National Parks and Wildlife Act 1974* is complemented by the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* that set out the requirements for archaeological investigation in NSW where an application for an AHIP is likely to be made.

To ensure the greatest possible protection to the area's Aboriginal cultural heritage values, the following recommendations are made:

1. The proposed work may not proceed at identified heritage locations within the study area (particularly Structure 35) without further archaeological investigation.
2. Any workers in the area should be provided with the locations of WPZ Serengeti OS1 (formerly WPZ IF1), WPZ-OS4, WPZ-OS5, DLGA-OS-02, and Dundullimal Reserve Open Site 2 (DR-OS2). No harm must happen to these sites while further archaeological investigations are undertaken.
3. No track maintenance may occur outside of the boundary shown on **Figure 4-1** unless further investigation is undertaken.
4. No land and ground disturbance activities may occur outside the assessed study area. Should the parameters of the proposal extend beyond the assessed study area, then further archaeological assessment may be required.
5. The information presented here meets the requirements of the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. It should be retained as shelf documentation for five years as it may be used to support a defence against prosecution in the event of unanticipated harm to Aboriginal objects.

CONTENTS

FIGURES

TABLES

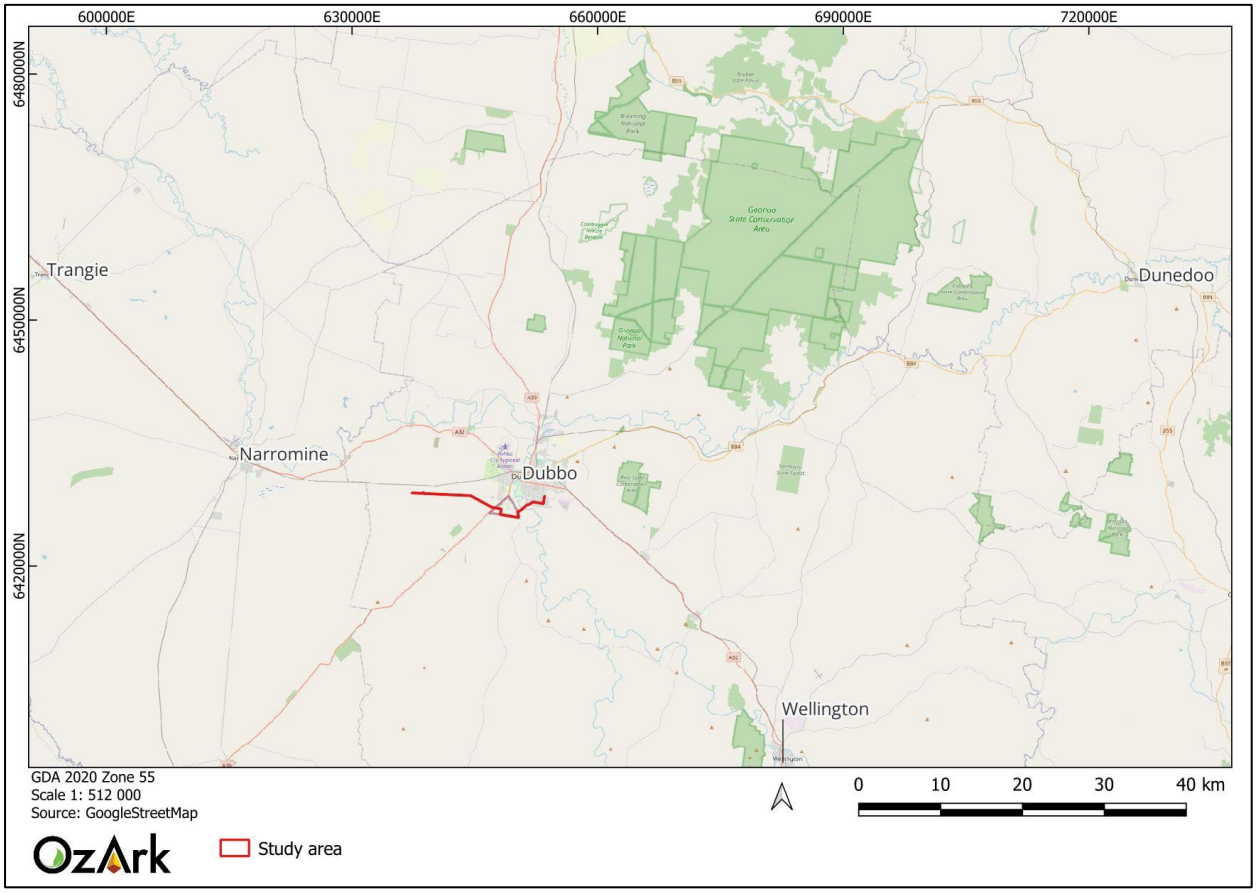
PLATES

1 INTRODUCTION

1.1 BRIEF DESCRIPTION OF THE PROPOSAL

OzArk Environment & Heritage (OzArk) has been engaged by Essential Energy (EE; the proponent) to complete an Aboriginal due diligence heritage assessment for proposed upgrades and realignment of Line 943/2 and 9GG extending from Forest Glen Solar Farm to Dubbo South Substation (the proposal). The proposal is in the Dubbo Regional Council Local Government Area (LGA) (**Figure 1-1**).

Figure 1-1. Map showing the location of the proposal.



1.2 BACKGROUND

Forest Glen Solar Farm is one of multiple renewable energy projects located within the Central West-Orana Renewable Energy Zone (REZ) and was approved in February 2023. A modification to increase the development footprint of the solar farm and associated access was approved in October 2024. The solar farm will have the capacity to produce 90 megawatts (MW) when completed and will include a Battery Energy Storage System (BESS) capable of storing 25MW.

The current proposal will connect Forest Glen Solar Farm and the energy it produces to the existing distribution network. A section of Line 943/2 will also be realigned so that the existing Taronga Western Plains Zoo (TWPZ) can continue to develop and expand south without interference from existing Electricity Transmission Line (ETL) infrastructure.

1.3 STUDY AREA

The study area consists of approximately 10 kilometres (km) of the existing Line 943/2 and 9GG easement which extends from the approved Forest Glen Solar Farm to Dubbo South Substation (Structures 82–44, 28–19), as well as approximately 3.7 km of new ETL alignment extending through land owned and managed by TWPZ (Structures 43–29). The existing easement and new alignment are both 45 metres (m) wide. Structures 1–19 and Structures 82–100 are not included in the current assessment as the ground surface has been entirely disturbed or the land has undergone previous assessment. The study area is shown on **Figure 1-2**.

1.4 ASSESSMENT APPROACH

The desktop and visual inspection component for the study area follows the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (due diligence; DECCW 2010). The field inspection followed the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (OEH 2011).

Figure 1-2: Aerial showing the eastern portion of the study area.

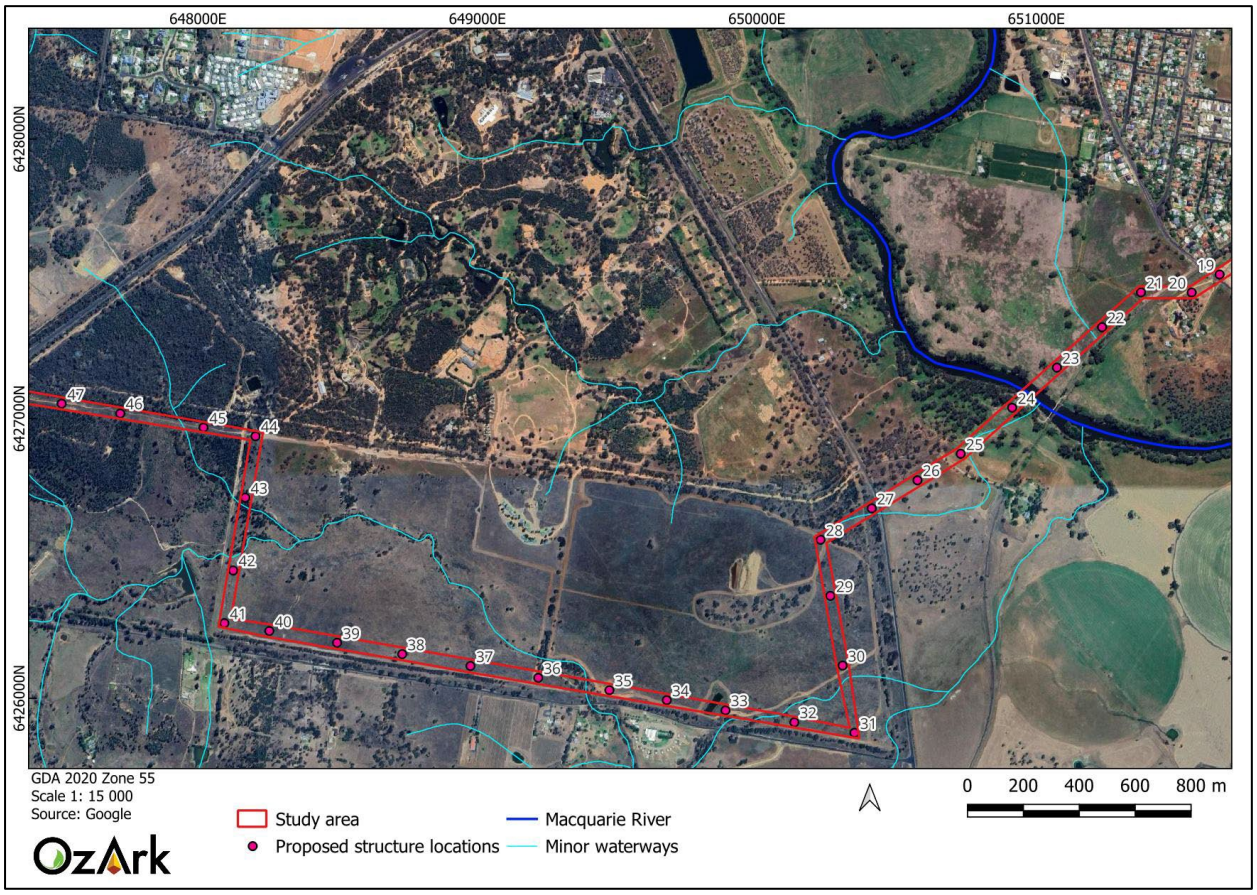
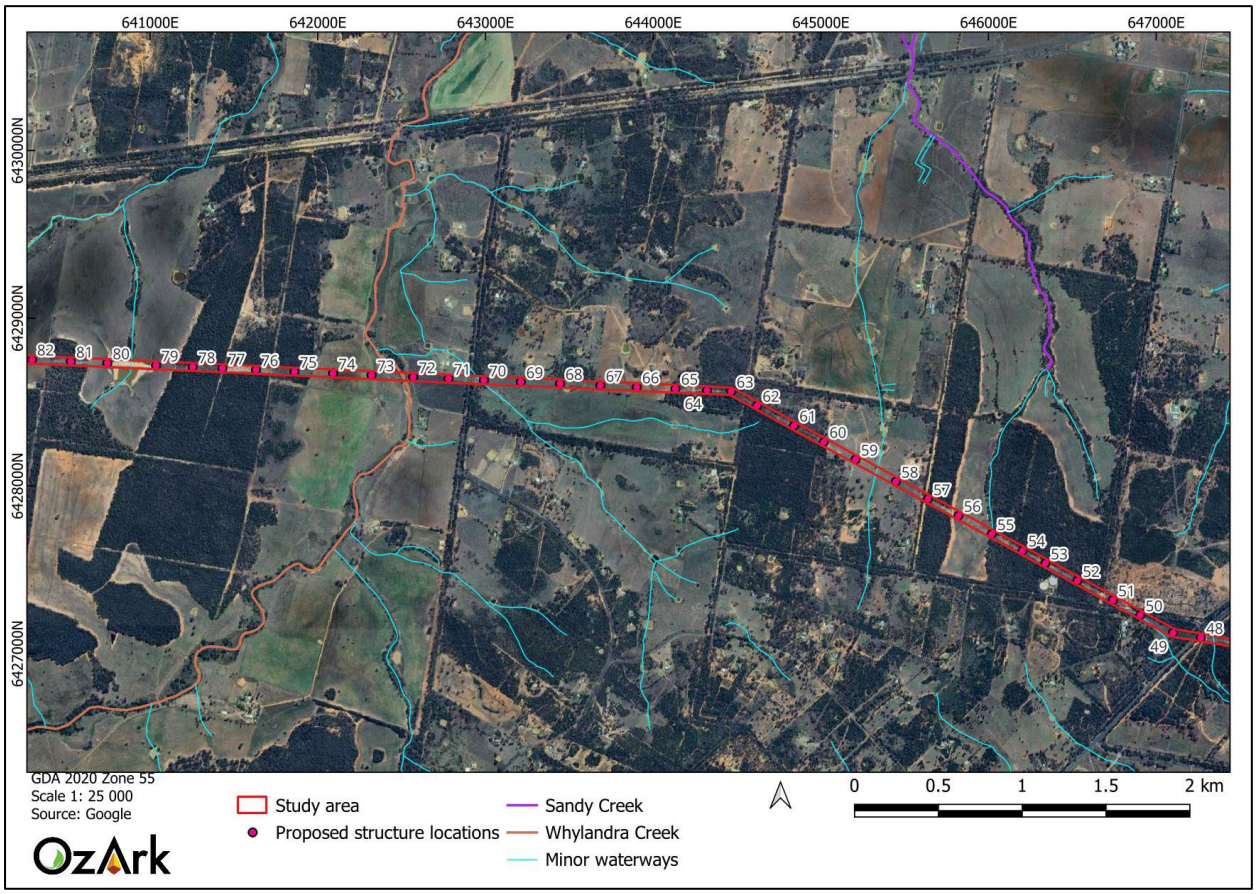


Figure 1-3: Aerial showing the western portion of the study area.



