Upper Hunter Energy Park 66 kV Overhead Line

Review of Environmental Factors (REF): Contestable Connection

FINAL

March 2026

umwelt

Upper Hunter Energy Park 66 kV Overhead Line

Review of Environmental Factors (REF):
Contestable Connection

FINAL

Prepared by
Umwelt (Australia) Pty Limited

On behalf of
YZ Consulting c/o Maven Renewable Energy Pty Ltd

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Report No.: 30717 / R08
Date: March 2026

This report was prepared using Umwelt's ISO 9001 certified Quality Management System.

Detail	Description
Proposed Activity Name	Upper Hunter Energy Park 66 kV Overhead Line
Proposed Activity	Construct, operate and maintain an overhead 66 kilovolt power line from the Upper Hunter Energy Park to the Scone Substation
Public Authority	Ausgrid Operator Partnership, trading as Ausgrid
	570 George Street, Sydney NSW 2000

Acknowledgement of Country

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Note 1: Principal Environmental Consultant | Master of Design Science: University of Sydney, Australia, 2007 | Certified Environmental Practitioner (CEnvP) | Affiliate Member, Planning Institute of Australia

Contents

Glossary **7**

Executive Summary **11**

The Proposed Activity 11
Background and Need 11
Proposed Activity Alternatives 12
Statutory Planning and Legislation 12
Environmental Impact Assessment 12
Proposed Activity Justification and Conclusions 15

1 Introduction **16**

1.1 Purpose of the Review of Environmental Factors 16
1.2 The Proposed Activity 16
1.3 Background and Need 19
1.4 Related Projects 20
1.5 Study Area 20
1.6 Description of the Proposed Activity 22
1.7 Physical Structures 23
1.8 Construction Activities 23
1.9 Operation and Maintenance Requirements 28

2 Consultation **29**

2.1 Overview and Engagement Objectives 29
2.2 Engagement Activities 29
2.3 Statutory Consultation 32
2.4 Landholder Consultation 34
2.5 REF Exhibition Summary 34
2.6 Post-determination Activities 36

3 Investigation of Alternatives for the Proposed Activity **37**

3.1 Assessing Alternative Options 37
3.2 Do Nothing 37
3.3 Alignment Options 37
3.3.1 Preliminary Alignment Option 37
3.3.2 Proposed Alignment Option 38

4 Environmental Legislation **39**

4.1 Environmental Planning and Assessment Act 1979 39
4.2 State Environmental Planning Policy (Transport and Infrastructure) 2021 39
4.3 State Environmental Planning Policy (Planning Systems) 2021 39
4.4 Environment Protection and Biodiversity Conservation Act 1999 40
4.5 Electricity Supply Act 1995 40
4.6 Protection of the Environment Operations Act 1997 40
4.7 Biodiversity and Conservation Act 2016 41
4.8 Summary of Legislative Requirements 41
4.9 Upper Hunter Shire Local Environmental Plan 2013 44

5 Environmental Assessment **46**

5.1 Land Use 46
5.2 Climate Change 49
5.3 Electric and Magnetic Fields 52
5.4 Noise and Vibration 55
5.5 Air Quality 60
5.6 Hydrology 62
5.7 Geology and Soil 65
5.8 Contamination 69
5.9 Waste 70
5.10 Flora and Fauna 72
5.11 Bushfire 81
5.12 Aboriginal Heritage 84
5.13 Non-Aboriginal Heritage 90
5.14 Visual and Aesthetics 94
5.15 Traffic and Access 96
5.16 Social and Economic 102
5.17 Cumulative Impact 104

6 Consideration of Environmental Factors 107
6.1 Clause 171 Factors 107
6.2 Matters of National Environmental Significance 108
6.3 Ecologically Sustainable Development 108

7 Summary of Impacts 111

8 Environmental Management Plan 114
8.1 Construction Environmental Management Plan 114
8.2 Operation Environmental Management Plan 116