2 ABORIGINAL DUE DILIGENCE ASSESSMENT

2.1 INTRODUCTION

Section 57 of the National Parks and Wildlife Regulation 2019 (NPW Regulation) made under the *National Parks and Wildlife Act 1974* (NPW Act) advocates a due diligence process to determining likely impacts on Aboriginal objects. Carrying out due diligence provides a defence to the offence of harming Aboriginal objects and is an important step in satisfying Aboriginal heritage obligations in NSW.

2.2 DEFENCES UNDER THE NPW REGULATION

2.2.1 Low impact activities

The first step before application of the due diligence process itself is to determine whether the proposed activity is a "low impact activity" for which there is a defence in the NPW Regulation. The exemptions are listed in Section 58 of the NPW Regulation (DECCW 2010: 6).

The activities of EE are not considered 'low impact' (maintenance to existing utilities such as above or below ground electrical infrastructure) as existing wooden structures will be decommissioned and replaced with new steel structures. The 3.7 km section of new ETL alignment also falls outside the 'low impact activities' listed within the Due Diligence Code of Practice (the Code). Therefore, the due diligence process must be applied.

2.2.2 Disturbed lands

Relevant to this process is the assessed levels of previous land-use disturbance.

The NPW Regulation Section 58 (DECCW 2010: 18) define disturbed land as follows:

> *Land is disturbed if it has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable.*
>
> *Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) and construction of earthworks.*

As sections of the proposed work are in previously cleared landforms which contain established ETL infrastructure as well as agricultural disturbances including grazing and ploughing, it could be considered that the proposed work is occurring in 'disturbed land.'

However, apart from these disturbances, sections of the proposed work are not in areas where the land's surface has been changed in a clear and observable manner and the due diligence process must be applied.

In summary, it is determined that the proposal must be assessed under the Due Diligence Code of Practice. The reasoning for this determination is set out in **Table 2-1**.

Table 2-1: Determination of whether Due Diligence Code of Practice applies.

Item	Reasoning	Answer
Is the activity to be assessed under Division 4.7 (state significant development) or Division 5.2 (state significant infrastructure) of the EP&A Act?	The proposal will be assessed under Part 5 of the EP&A Act.	No
Is the activity exempt from the NPW Act or NPW Regulation?	The proposal is not exempt under this Act or Regulation.	No
Do either or both apply: Is the activity in an Aboriginal place? Have previous investigations that meet the requirements of this Code identified Aboriginal objects?	The activity will not occur in an Aboriginal place. No previous investigations have been undertaken for this proposal.	No
Is the activity a low impact one for which there is a defence in the NPW Regulation?	The proposal is not a low impact activity for which there is a defence in the NPW Regulation.	No
Is the activity occurring entirely within areas that are assessed as 'disturbed lands?'	The proposal is not entirely within areas of high modification.	No
Due Diligence Code of Practice assessment is required		

2.3 APPLICATION OF THE DUE DILIGENCE CODE OF PRACTICE TO THE PROPOSAL

To follow the generic due diligence process, a series of steps in a question/answer flowchart format (DECCW 2010: 10) are applied to the proposed impacts and the study area, and the responses documented.

2.3.1 Step 1

Will the activity disturb the ground surface or any culturally modified trees?

Yes, the proposal will impact the ground surface and may impact culturally modified trees.

EE are proposing to replace existing ETL structures from the approved Forest Glen Solar Farm to the Dubbo South Substation and realign approximately 3.7 km of the existing easement to avoid future developments with TWPZ managed land. The replacement of existing ETL structures as well as construction of new ETL structures will involve earthworks in order to create stable foundations which will disturb the ground surface.

Vegetation clearance required for the new 3.7 km section of ETL alignment may impact mature native species and therefore could impact culturally modified trees.

2.3.2 Step 2a

Are there any relevant confirmed site records or other associated landscape feature information on AHIMS?

Yes, there are five previously recorded sites within the study area.

A 17 x 4 km search of the Aboriginal Heritage Information Management System (AHIMS) centred on the study area returned 110 results for previously recorded Aboriginal sites within the search area (**Appendix 1**).

According to the AHIMS search, a total of six sites (AHIMS #36-1-0560, 36-1-0523, 36-1-0418, 36-1-0417, 36-1-0416, and 36-1-0412) are located within the study area. The sites consist of five artefact scatters and one culturally modified tree. These site types are typical of the wider region and will be ground-truthed during the visual inspection of the study area to confirm their locations.

The most common site type located by the AHIMS search was culturally modified trees (n=41, 37%), followed by artefact scatters (n=37, 34%), and isolated finds (n=19 17.3%). These three site types make up approximately 88% of all 110 sites located by the search. A single grinding groove and ceremonial site have also been recorded within the search area.

Isolated finds have previously been recorded in a wide variety of contexts, including highly disturbed landforms and, therefore, there is a likelihood that isolated finds are present within the study area.

Artefact scatters follow a pattern of association with waterways more closely than isolated finds, as major waterways are often more favourable locations for sustained Aboriginal occupation. Artefact scatters have largely been recorded in proximity to the Macquarie (Wambuul) River and its tributaries. Due to the proximity of the study area to the Macquarie River as well as several tributary creeks and waterways, there is an increased likelihood that additional examples of this site type will be recorded within the study area.

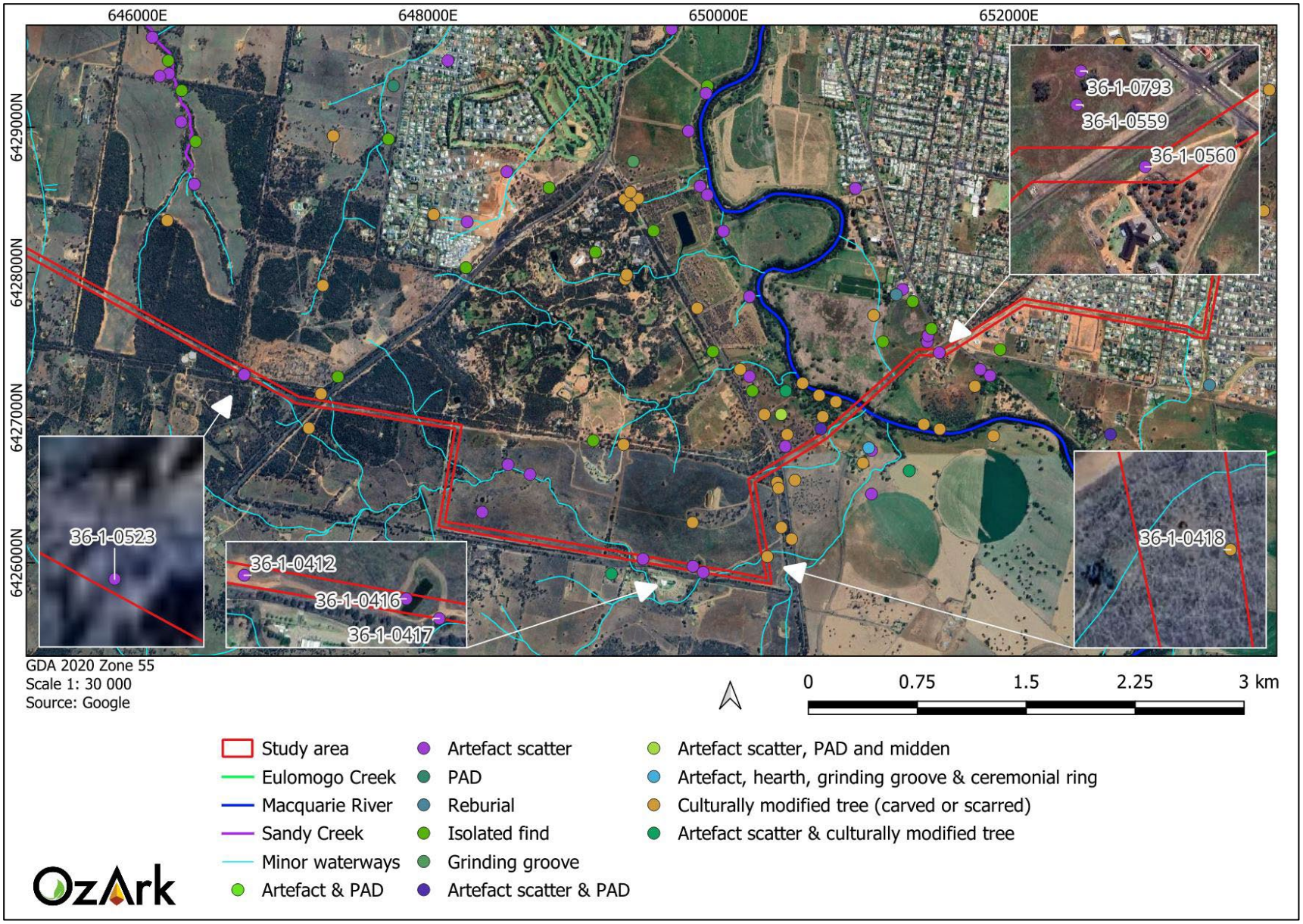
Culturally modified trees can be recorded anywhere mature native vegetation remains. However, due to the extensive vegetation clearance which has occurred throughout the existing ETL easement and proposed alignment, few of these trees remain. Remnant mature vegetation is generally associated with waterways such as the Macquarie River or road corridors, however, this is often because vegetation clearing has not occurred as completely in these areas allowing for a greater number of mature trees to survive.

Figure 2-1 shows all previously recorded sites in relation to the study area and **Table 2-2** shows the types of sites that are close to the study area.

Table 2-2: Site types and frequencies of AHIMS sites near the study area.

Site Type	Number	% Frequency
Culturally modified tree (carved or scarred)	41	37.00
Artefact scatter	37	34.00
Isolated find	19	17.30
Artefact scatter & culturally modified tree	3	2.70
Artefact scatter & PAD	2	1.80
PAD	2	1.80
Reburial	2	1.80
Artefact & PAD	1	0.90
Artefact scatter, PAD & midden	1	0.90
Grinding groove	1	0.90
Artefact, hearth, grinding groove and ceremonial ring	1	0.90
Total	**110**	**100**

Figure 2-1: Previously recorded AHIMS sites in relation to the study area.



2.3.3 Step 2b

Are there any other sources of information of which a person is already aware?

No, there are no other sources of information that would indicate the presence of Aboriginal objects in the study area.

2.3.3.1 Ethnohistoric context

The proposal is in the northern region of Wiradjuri land (Horton 1996). The Wiradjuri people were first encountered by colonial explorers such as Oxley and Cummingham in the early 1800s (Whitehead 2003). They found that Wiradjuri groups, such as the 'Bultje tribe' comprised of up to 120 individuals and hunted emus, kangaroos, and possums for food. Fishing was also utilised to sustain the population with both mussels and freshwater fish being caught by the women of the tribe who used moveable dams made of grass to direct fish, making them easier to catch (Kass 2003: 6).

2.3.3.2 Regional archaeological context

The archaeological investigations summarised below provide baseline data for placing past Aboriginal sites within the regional landscape context.

Pearson 1981

Pearson mainly worked in the Upper Macquarie region making his findings relevant to the study area. Through Aboriginal site analysis, Pearson was able to produce a predictive site model which could be extrapolated upon to determine the location of future occupation and non-occupation sites.

Occupation sites were found to occur where good drainage, level ground and access to water were present. They were more likely to be located on landforms such as creek banks, low ridge tops and river flats in open woodland vegetation. However, non-occupation site locations were found to be more inconsistent and was more heavily related to the individual function of that site. Scarred trees appeared to contain no obvious patterning and grinding grooves only occurred where adequate rocky outcropping was also present. Pearson also considered that these trends could differ where dependence on larger and more permanent waterways was greater.

Koettig 1985

Koettig focussed more heavily on Aboriginal occupation around the town of Dubbo. She concluded that artefact scatters, culturally modified trees and grinding grooves were the most frequently recorded site type in the region.

The location and size of a particular site was determined to be dependent on both social and environmental factors including proximity to water, availability of food and geological formations.

Koettig's predictive model concluded that all site types were more likely to be recorded along waterways except scarred trees and 'small' campsites, which did not occur in a predictable manner.

2.3.3.3 Local archaeological context

OzArk 2002

OzArk (2002) completed a survey of 976 ha of land for the TWPZ. The 2002 study area was divided into four survey areas referred to as the 'Proposed African Safari' (Survey Area 1), 'The Sanctuary' (Survey Area 2), 'Western Plains Zoo proper' (Survey Area 3), and 'The River Lands' (Survey Area 4). Only the first three survey areas were physically inspected, while the river lands of Survey Area 4 were subject to a literature review only. The current study area extends through sections of Survey Areas 1, 2, and 4 (**Figure 2-2**).

The report found that all survey areas had undergone considerable modification since the advent of British settlement and virtually no areas could be considered completely 'undisturbed.'

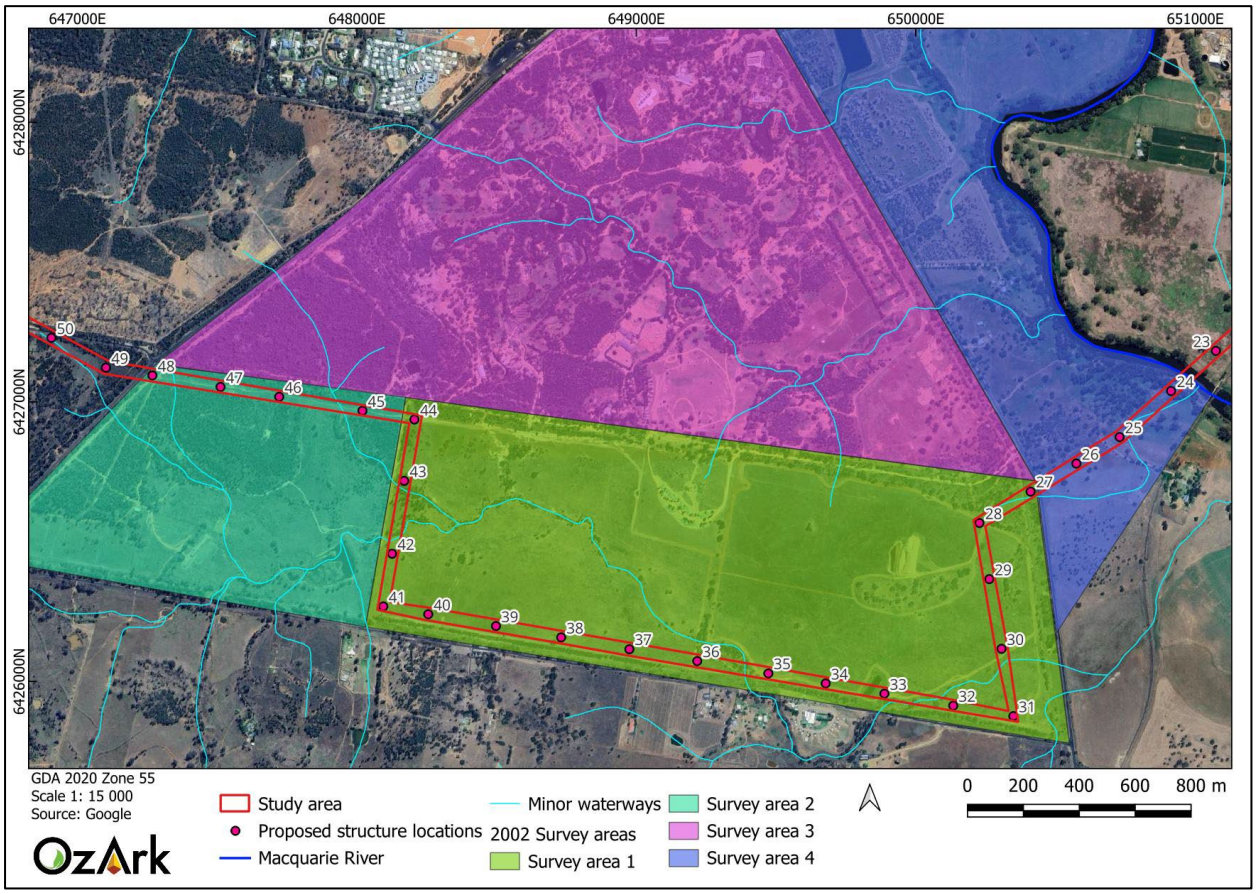
Twelve Aboriginal sites were located during the survey of Survey Areas 1, 2, and 3. When added to the suite of previously recorded Aboriginal sites within the zoo, there are fourteen artefact scatters, fifteen culturally modified trees, two isolated finds, one midden, and one site complex including grinding grooves, artefacts and other cultural evidence (now removed burials and carved trees). It was concluded that these sites comprise a cultural landscape which provides considerable physical evidence for the range of activities carried out by the Aboriginal inhabitants of these lands.

Artefact scatters were predominantly found to occur along creek banks or within 200 m of the Macquarie River. Culturally modified trees were also found to occur close to waterways, but some were identified up to 500 m from creeks and rivers.

The burial site recorded in 1918, is located on the gentle slope leading away from the alluvial flats of the Macquarie River (east of Obley Road) and is associated with grinding grooves seen on the outcropping sandstone. Appropriate outcropping rock was not identified in the current study area. It was noted, however, that the creek lines in Survey Area 3, being the zoo proper, were heavily disturbed and evidence of grinding grooves was considered unlikely.

Since 2002, OzArk have completed numerous small-scale assessments on behalf of TWPZ. Most were within the TWPZ proper, being Survey Area 3 of the 2002 assessment.

Figure 2-2: OzArk (2002) survey areas in relation to the study area.



OzArk 2006

An assessment of Aboriginal heritage resources within the then Dubbo Local Government Area (LGA) to assist Dubbo City Council (now Dubbo Regional Council) with planning was undertaken by OzArk (2006). This study aimed to consolidate previous surveys and assessments of Aboriginal heritage; set a baseline for further study; and survey areas zoned for future expansion. Approximately 1,120 ha of land was surveyed within five study areas surrounding the city of Dubbo. During the survey, 26 new Aboriginal sites were recorded, and eight out of 12 previously recorded sites were relocated. A number of the newly recorded site types were similar to those found in previous studies.

Fewer scarred trees were recorded than expected, likely due to intensive agricultural practices and associated tree clearance around Dubbo city compared to the broader Dubbo LGA. No new grinding groove sites were recorded, which was understandable given that this site type comprised only 3.6% of previously located sites within the Dubbo LGA.

Scarred tree distribution adhered to the predictive model, exclusively following waterways and fence-lines, although this probably reflected land clearing practices more than Aboriginal site patterning.

Isolated finds and open sites followed a similar pattern, largely limited to watercourse edges, and elevated terraces within 500 m of the Macquarie (Wambuul) River and other permanent to semi-permanent waterways. No significant patterning emerged in terms of site size or quality, perhaps because surface manifestations often do not adequately reflect site size or complexity.

OzArk 2014

The report is the result of the Dubbo LGA Aboriginal cultural heritage study (OzArk 2006) and utilised GIS mapping, community consultation, and other archaeological resources to gain a more comprehensive understanding of the Aboriginal heritage of the Dubbo area. A total area of 207 square kilometres was considered as part of the project.

A total of 679 Aboriginal sites were part of the study. Sites within the study area included artefact scatters, hearths, areas of potential archaeological deposit (PAD), and open camp sites, which comprised 57% of all sites in the Dubbo LGA. Culturally modified trees comprised 39% of recorded sites throughout the LGA.

OzArk 2014 concluded that almost all sites are located within 500 m of waterways, however, areas within 200 m are likely to contain more sites.

NGH 2021

In 2021, NGH Consulting Pty Ltd (NGH) undertook an Aboriginal Cultural Heritage Assessment (ACHAR) for the proposed Forest Glen Solar Farm which will connect into the upgraded Line 943/2 and 9GG. The assessment comprised a three-day archaeological survey. The survey located no new Aboriginal objects or sites, potentially a result of the extensive historic farming across the area and limitations provided by the lack of visibility in some areas. However, taking into consideration the substantial site modification that has occurred to the natural landscape, the presence of in-situ surface archaeology is low to nil.

No areas of potential archaeological deposit (PAD) were identified during the survey. Based on the land use history, an appraisal of the landscape, soil, level of disturbance and observations from the field survey, it was concluded that there was negligible potential for the presence of intact subsurface deposits with high densities of cultural material within the Forest Glen Solar Farm project area.

OzArk 2024

In 2024, OzArk conducted a due diligence assessment which led to an ACHAR for the proposed TWPZ Serengeti Precinct development which will eventually encompass areas between proposed Structure 44 and 28 of the new Line 943/2 alignment. It was confirmed during the survey that one Aboriginal site, AHIMS ID# 36-1-0412, initially recorded as an isolated find in 2002, is in fact an artefact scatter. A total of 13 stone artefacts manufactured from quartz, quartzite, chert, and silcrete were recorded.

The site, now referred to as WPZ Serengeti OS1, was recorded 60 m east of an ephemeral waterway and intersects with the southern portion of the study area at the location proposed for Structure 35 along the proposed Line 943/2 alignment.

Due to the impacts presented by the TWPZ Serengeti Precinct development, an AHIP was granted to impact a portion of the site. However, this AHIP does not include the entire site extent and excludes the area where impacts are proposed for the construction of Structure 35 along the proposed Line 943/2 alignment.

2.3.4 Step 2c

Are there any landscape features that are likely to indicate presence of Aboriginal objects?

Yes, portions of the study area contain landforms with identified archaeological sensitivity.

The Code refers to several landscape features which have higher potential to contain Aboriginal objects. These include:

- Landforms located within 200 m of waters
- Located within a sand dune system
- Located on a ridge top, ridge line or headland
- Located within 200 m below or above a cliff face
- Within 20 m of or in a cave, rock shelter, or a cave mouth

on land that is not disturbed land.

The study area is intersected by the Macquarie River and Whylandra Creek on land that has not been entirely disturbed. As such, the study area contains landforms located within 200 m of waters on land that is not disturbed as set out in the Code. No other archaeologically sensitive landforms are present.

The study area is largely situated within the Goonoo Slopes landscape unit (Mitchell 2002). This landscape is generally characterised by undulating hills and sandstone, shale, and coal deposits. The study area is situated on gently sloping hills. Soils can consist of harsh yellow texture-contrast soils and stony yellow earths within sandstone outcrops. Vegetation can include a wide range of Eucalyptus species including broad-leaved ironbark, green mallee, and red stringybark trees.