9 Certification 127

References 129

Tables

Table 1-1: Proposed Activity Location Overview 17
Table 2-1: Community Consultation Issues Summary 30
Table 2-2: Consultation Responses 32
Table 2-3: REF Exhibition Submissions and Issues Summary 34
Table 4-1: Summary of Legislative Requirements 42
Table 4-2: Objectives of Land Zoning 44
Table 5-1: Land use mitigation measures 49
Table 5-2: Climate Change Mitigation Measures 52
Table 5-3: Magnetic Field Measurements and Ranges Associated with Various Appliances and Feeders 53
Table 5-4: Magnetic Field Reference Levels at 50 Hz for IEEE and ICNIRP 54
Table 5-5: EMF Mitigation Measures 55
Table 5-6: Noise and Vibration Mitigation Measures 58

Table 5-7: Air Quality Mitigation Measures 61
Table 5-8: Hydrology Quality Mitigation Measures 64
Table 5-9: Geology and Soil Mitigation Measures 68
Table 5-10: Contamination Mitigation Measures 69
Table 5-11: Waste Mitigation Measures 71
Table 5-12: Plant Community Types within Proposed Activity Area 76
Table 5-13: Flora and Fauna Mitigation Measures 79
Table 5-14: Bushfire Mitigation Measures 84
Table 5-15: Aboriginal Heritage Mitigation Measures 89
Table 5-16: Non-Aboriginal Heritage Items 91
Table 5-17: Non-Aboriginal Heritage Mitigation Measures 94
Table 5-18: Visual Mitigation Measures 96
Table 5-19: Traffic and access mitigation measures 101
Table 5-20: Social and Economic Mitigation Measures 103
Table 5-21: Summary of Cumulative Impacts 104
Table 6-1: Consideration of clause 171 factors 107
Table 6-2: Consideration of Matters of NES 108
Table 7-1: Summary of Impacts 111
Table 8-1: Implementation Mitigation Measures 116

Figures

Figure 1-1: Proposed Activity Locality Plan 18
Figure 1-2: Proposed Activity Area 21
Figure 4-1: Land Zoning 45
Figure 5-1: Proposed Activity Area and Land Use 48
Figure 5-2: Nearby Residential Receivers 56
Figure 5-3: Flood Prone Land in Proposed Activity Area 63
Figure 5-4: Soil Landscapes of the Proposed Activity Area 67
Figure 5-5: Survey Effort 75
Figure 5-6: Vegetation Communities within Survey Area 78
Figure 5-7: Bushfire Prone Lands 83
Figure 5-8: AHIMS Search 86
Figure 5-9: Areas of Sensitivity 88
Figure 5-10: Non-Aboriginal Heritage Items 93
Figure 5-11: Proposed Transport Routes 97
Figure 5-12: Overhead Line Cross-Section 100

Glossary

Term	Meaning
Aboriginal heritage	Any deposit, object, place or material evidence relating to Aboriginal habitation or places having significance to Aboriginal culture as declared by the Minister which is protected under the NPW Act and EPBC Act
AHD	Australian Height Datum
AHIP	Aboriginal Heritage Impact Permit
ANO	Authorised Network Operator
ASS	Acid sulphate soils: are naturally occurring sediments and soils containing iron sulphides (principally pyrite) and/or their precursors or oxidation products. This includes Actual and Potential acid sulfate soils. Both can be found within the same soil profile
Blue Book	*Managing Urban Stormwater – Soils and Construction* (Landcom, 2004)
BCA	*Building Code of Australia* (Australian Building Codes Board, 2011): is Volumes One and Two of the National Construction Code (NCC) which is an initiative of the Council of Australian Governments developed to incorporate all on-site construction requirements into a single code. The BCA is produced and maintained by the Australian Building Codes Board on behalf of the Australian Government and State and Territory Governments. The BCA has been given the status of building regulations by all States and Territories
CEMP	Construction Environmental Management Plan
Classified road	The *Roads Act 1993* provides for roads to be classified as Freeways, Controlled Access Roads, Tollways, State Highways, Main Roads, Secondary Roads, Tourist Roads, Transitways and State Works
Climate Change	Describes both changed average climatic conditions, such as increased temperature and lower average rainfall, as well as changes in the patterns of extreme events, including increased frequency and intensity of storms
CPESC	Certified Professional in Erosion and Sediment Control
cm	centimetre
DA	Development Application
Determining authority	Minister or public authority by or on whose behalf the activity is or is to be carried out or any Minister or public authority whose approval is required in order to enable the activity to be carried out
DPHI	Department of Planning, Housing, and Infrastructure
DPI	Department of Primary Industries (NSW)
Easement	A collection of rights allowing an entity to undertake certain activities. Easements acquired by Ausgrid are created by a lease, a transfer granting easement, an instrument registered with a deposited plan, or by acquisition
EEC	Endangered Ecological Community: an assemblage of plant species that is recognisably different from other communities due to differences in species present and structure. The species form complex interactions with not only other species, but also elements of the landscape including underlying geology, aspect and altitude, and external influences such as fire frequency. Many ecological communities have limited natural distributions and are vulnerable to change, while others historically occurred over a wider area and are threatened by changes due to broad scale clearing, fragmentation, invasion by weeds, fire frequency or hydrological regime
EIS	Environmental Impact Statement