A portion of the study area (Structures 32–30 and Structures 26–19) is within the Macquarie Alluvial Plains. These areas are typically characterised by dark yellow-brown silty clay with patches of sand and carbonate nodules deposited from suspended sediments in floodwater, often with gilgai. Open grasslands with scattered coolibah, black box, river cooba, bimble box, belah, lignum, and myall are also common.

2.3.5 Step 3

Can harm to Aboriginal objects or disturbance of archaeologically sensitive landscape features be avoided?

Known Aboriginal objects will be harmed by the proposal, and landforms with identified archaeological sensitivity will be subject to ground disturbance.

2.3.6 Step 4

Does a desktop assessment and visual inspection confirm that there are Aboriginal objects or that they are likely?

Yes, there are Aboriginal objects within the study area which will be harmed by the proposal.

The visual inspection of the study area was undertaken by OzArk Archaeologist, Jordan Henshaw over a three-day period from 29 to 31 January 2025. Roger Ebsworth representing Dubbo Local Aboriginal Land Council attended the visual inspection on 29 January and Karryn Schaefer representing Tubba-gah Maing attended the visual inspection on 30 and 31 January.

The study area was confirmed to include multiple landform types due to its length and variety of land uses, including flats, gentle to moderate slopes, ridgelines, and floodplains (**Plate 1** and **Plate 2**). Large portions of the study area had low ground surface exposure (GSE) and ground surface visibility (GSV) due to thick grasses and shrubs which had not been cleared along the existing ETL easement for multiple years (**Plate 3**). However, relatively small areas of exposure on slopes, existing unsealed access tracks and in areas of previous ground disturbance are present, allowing for up to 100% of the ground surface to be observed in these areas (**Plate 4**).

Plate 1: View west across flat landform within the proposed ETL alignment.

Plate 2: View west along gentle slope within existing ETL easement.

Plate 3: View west across section of dense shrubbery and decreased GSE.

Plate 4: View east across a section of increased GSV.

Previous ground disturbances include earthworks associated with the initial construction of Line 943/2 and 9GG, as well as access track maintenance, property fences, underground telecommunication infrastructure, dam construction, and agricultural grazing and ploughing activities (**Plate** 5 and **Plate 6**).

Plate 5: View of subsurface telecommunication infrastructure and property fence line within the study area.

Plate 6: View of imported material dump.

One Aboriginal site (Dundullimal Reserve Open Site 2 (DR-OS2)) was recorded during the visual inspection. The details of this site are presented in **Section 3**. No areas of PAD were identified due to the general sloping nature of landforms present and previous ground disturbances mentioned above. Survey coverage of the study area is presented on **Figure 2-3** and **Figure 2-4**.

Table 3-2 outlines the previously recorded sites which were ground-truthed during the visual inspection of the study area and **Figure 2-5** shows the corrected locations of site WPZ-ST1 and CR-OS-1.

Table 2-3: Visual inspection results of previously recorded sites within the study area.

Site Name	AHIMS Site ID#	Coordinates (GDA 2020 Zone 55)	Results of visual inspection	Photo
DLGA-OS-02	36-1-0560	651521E 6427449N	No artefacts could be located during the visual inspection; however, the site remains valid. The site will **not** be impacted by the proposal.	
WPZ-ST1	36-1-0418	650286E 6426034N	The site was confirmed to be located outside of the study area and will **not** be impacted by the proposal (**Figure 2-5**).	

WPZ-OS5	36-1-0417	649895E 6425935N	No artefacts could be located during the visual inspection; however, the site remains valid. Specific management recommendations regarding the site are outlined in **Section 4**.	
WPZ-OS4	36-1-0416	649825E 6425977N	No artefacts could be located during the visual inspection; however, the site remains valid. Specific management recommendations regarding the site are outlined in **Section 4**.	

WPZ Serengeti OS1 (formerly WPZ IF1)	36-1-0412	649481E 6426027N	Six artefacts were located during the visual inspection. The site **will** be impacted by the proposal (**Section 5**).	
CR-OS-1	36-1-0523	646734E 6427295N	The site was confirmed to be located outside of the study area and will **not** be impacted by the proposal (**Figure 2-5**).	

Figure 2-3: Survey coverage within the eastern portion of the study area.

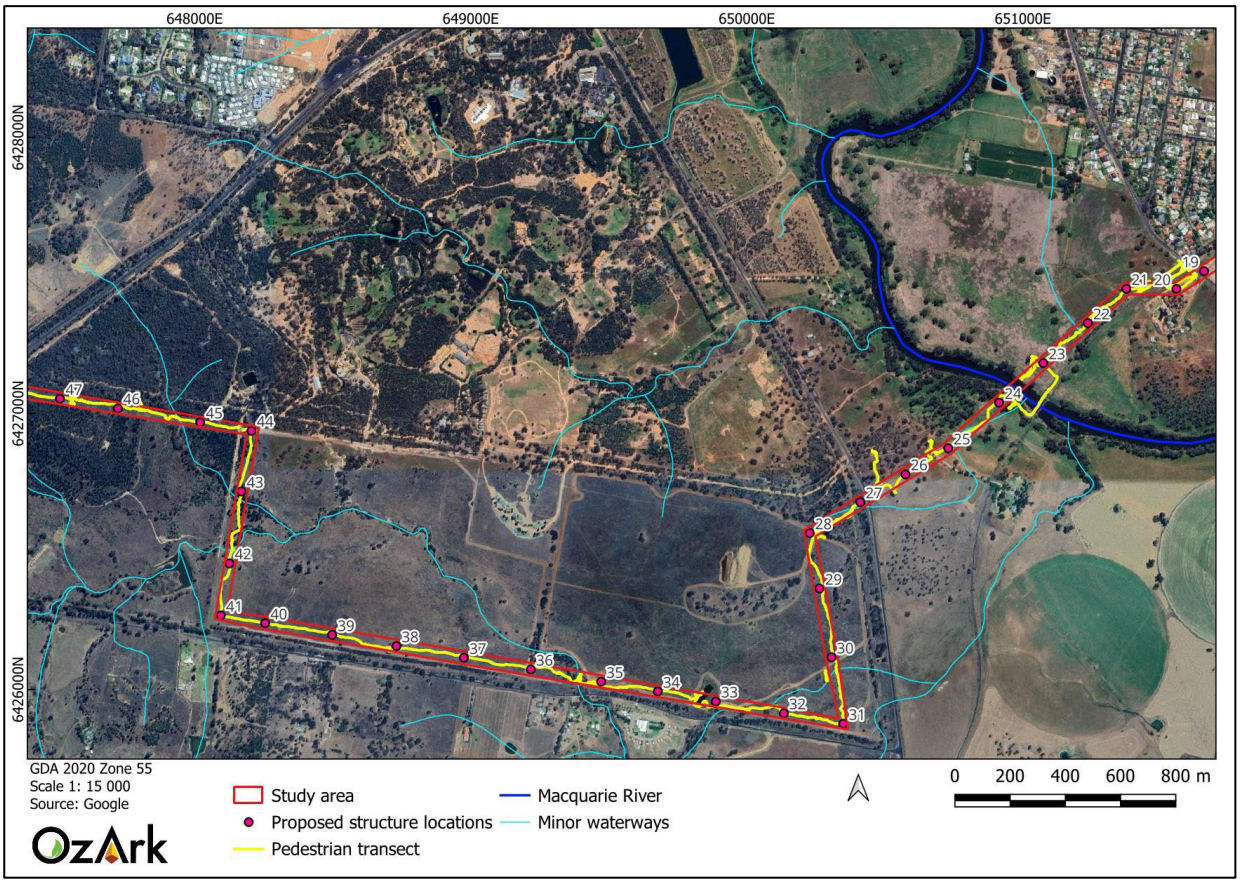


Figure 2-4: Survey coverage within the western portion of the study area.

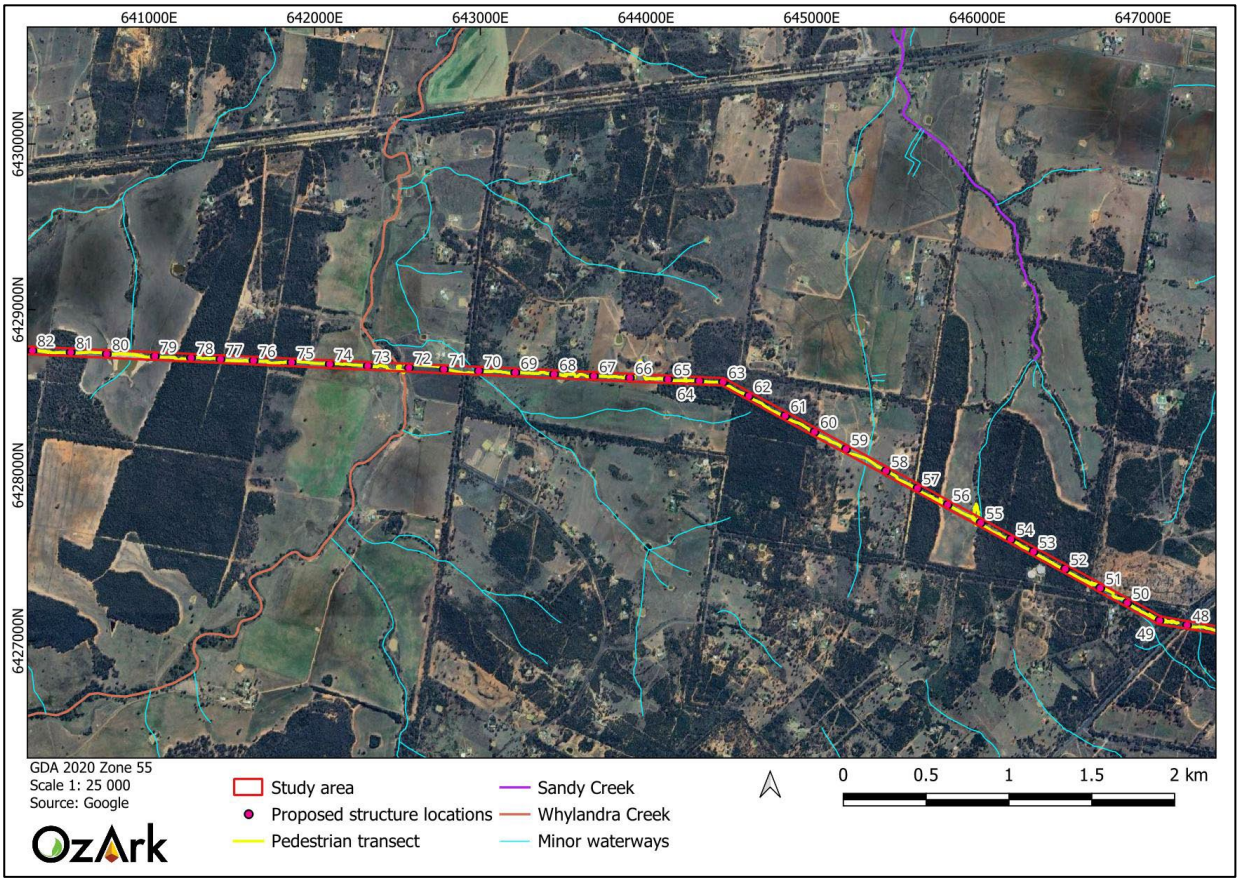
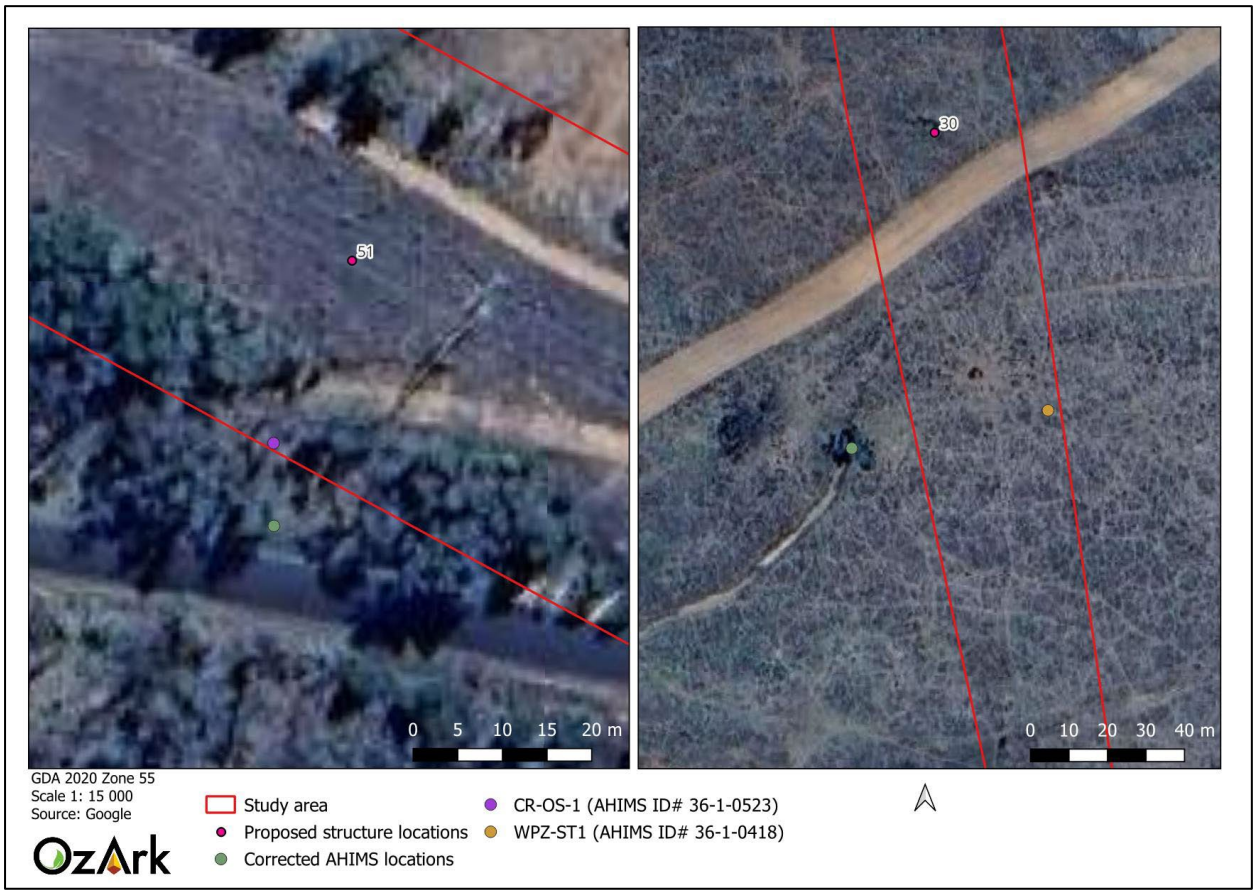