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Term	Meaning
Embodied energy	Embodied energy corresponds to the energy consumed by all of the processes associated with the production of building materials and components
Embodied carbon	Embodied carbon includes the release of greenhouse gases during chemical processes and through other human-induced 'natural' releases into the atmosphere
Embodied water	Embodied water is the volume of water required to produce a commodity or service
Emergency works	Works for the purpose of maintaining or restoring infrastructure facilities or equipment in order to ensure public safety or to protect buildings or the environment due to: • a sudden natural event, including a storm, flood, tree fall, bushfire, land slip or coastal inundation, or • accident, equipment failure or structural collapse, or • damage caused by vandalism or arson provided the works involve no greater disturbance to soil or vegetation than necessary and are carried out in accordance with all applicable requirements of the Blue Book
EMF	Electric and Magnetic Fields: are part of the natural environment and are also produced wherever electricity or electrical equipment is in use. Power lines, electrical wiring, household appliances and electrical equipment all produce EMF. The electric field is proportional to the voltage and remains constant. The magnetic field is proportional to the load and varies continually depending on the time of day, week and year. As electric fields are naturally shielded, the electricity network generally contributes very little to the electrical fields measured inside a home or office building. For this reason most discussion on EMF usually focuses on magnetic fields
Environmental impact	Any change in the environment whether adverse or beneficial, wholly or partially resulting from organisation activities, products or services
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW). Provides the legislative framework for land use planning and development assessment in NSW
EP&A Regulations	*Environmental Planning and Assessment Regulation 2021*
EPA	Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth). Provides for the protection of the environment, especially matters of national environmental significance, and provides a national assessment and approvals process.
EPI	Environmental Planning Instruments: made under Part 3 of the EP&A Act.
ES Act	*Electricity Supply Act 1995* (NSW)
ESCP	Erosion and Sediment Control Plan
ESD	Ecologically sustainable development is development which uses, conserves and enhances the resources of the community so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future, can be increased
Flood liable land	Land that is susceptible to flooding by the probable maximum flood event, identified in accordance with the principles set out in the manual entitled *Floodplain Development Manual: the management of flood liable land* (NSW Government, 2005)
GHG	Greenhouse Gas
Ha	hectare
Hz	hertz