Figure 2-5: Corrected location of sites WPZ-ST1 and CR-OS-1.



Discussion

The recording of Dundullimal Reserve Open Site 2 (DR-OS2) was somewhat expected due to the proximity of the study area to the Macquarie River where many other Aboriginal sites have also been recorded. The heavily ploughed field in which the site was recorded is likely to have exposed the artefact scatter which may have otherwise remained unseen in the surrounding dense ground cover.

The lack of isolated finds and culturally modified trees is likely due to past vegetation clearance along the existing ETL easement and new ETL alignment as well as past agricultural practices such as grazing and cropping which have accelerated natural erosional processes, especially on sloping landforms.

2.4 CONCLUSION

The due diligence process has resulted in the outcome that an Aboriginal Heritage Impact Permit (AHIP) is required. The reasoning behind this determination is set out in **Table 2-4** and the proposed impact location in relation to WPZ Serengeti OS1 is presented on **Figure 2-6**.

Table 2-4: Due Diligence Code of Practice application.

Step	Reasoning	Answer
Step 1 Will the activity disturb the ground surface or any culturally modified trees?	The proposed works will disturb the ground surface through earthworks required for the construction of new ETL structures. The proposal may impact mature, native vegetation and therefore may harm culturally modified trees.	Yes
If the answer to Step 1 is 'yes', proceed to Step 2		
Step 2a Are there any relevant records of Aboriginal heritage on AHIMS to indicate presence of Aboriginal objects?	AHIMS indicated that there are six Aboriginal sites within the study area.	Yes
Step 2b Are there other sources of information to indicate presence of Aboriginal objects?	There are no other sources of information to indicate that Aboriginal objects are likely in the study area, although it is noted that there is a general likelihood for landforms in the region to contain Aboriginal objects.	No
Step 2c Will the activity impact landforms with archaeological sensitivity as defined by the Due Diligence Code?	Landforms with identified archaeological sensitivity are present as proposed Structures 23 and 24 are within 200 m of 'waters.'	Yes
If the answer to any stage of Step 2 is 'yes', proceed to Step 3		
Step 3 Can harm to Aboriginal objects listed on AHIMS or identified by other sources of information and/or can the carrying out of the activity at the relevant landscape features be avoided?	The proposal will impact landforms with archaeological sensitivity as identified in the Due Diligence Code of Practice: landforms within 200 m of 'waters.' The proposal will also impact objects listed on AHIMS (WPZ Serengeti OS1).	No
If the answer to Step 3 is 'no', a visual inspection is required. Proceed to Step 4.		
Step 4 Does the visual inspection confirm that there are Aboriginal objects or that they are likely?	The visual inspection recorded one previously unrecorded Aboriginal site and confirmed the location of one previously recorded site within the study area.	Yes
Conclusion		
Further investigation required.		

Figure 2-6: Aerial showing the proposed location of Structure 35 in relation to Aboriginal site 36-1-0412 (WPZ Serengeti OS1).

3 ABORIGINAL HERITAGE SITES RECORDED

One previously unrecorded Aboriginal site was identified during the visual inspection: Dundullimal Reserve Open Site 2 (DR-OS2). **Table 3-1** summarises the main features of this site.

Table 3-1: Dundullimal Reserve Open Site (DR-OS2): site features.

Site Name	Coordinates (GDA) (Centre point)	Site type	Artefact Count	Site Dimensions (m)
Dundullimal Reserve Open Site 2 (DR-OS2)	650640E 6426827N	Artefact scatter	2	1x1

Dundullimal Reserve Open Site 2 (DR-OS2)

Site Type: Artefact scatter

GPS coordinates: 650640E 6426827N

Location of Site: The site is situated on a gently sloping landform, approximately 350 m southeast of the Macquarie River in a heavily ploughed agricultural field (**Figure 3-1**). The site is approximately 230 m east of Obley Road, within the Dundullimal Reserve, and approximately 3 km south of Dubbo.

Description of Site: The site consists of two stone artefacts manufactured from chert and silcrete. The site is situated within an exposure, had a GSE of 90% and GSV within that exposure of 100%. Soils consisted of a light brown sandy loam which had been recently ploughed. Vegetation outside of the ploughed area comprised scattered shrubs, grasses and weeds. Disturbances include stock grazing, property fence lines, water wash and erosion as well as ploughing.

Figure 3-1: Dundullimal Reserve Open Site 2 (DR-OS2). View of site and recorded artefacts.

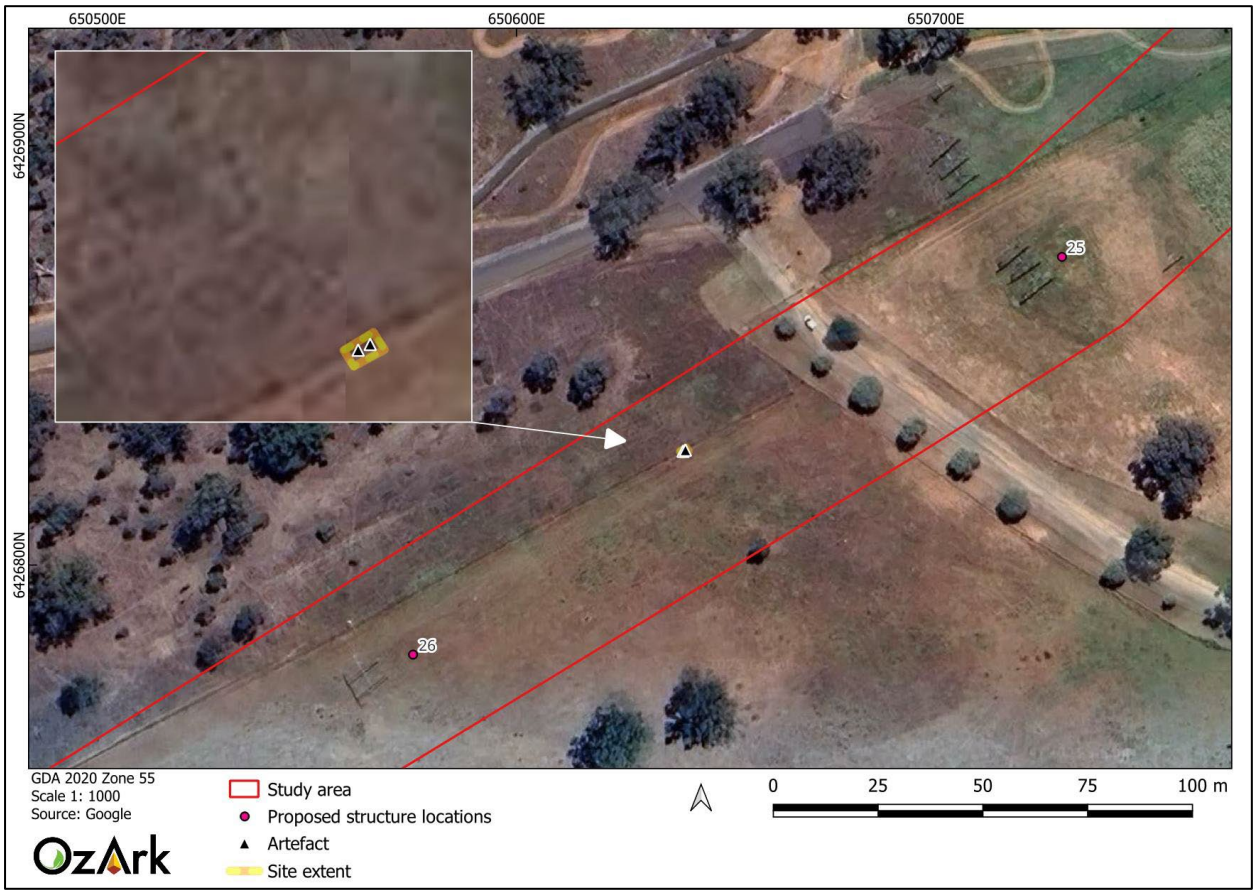
1. View northeast across Dundullimal Reserve Open Site 2 (DR-OS2) site location.

2. Ground level view northeast across Dundullimal Reserve Open Site 2 (DR-OS2) site location.

3. View of chert flake recorded at Dundullimal Reserve Open Site 2 (DR-OS2).

4. View of silcrete flake recorded at Dundullimal Reserve Open Site 2 (DR-OS2).

Figure 3-2: Location of Dundullimal Reserve Open Site 2 (DR-OS2) in relation to the study area.



3.1 ASSESSMENT OF SIGNIFICANCE

3.1.1 Introduction

The appropriate management of cultural heritage items is usually determined based on their assessed significance, as well as the likely impacts of any proposed developments. Cultural, scientific, aesthetic and historical significance are identified as baseline elements of significance

assessment, and it is through the combination of these elements that the overall cultural heritage values of a site, place or area are resolved.

Social or Cultural Value

This area of assessment concerns the importance of a site or features to the relevant cultural group: in this case the Aboriginal community (Articles 1.1, 1.2, 1.12, 5, and 8–11: Burra Charter). Aspects of social value include assessment of sites, items, and landscapes that are traditionally significant or that have contemporary importance to the Aboriginal community. This importance involves both traditional links with specific areas, as well as an overall concern by Aboriginal people for their sites generally and the continued protection of these. This type of value may not be in accord with interpretations made by the archaeologist: a site may have low archaeological value but high social value, or vice versa.

Archaeological/Scientific Value

This refers to the importance of a landscape, area, place or object because of its rarity, representativeness, and the extent to which it may contribute to further understanding and information (Articles 1.2, 5, and 8: Burra Charter).

Assessing a site in this context involves placing it into a broader regional framework, as well as assessing the site's individual merits in view of current archaeological discourse. This type of value relates to the ability of a site to answer current research questions and is also based on a site's condition (integrity), content and representativeness.

The overriding aim of cultural heritage management is to preserve a representative sample of the archaeological resource. This will ensure that future research within the discipline can be based on a valid sample of the past. Establishing whether a site can contribute to current research also involves defining 'research potential'. Questions regularly asked when determining significance are: can this site contribute information that no other site can? Is this site representative of other sites in the region?

Aesthetic Value

This refers to the sensory, scenic, architectural, and creative aspects of the place (Articles 1.12 and 8: Burra Charter). It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use.

Historic Value

Historic value refers to the associations of a place with a historically important person, event, phase. or activity in an Aboriginal community.

Historic places do not always have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities (Articles 1.12–1.16: Burra Charter).

Places of post-contact Aboriginal history have generally been poorly recognised in investigations of Aboriginal heritage. Consequently, the Aboriginal involvement and contribution to important regional historical themes is often missing from accepted historical narratives. This means it is often necessary to collect oral histories along with archival or documentary research to gain enough understanding of historic values.

3.2 ASSESSED SIGNIFICANCE OF THE RECORDED SITES

Table 3-2 presents a summary of the significance assessment of Aboriginal cultural heritage sites recorded during this assessment. Further details of each of the assessment criteria are provided below.

Social or Cultural Value

Dundullimal Reserve Open Site 2 (DR-OS2), regardless of surrounding disturbances and/or loss of context, is considered to have high cultural and social significance to Aboriginal groups. Dundullimal Reserve Open Site 2 (DR-OS2) represents the broader use of the land by previous generations and are a tangible link to the ancestors of the region. No specific comments were made regarding the recorded Aboriginal sites during the visual inspection; however, Dundullimal Reserve Open Site 2 (DR-OS2) has been assessed as having high cultural value.

Archaeological/Scientific Value

Site integrity has been affected by ground disturbance at the site and the site has a low density of surface artefacts that are common in the region. As such, Dundullimal Reserve Open Site 2 (DR-OS2) has been assessed as having low archaeological and scientific value

Aesthetic Value

Dundullimal Reserve Open Site 2 (DR-OS2) has been assessed as having low aesthetic value. The site does not have significant aesthetic value as the integrity of the sensory landscape has been altered in historic and modern times. Additionally, the artefacts are generally not remarkable and do not obviously manifest themselves in the landscape.

Historic Value

No previously known historic events or people are associated with Dundullimal Reserve Open Site 2 (DR-OS2).

Table 3-2: Aboriginal cultural heritage significance assessment.

Site Name	Social or Cultural Value	Archaeological / Scientific Value	Aesthetic Value	Historic Value
Dundullimal Reserve Open Site 2 (DR-OS2)	High	Low	Low	Nil

3.3 LIKELY IMPACTS TO ABORIGINAL HERITAGE FROM THE PROPOSAL

As ground disturbing works will be confined to the proposed access track and drill pad locations, four of the five sites which were confirmed to be located within the study area will not be impacted. One site located at proposed structure location 35 (WPZ Serengeti OS1 (formerly WPZ-IF1)) will be impacted.

Table 3-3 presents a summary of potential impacts to Aboriginal cultural heritage associated with the proposal.

Although not impacted by the proposal, specific management measures have been outlined for two sites (WPZ-OS4 and WPZ-OS5) to ensure no inadvertent harm occurs whilst ground disturbing works occurs. These management measures are outlined in **Section 4**.

Table 3-3: Aboriginal cultural heritage impact assessment.

Site Name	Type of Harm (Direct/Indirect/None)	Degree of Harm (Total/Partial/None)	Consequence of Harm (Total/Partial/No Loss of Value)
Dundullimal Reserve Open Site 2 (DR-OS2)	None	None	No loss of value
WPZ-OS4	None	None	No loss of value
WPZ-OS5	None	None	No loss of value
WPZ Serengeti OS1 (formerly WPZ-IF1)	Direct	Partial	Partial
DLGA-OS-02	None	None	No loss of value

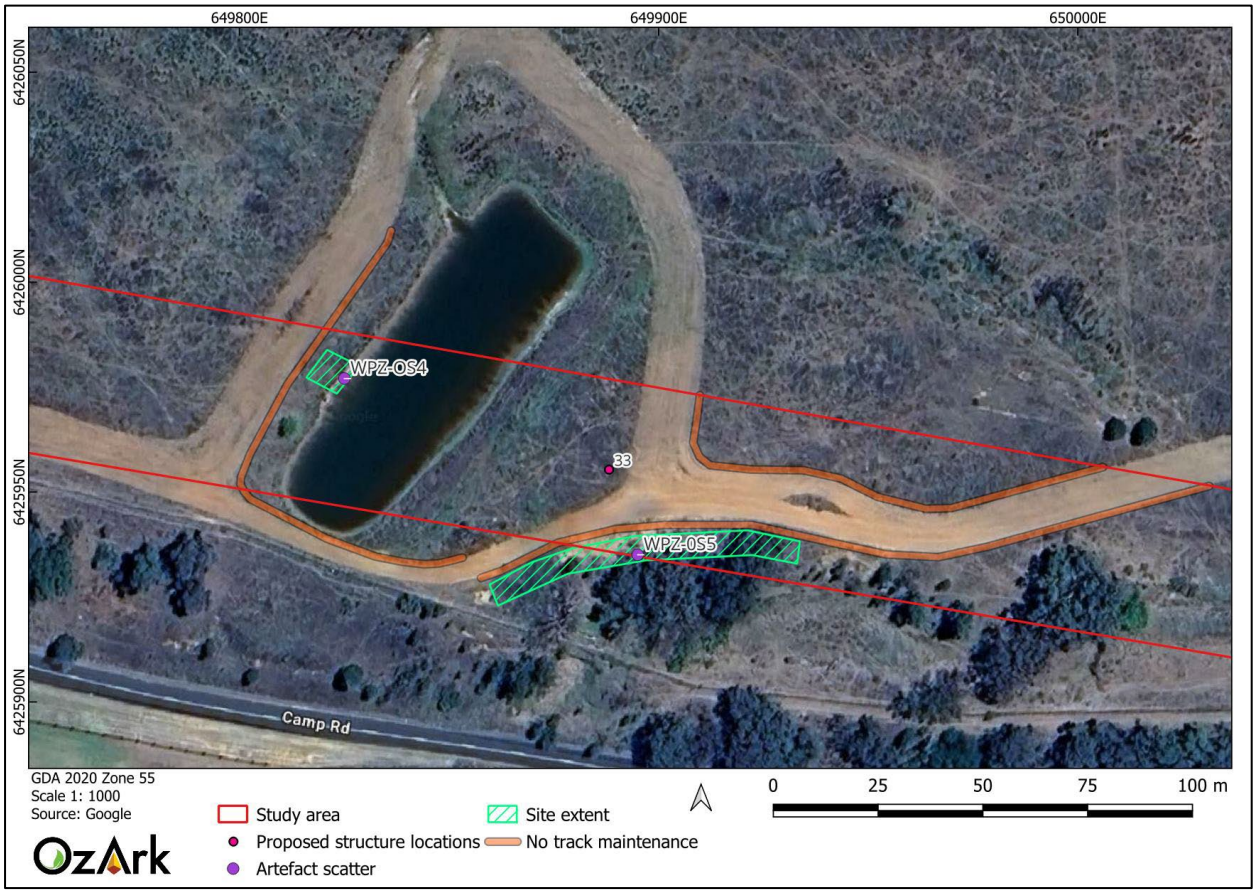
4 MANAGEMENT MEASURES

As the proposed work activities will be occurring in close proximity to WPZ-OS4 and WPZ-OS5 specific management measures have been outlined below.

No artefacts were observed on the trafficable surface of the track during the visual inspection; it is recommended that any vehicles required to use the access track at the location presented in **Figure 4-1** must remain on the track at all times to avoid potential impacts to adjacent artefacts.

No track maintenance may occur outside of the boundary shown on **Figure 4-1**.

Figure 4-1: Proposed management measures for WPZ-OS4 and WPZ-OS5.



5 RECOMMENDATIONS

The undertaking of the due diligence process has resulted in the conclusion that harm will occur to Aboriginal objects. An Aboriginal Heritage Impact Permit (AHIP) application must be made. Integral to an AHIP application is the preparation of an *Aboriginal Cultural Heritage Assessment Report* (ACHAR) and the requirement to follow the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs). The *National Parks and Wildlife Act 1974* is complemented by the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* that set out the requirements for archaeological investigation in NSW where an application for an AHIP is likely to be made.

To ensure the greatest possible protection to the area's Aboriginal cultural heritage values, the following recommendations are made:

1. The proposed work may not proceed at identified heritage locations within the study area (particularly Structure 35) without further archaeological investigation.
2. Contractors should be provided with the locations of WPZ Serengeti OS1 (formerly WPZ IF1) as well as the locations of WPZ-OS4, WPZ-OS5, DLGA-OS-02 and Dundullimal Reserve Open Site 2 (DR-OS2) No harm must happen to these sites to avoid these sites while further archaeological investigations are undertaken.
3. No track maintenance may occur outside of the boundary shown on **Figure 4-1** unless further investigation is undertaken.
4. No land and ground disturbance activities may occur outside the study area. Should the parameters of the proposal extend beyond the assessed areas, then further archaeological assessment may be required.
5. The information presented here meets the requirements of the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. It should be retained as shelf documentation for five years as it may be used to support a defence against prosecution in the event of unanticipated harm to Aboriginal objects.

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APPENDIX 1: AHIMS SEARCH RESULTS

AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : Forest Glen
Client Service ID : 972454

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-1-0101	M8 Dubbo	AGD	55	650350	6427000	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site,Scarred Tree	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0533	PS-OS-01	GDA	55	648543	6428695	Open site	Destroyed	Artefact : 11		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Ms.Coral Peckham,Mr.Ba					Permits	4902	
36-1-0572	DLGA-OS-05	AGD	55	646278	6428424	Open site	Valid	Artefact : 12		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0560	DLGA-OS-02	AGD	55	651407	6427264	Open site	Valid	Artefact : 2		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0665	DSD1 (RAAF-OS1)	GDA	55	652323	6429705	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Morgan Wilcox					Permits	4345	
36-1-0677	BRIP1;	GDA	55	647380	6427282	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Chris Lovell					Permits		
36-1-0750	JR-OS1 - #36-1-0629 Salvaged artefact relocation	GDA	55	648137	6429460	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Philippa Sokol					Permits		
36-1-0176	C-IF-1 (Dubbo)	AGD	55	649810	6429100	Open site	Valid	Artefact : 1	Isolated Find	3700
	Contact	Recorders	Jim Kelton					Permits		
36-1-0030	Cootha;Dubbo;	AGD	55	650955	6427521	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Michael Pearson					Permits		
36-1-0228	OR-ST-3 (Eulomogo)	AGD	55	650290	6426370	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton					Permits		
36-1-0615	Dundullimal Reserve Open Site with PAD (DR-OS1-WITH PAD)	AGD	55	650592	6426739	Open site	Valid	Artefact : 50		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0629	Joira Road Open Site 1	GDA	55	648137	6429460	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Ms.Morgan Wilcox					Permits	3656	
36-1-0747	Obley Road IF-1	GDA	55	649554	6428288	Open site	Valid	Artefact : -		104289
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
36-1-0757	WPZ-IF-04	GDA	55	649153	6428141	Open site	Valid	Artefact : -		
	Contact	Recorders	Access Archaeology and Heritage Pty Ltd,Mr.Douglas Williams					Permits	4572,4583	
36-1-0416	WPZ-OS4	GDA	55	649825	6425977	Open site	Valid	Artefact : -		98215
	Contact	Recorders	Doctor.Jodie Benton					Permits		
36-1-0412	WPZ Serengeti OS1 (formerly WPZ-IF1)	GDA	55	649481	6426027	Open site	Valid	Artefact : -		98215
	Contact	Recorders	Doctor.Jodie Benton,OzArk Environmental and Heritage Management - Dubbo,Mr.J					Permits	5360	

Report generated by AHIMS Web Service on 05/02/2025 for Jordan Henshaw for the following area at Datum :GDA, Zone : 55, Eastings : 636701.0 - 654000.0, Northings : 6425809.0 - 6429705.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 110

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AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : Forest Glen
Client Service ID : 972454

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-1-0108	M15 Dubbo	AGD	55	651200	6426450	Open site	Valid	Artefact : -	Open Camp Site	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0100	M7 Dubbo	AGD	55	650100	6427100	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site,Scarred Tree	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0103	M10 Dubbo	GDA	55	650432	6427023	Open site	Partially Destroyed	Artefact : 93, Shell : -, Potential Archaeological Deposit (PAD) : -	Open Camp Site	1065,104771
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox,OzArk Environmental and Heritage Managen					Permits	4772	
36-1-0564	DLGA-IF-04	AGD	55	647614	6428735	Open site	Valid	Artefact : 1		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0567	DLGA-IF-03	AGD	55	646286	6428718	Open site	Valid	Artefact : 1		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0221	OR-ST-9 (Eulomogo)	AGD	55	650036	6427148	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton					Permits		
36-1-0192	K-IF-1;	GDA	55	651940	6427470	Open site	Valid	Artefact : -	Isolated Find	3348
	Contact	Recorders	Jim Kelton					Permits		
36-1-0523	CR-OS-1	AGD	55	646620	6427110	Open site	Valid	Artefact : 4		104289
	Contact T Russell	Recorders	Jim Kelton					Permits		
36-1-0524	D-OS-1, Newell Highway	AGD	55	646300	6426100	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact T Russell	Recorders	Jim Kelton					Permits		
36-1-0413	WPZ-OS1	AGD	55	648259	6426165	Open site	Valid	Artefact : -		98215
	Contact	Recorders	Doctor.Jodie Benton					Permits		
28-1-0025	DLGA-ST-04	GDA	55	647348	6428942	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo,MCH - McCardle Cultural					Permits		
36-1-0558	DLGA-ST-01	AGD	55	651300	6426770	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0630	Dundullimal Scarred Tree 1	GDA	55	650995	6426688	Open site	Valid	Modified Tree (Carved or Scarred) : -		

Report generated by AHIMS Web Service on 05/02/2025 for Jordan Henshaw for the following area at Datum :GDA, Zone : 55, Eastings : 636701.0 - 654000.0, Northings : 6425809.0 - 6429705.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 110

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AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : Forest Glen
Client Service ID : 972454

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Doctor.Jodie Benton,OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0095	M2 Dubbo	AGD	55	649800	6429050	Open site	Valid	Artefact : -	Open Camp Site	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0096	M3 Dubbo	AGD	55	649760	6428410	Open site	Valid	Artefact : -	Open Camp Site	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0177	C-ST-1.	AGD	55	649680	6428790	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3700
	Contact	Recorders	Jim Kelton					Permits		
36-1-0179	Keswick-Scarred Tree-5 (K-ST-5)	GDA	55	653794	6429259	Open site	Destroyed	Modified Tree (Carved or Scarred) : -	Scarred Tree	3350
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd,OzArk Environmental a					Permits	3873	
36-1-0115	M22 Dubbo	AGD	55	650940	6426290	Open site	Valid	Artefact : 219	Open Camp Site	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0223	OR-IF-1 (Eulomogo)	AGD	55	649848	6427271	Open site	Valid	Artefact : -	Isolated Find	3737,4738,98215
	Contact	Recorders	Doctor.Jodie Benton,Jim Kelton					Permits		
36-1-0227	OR-ST-4 (Eulomogo)	AGD	55	650320	6426060	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton					Permits		
36-1-0229	OR-ST-5 Eulomogo)	AGD	55	650390	6425980	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton					Permits		
36-1-0230	OR-ST-8 (Eulomogo)	AGD	55	649740	6427570	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton					Permits		
36-1-0614	Dundullimal Reserve Scarred Tree 2 (DR-ST2)	AGD	55	650695	6426925	Open site	Valid	Modified Tree (Carved or Scarred) : 1		101792
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0694	DBIA01	GDA	55	649664	6429679	Open site	Valid	Artefact : 1		
	Contact	Recorders	Everick Heritage Pty Ltd,Mr.Tim Robins					Permits		
36-1-0420	WPZ-ST3	AGD	55	649708	6426094	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98215
	Contact	Recorders	Doctor.Jodie Benton					Permits		

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AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : Forest Glen
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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-1-0036	Cootha, Dubbo	AGD	55	649300	6428581	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	Contact	Recorders	Sabu Dunn,Michael Pearson,P Gresser,A.K. Morris					Permits	1922	
36-1-0275	PR-IF-1	AGD	55	648720	6428400	Open site	Valid	Artefact : 1	Isolated Find	
	Contact	Recorders	Lloyd Nolan					Permits		
36-1-0105	M12 Dubbo	AGD	55	650360	6426700	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0532	PS-ST-01	GDA	55	648040	6428400	Open site	Destroyed	Modified Tree (Carved or Scarred) : 1		
	Contact T Russell	Recorders	OzArk Environmental and Heritage Management - Dubbo,Ms.Coral Peckham,Mr.Ba					Permits	4902	
36-1-0559	DLGA-OS-03	AGD	55	651324	6427339	Open site	Valid	Artefact : 5		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0714	HD-OS1 with PAD	GDA	55	652699	6426886	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Philippa Sokol					Permits		
36-1-0157	dundullirial;	GDA	55	650460	6426803	Open site	Valid	Artefact : -	Open Camp Site	1333,104771
	Contact	Recorders	Warren Bluff,OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyc					Permits		
36-1-0178	C-OS-1 Dubbo	AGD	55	649680	6428790	Open site	Valid	Artefact : -	Open Camp Site	3700
	Contact	Recorders	Jim Kelton					Permits		
36-1-0222	OR-IF-2 (Eulomogo)	AGD	55	650120	6427000	Open site	Valid	Artefact : 1	Isolated Find	3737,4738
	Contact	Recorders	Jim Kelton					Permits		
36-1-0525	CR-ST-1	AGD	55	647150	6426980	Open site	Valid	Modified Tree (Carved or Scarred) : 1		104289
	Contact T Russell	Recorders	Jim Kelton					Permits		
36-1-0613	Dundullimal Reserve Scarred Tree 1 (DR-ST1)	AGD	55	650605	6426823	Open site	Valid	Modified Tree (Carved or Scarred) : -		101792
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0718	WPZ-ST-04	GDA	55	649347	6426815	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Access Archaeology and Heritage Pty Ltd,Mr.Douglas Williams					Permits		
36-1-0418	WPZ-ST1	AGD	55	650233	6425860	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98215
	Contact	Recorders	Doctor.Jodie Benton					Permits		

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AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : Forest Glen
Client Service ID : 972454

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-1-0419	WPZ-ST2	AGD	55	647066	6426744	Open site	Valid	Modified Tree (Carved or Scarred) : -		98215
	Contact	Recorders	Doctor Jodie Benton					Permits		
36-1-0704	Macquarie-OS1	GDA	55	651268	6427884	Open site	Destroyed	Artefact : -		103498,103670
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,OzArk Environmental an					Permits	4087	
36-1-0099	M6 Dubbo	AGD	55	650100	6427650	Open site	Valid	Artefact : -	Open Camp Site	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0556	DLGA-ST-03	AGD	55	650466	6427053	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0557	DLGA-ST-02	AGD	55	651652	6427032	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0171	GL-OS-8	AGD	55	649150	6425740	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site,Scarred Tree	3713
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
36-1-0174	C-OS-2;	AGD	55	649334	6428326	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3700
	Contact	Recorders	Jim Kelton					Permits		
36-1-0191	K-ST-1;	GDA	55	651870	6427290	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3348
	Contact	Recorders	Jim Kelton					Permits		
36-1-0415	WPZ-OS3	GDA	55	648703	6426610	Open site	Valid	Artefact : -		98215
	Contact	Recorders	Doctor Jodie Benton					Permits		
36-1-0793	Miriam DA1 AS1	GDA	55	651443	6427565	Open site	Valid	Artefact : -		
	Contact	Recorders	AREA Environmental & Heritage - Dubbo,Ms Kim Newman					Permits		
36-1-0795	Miriam-PPW-ISO01	GDA	55	651133	6427524	Open site	Valid	Artefact : -		
	Contact	Recorders	AREA Environmental & Heritage - Dubbo,Ms Kim Newman					Permits		
36-1-0106	M13 Dubbo	AGD	55	650940	6426590	Open site	Valid	Artefact : -	Open Camp Site	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0570	DLGA-OS-08	AGD	55	646103	6429185	Open site	Valid	Artefact : 3		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0574	DLGA-OS-04	AGD	55	646187	6428854	Open site	Valid	Artefact : 4		

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AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : Forest Glen
Client Service ID : 972454

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0563	DLGA-IF-01	AGD	55	651353	6427429	Open site	Valid	Artefact : -		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0668	Scarred Tree (RAAF-ST2)	GDA	55	652788	6429549	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	Ms Morgan Wilcox					Permits		
36-1-0213	K-ST-6	AGD	55	653640	6428240	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3350
	Contact	Recorders	Jim Kelton					Permits		
36-1-0224	OR-ST-6 (Eulomogo)	AGD	55	650300	6426330	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton					Permits		
36-1-0225	OR-ST-1 (Eulomogo)	AGD	55	649240	6428320	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737
	Contact	Recorders	Jim Kelton					Permits		
36-1-0226	OR-ST-2 (Eulomogo)	AGD	55	649280	6428270	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3737,4738
	Contact	Recorders	Jim Kelton					Permits		
36-1-0190	K-OS-1;	GDA	55	651870	6427290	Open site	Valid	Artefact : -	Open Camp Site	3348
	Contact	Recorders	Jim Kelton					Permits		
36-1-0325	PR-IF_01	AGD	55	648720	6428400	Open site	Valid	Artefact : 1	Isolated Find	
	Contact	Recorders	Lloyd Nolan					Permits		
36-1-0772	K-OS-4 Reburial location	GDA	55	653381	6427225	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss Stephanie Rusden					Permits		
36-1-0807	8RJ-PAD-01	GDA	55	647763	6429287	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Apex Archaeology,Ms Jenni Bate					Permits		
36-1-0107	M14 Dubbo	AGD	55	651780	6426690	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0098	M5 Dubbo	AGD	55	649920	6428100	Open site	Valid	Artefact : -	Open Camp Site	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		

Report generated by AHIMS Web Service on 05/02/2025 for Jordan Henshaw for the following area at Datum :GDA, Zone : 55, Eastings : 636701.0 - 654000.0, Northings : 6425809.0 - 6429705.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 110

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AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : Forest Glen
Client Service ID : 972454

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-1-0104	M11 Dubbo	GDA	55	650317	6427023	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	1065,104771
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox,OzArk Environmental and Heritage Manager					Permits		
36-1-0565	DLGA-IF-06	AGD	55	646098	6429275	Open site	Valid	Artefact : -		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0568	DLGA-OS-07	AGD	55	645988	6429436	Open site	Valid	Artefact : 24		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0573	DLGA-ST-05	AGD	55	646091	6428174	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0594	C-ST-2 (Eulomogo)	AGD	55	649280	6428370	Open site	Valid	Modified Tree (Carved or Scarred) : -		4738,104289
	Contact	Recorders	Jim Kelton					Permits		
36-1-0676	BR-ST1	GDA	55	647276	6427911	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Chris Lovell					Permits		
35-3-0213	Macquarie-OS1 Reburial	GDA	55	651225	6427848	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Stephanie Rusden					Permits		
36-1-0021	Dundallimal;	AGD	55	650921	6426608	Open site	Valid	Hearth : -, Artefact : -, Grinding Groove : -, Aboriginal Ceremony and Dreaming : -, Ceremonial Ring (Stone or Earth) : -	Axe Grinding Groove,Mound (Oven),Open Camp Site	
	Contact	Recorders	P.Gresser,A.K. Morris					Permits		
36-1-0189	K-OS-4	GDA	55	653901	6427013	Open site	Destroyed	Artefact : -	Open Camp Site	3348,104317
	Contact	Recorders	Jim Kelton,OzArk Environmental and Heritage Management - Dubbo,Miss.Stephani					Permits	4471	
36-1-0422	WPZ-ST5	AGD	55	649244	6427771	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98215
	Contact	Recorders	Doctor.Jodie Benton					Permits		
36-1-0717	WPZ-IF-03	GDA	55	649138	6426843	Open site	Valid	Artefact : -		
	Contact	Recorders	Access Archaeology and Heritage Pty Ltd,Mr.Douglas Williams					Permits		
36-1-0417	WPZ-OS5	GDA	55	649895	6425935	Open site	Valid	Artefact : -		98215
	Contact	Recorders	Doctor.Jodie Benton					Permits		

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AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : Forest Glen
Client Service ID : 972454

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-1-0421	WPZ-ST4	AGD	55	649255	6427800	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98215
	Contact	Recorders	Doctor.Jodie Benton					Permits		
36-1-0414	WPZ-OS2	AGD	55	648437	6426492	Open site	Valid	Artefact : -		98215
	Contact	Recorders	Doctor.Jodie Benton					Permits		
36-1-0109	M16 Dubbo	AGD	55	652500	6425940	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0354	BR-IF-01..	AGD	55	648148	6427849	Open site	Valid	Artefact : 1		97606
	Contact	Recorders	Lloyd Nolan					Permits	1716	
36-1-0102	M9 (a)(b)(c) Dubbo	AGD	55	650580	6426970	Open site	Valid	Modified Tree (Carved or Scarred) : 3	Scarred Tree	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0534	PS-OS-02	GDA	55	648270	6428350	Open site	Destroyed	Artefact : 5		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Ms.Coral Peckham,Mr.Ba					Permits	4902	
36-1-0566	DLGA-IF-05	AGD	55	646190	6429069	Open site	Valid	Artefact : 1		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0569	DLGA-OS-09	AGD	55	646039	6429168	Open site	Valid	Artefact : 2		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0571	DLGA-OS-06	AGD	55	646278	6428424	Open site	Valid	Artefact : 12		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0561	DLGA-OS-01	AGD	55	651688	6427148	Open site	Valid	Artefact : 18		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0562	DLGA-IF-02	AGD	55	651224	6427616	Open site	Valid	Artefact : -		
	Contact Searle	Recorders	OzArk Environmental and Heritage Management - Dubbo					Permits		
36-1-0666	RAAF-ST3	GDA	55	652764	6429580	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	Ms.Morgan Wilcox					Permits		
36-1-0040	DubboCootha;	AGD	55	650955	6427521	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	Recorders	Michael Pearson					Permits		
36-1-0130	Dundillamal;	AGD	55	650413	6426385	Open site	Valid	Modified Tree (Carved or Scarred) : 3	Scarred Tree	1333
	Contact	Recorders	Warren Bluff					Permits		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Forest Glen
Client Service ID : 972454

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-1-0097	Dubbo M4	AGD	55	649810	6428350	Open site	Valid	Artefact : -	Open Camp Site	1065
	Contact	Recorders	N Franklin,Margrit Koettig,Rex Silcox					Permits		
36-1-0692	DBAS02	GDA	55	649677	6429679	Open site	Valid	Artefact : 1		
	Contact	Recorders	Everick Heritage Pty Ltd,Mr.Tim Robins					Permits		
36-1-0515	DWTP-OS1	AGD	55	650830	6428395	Open site	Valid	Artefact : 6		
	Contact Searle	Recorders	Doctor Jodie Benton					Permits	2166,2167,2216,2305	
36-1-0796	Miriam-PPE-CMT01	GDA	55	651524	6426922	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	AREA Environmental & Heritage - Dubbo,Ms.Kim Newman					Permits		

** Site Status
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

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Appendix D: Standard Exemption Record Keeping Form - Dundullimal

Standard Exemption Record Keeping Form

This form is to assist owners and managers when recording the use of standard exemptions under section 57(2) of the *Heritage Act 1977*. Use the form each time a standard exemption is used. Retain copies of completed forms and all relevant information for your records and to demonstrate compliance with the general conditions of use for the standard exemptions.

Use of the standard exemptions is self-assessed. In completing this form you acknowledge that this record is not for assessment purposes and does not represent an endorsement of the Heritage Council for the work or use of exemptions. This form may be requested as part of an audit or compliance investigation. This information cannot be relied on as a defence to prosecution.

Affected heritage item

Name of State Heritage Register item/IHO item: 'Dundullimal'
Insert name as it appears in the State Heritage Inventory or interim heritage order

Street address of heritage item: Obley Road Dubbo NSW 2830

Local government area: Dubbo Regional Council

State Heritage Register/ interim heritage order reference number: SHR#01497

Activity/works

Description of works:

Include at a minimum what the activity/work is, how it will be carried out, what parts of the item it affects, what materials will be used.

The proposal involves the replacement of an existing 132 kilovolt overhead powerline with a dual circuit overhead powerline, along the same alignment and within the existing corridor, at the location where the proposal interacts with the Dundullimal site. The existing powerline is currently timber poles and steel towers in the vicinity of Dundullimal and they will be replaced with galvanised steel poles. The poles, located outside of the heritage listed curtilage will be installed with a drill rig (auger on a 30 tonne excavator), with footings in concrete poured and then the steel pole attached to the footing. Conductor will then be strung between the poles.

Standard Exemption: 3: Alteration to non-significant fabric

Statement of Significance Referred to: State Heritage Register

If not the State Heritage Register, record the document title, author and date:

Document Title	Author	Date

Was professional advice required to use the Standard Exemption? Yes: ☐ No: ☒

Was professional advice sought to use the Standard Exemption (even if it was not required by the relevant standards)? Yes: ☐ No: ☒

If yes to either of the above questions on professional advice, complete the table below (add additional rows if required):

Name of company/ person who advised	Date of advice	Title of any document containing the advice

Cost of works:	$	Start date:	1/09/2025	Completion date:	24/12/2025

Were any inspections undertaken? Yes: ☒ No: ☐

If yes, complete below (add additional rows if required):

Date of inspection	Who inspected (name and organisation)	Purpose of inspection	Inspection findings
29 and 30 January 2025	Tim Haydon Essential Energy	Site inspection to inform environmental assessment and walk through with ecological and Aboriginal archaeology consultant	Determine the positioning of the powerline in relation to the Dundullimal site. Identify existing site features.

Challenges encountered and/or change of plans

Describe here the challenge or change and how you managed it. Remember: any change of plans that would not comply with the Standard Exemption require approval under the *Heritage Act 1977* before activity/works can be undertaken.

Heritage impact

Summarise how the activity/ work will change the heritage item. What elements of the item will be affected? Are those elements significant or non-significant? How will those elements change? Is the change permanent or temporary and will the change be reversible? Does the change to those elements affect their significance and/or the item's overall significance? Remember: there must be no impact to the item's overall significance to work under a Standard Exemption.

Heritage NSW | Department of Planning and Environment | Locked Bag 5020 Parramatta NSW 2124 | Phone: 02 9873 8500
Email: heritagemailbox@environment.nsw.gov.au EHG2022/0485 August 2022

At present the existing overhead powerline traverses the curtilage for the access component of the Dundullimal curtilage. The proposal will similarly only intersect with an isolated section of the access component of the Dundillimal curtilage, in approximately the same alignment. The site is shown below. The proposed span will be in the equivalent location of the current span of the existing powerline, though may be elevated compared to current as the proposed poles are eight metres taller. The three poles northeast of the access and the two poles southwest of the access will be replaced with a single pole along the approximate centreline of the existing alignment in similar pole footing locations. No excavation or construction works are required in the Dundillimal access curtilage beyond the stringing of the overhead conductor. The stringing process will not disturb the ground surface. In the vicinity of proposed alignment and the Dunduillimal access, is an additional redundant section of powerline that will be decommissioned, reducing the current number of poles and structures in the location. The altered configuration in the location shows the reduction in poles and structures (See image below). There will be negligible change from current conditions on state and local heritage listed Dundillimal homestead. The proposal is unlikely to impact on the significant fabric of the State heritage significance of the item, which relates to the extant house, stables, joinery and timber shed.

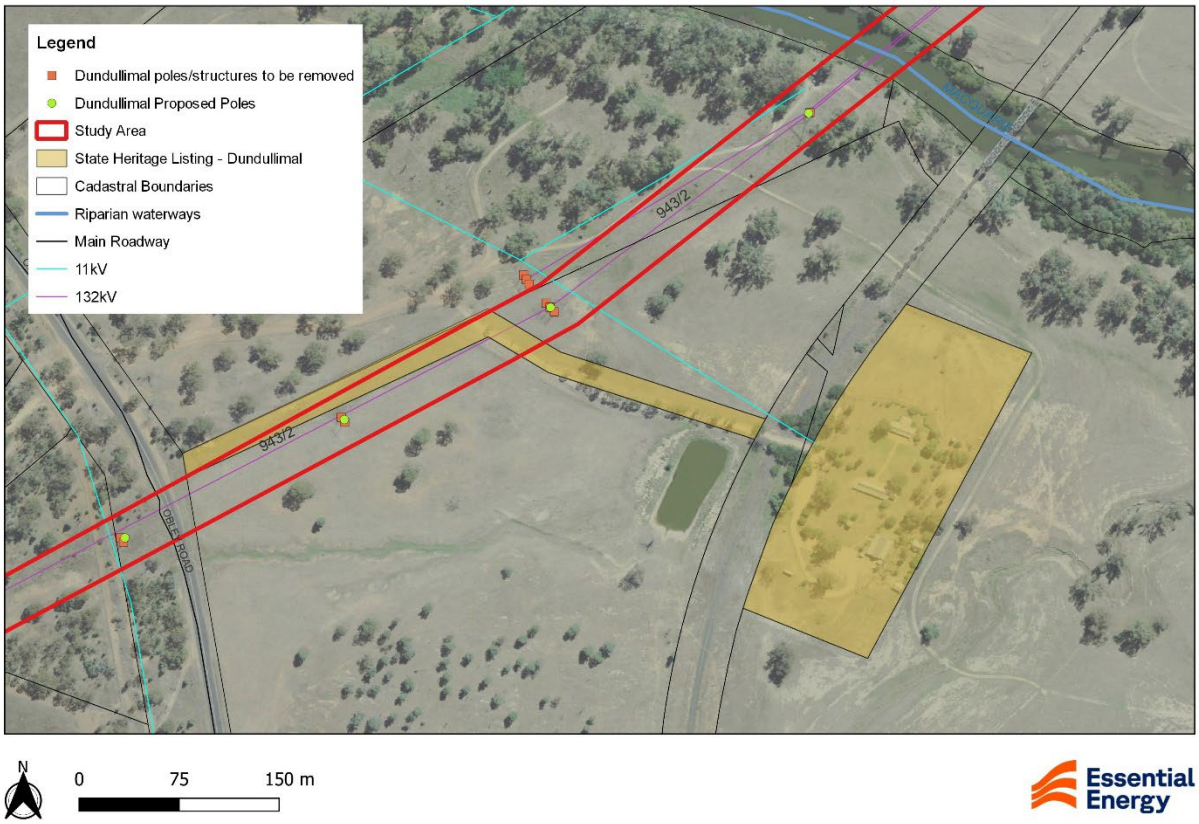

Figure – Proposed activities at the Dundullimal site

Heritage controls:

What measures were put in place to minimise or avoid impact from the activity/ work to significant elements, fabric, values and the item's overall heritage significance?

The following mitigation measures would be applied: All construction work would be undertaken within the assessed areas of the proposal site only In the unlikely event that a previously unknown heritage site or object is located during construction of the proposal, works would cease immediately in that area and a representative from Essential Energy's Environmental Services would be notified. Works with the potential to disturb the object would not resume until the object had been properly identified, and appropriate action taken

Contact details (person completing is form)

Name	Tim Haydon
Organisation/role	Essential Energy/ Environmental Senior Specialist
Postal address:	8 Buller Street, Port Macquarie, NSW 2444
Email:	Tim.haydon@essentialenergy.com.au
Phone number:	0401 008 181

Name of heritage item owner (if not the contact who completed this form)	Rodney Walker (noting that the National Trust of Australia have an interest in the homestead).

Attachments

List the names of any other documents or files that form part of the exemption record in addition to this form.

Review of Environmental Factors (REF): 9GG/9G9 132kV Overhead Powerline Rebuild, from Forest Glen Solar Farm to Dubbo South Zone Substation

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