Term	Meaning
ICNG	*Interim Construction Noise Guideline (DECC, 2009)*
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IECA	International Erosion Control Association
ISO	International Organization for Standardization
kg	kilogram
kV	kilovolts
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan: a type of EPI made under Part 3 of the EP&A Act
LGA	Local Government Area
Likelihood	A qualitative description of probability or frequency
Local heritage item	A place, building, work, relic, tree, archaeological site or Aboriginal object that is identified as a heritage item (or by a similar description) in a local or regional environmental plan; or an item of local heritage significance, as defined by the *Heritage Act 1977*, that is the subject of an interim heritage order in force under that Act or is listed as an item of local heritage significance in the State Heritage Inventory under that Act
m	metre
m^2	metres squared
m^3	metres cubed
mm	millimetre
mG	milligauss
MVA	mega volt amps
MNES	Matters of national environmental significance
NHMRC	National Health and Medical Research Council
NIEHS	National Institute of Environmental Health Sciences
Non-Aboriginal heritage	Any deposit, object or material evidence which relates to the settlement of NSW, not being Aboriginal settlement, with local or state significance under the *Heritage Act 1977*
NPW Act	*National Parks and Wildlife Act 1974*
NPWS	National Parks and Wildlife Service
NRPB	National Radiation Protection Board
OCPs	Organochlorine pesticides
OEMP	operation environmental management plan
PAH	Polycyclic aromatic hydrocarbon
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
Principal contractor	Work Cover defines a principal contractor as a person conducting a business or undertaking (PCBU – the new term that includes employers) that commissions a construction project. A construction project can only have one principal contractor at any specific time. A principal contractor with management or control of a workplace must: • manage risks associated with the construction work • secure the workplace so unauthorised persons cannot enter • comply with all safe work method statement (SWMS) requirements for high-risk construction work
Proponent	The person proposing to carry out the activity, and includes any person taken to be the proponent of the activity by virtue of Section 5.3 of the EP&A Act

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Term	Meaning
Ramsar wetland	An area designated under Article 2 of the Convention on Wetlands (Ramsar, Iran, 1971) or declared by the Commonwealth Minister for the Environment under the EPBC Act
REF	review of environmental factors
Road	Includes the airspace above the surface of the road, the soil beneath the surface of the road and any bridge, tunnel, causeway, road-ferry, ford or other work or structure forming part of the road. The road reserve is inclusive of the carriageway and the footpath
Roadwork	Includes any kind of work, building or structure (such as roadway, footway, bridge, tunnel, road-ferry, rest area, transit way station or service centre or rail infrastructure) that is constructed, installed or relocated in the vicinity of a road for the purpose of facilitating the use of the road as a road, the regulation of traffic on the road or the carriage of utility services across the road, but does not include a traffic control facility. Carry out road work includes any activity in connection with the construction, erection, installation, maintenance, repair, removal or replacement of a road work
SANSW	Subsidence Advisory NSW
SEPP	State Environmental Planning Policy: a type of EIP made under Part 3 of the EP&A Act
SHR	State Heritage Register
SSD	State Significant Development
SSI	State Significant Infrastructure
TCP	traffic control plan
T&I SEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021
TfNSW	Transport for NSW
TMP	traffic management plan
TPH	Total petroleum hydrocarbons
TPZ	Tree Protection Zone: the radius of the TPZ equals 12 times the diameter of the trunk at 1.4 m above the ground. For palms and ferns, the TPZ radius should not be less than 1m outside the drip zone
TWA	time weighted average
Typical Daily Maximum Load	The electricity loading which is not exceeded more than 15% of the time for that year. Also referred to as the 85th Percentile.
UGOH	underground overhead: a structure which facilitates the transition of underground cabling to aerial construction
V	volt: the unit of measure for voltage which is the pressure that electricity is pushed through the wire
Vibration	Mechanical oscillations about an equilibrium point. Vibration can be caused by many different external sources, including industrial, construction and transportation activities. The vibration may be continuous (with magnitudes varying or remaining constant with time), impulsive (such as in shocks) or intermittent (with the magnitude of each event being either constant or varying with time)
WH&S	Workplace Health & Safety
WHO	World Health Organisation

Executive Summary

The Proposed Activity

YZ Consulting on behalf of Maven Renewable Energy Pty Ltd (Maven) engaged Umwelt to prepare this Review of Environmental Factors (REF for a proposed 66 kilovolt (kV) overhead line associated with the Upper Hunter Energy Park (UHEP) (hereafter 'the Proposed Activity'), located in Scone, New South Wales.

The 66 kV overhead line will be constructed by Maven on behalf of Ausgrid, utilising Ausgrid's registration as an Authorised Network Operator (ANO) in NSW, and powers as a public consent authority, under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Proposed Activity includes the construction, operation and maintenance of an overhead 66 kV line connecting from the UHEP to the existing Scone substation located in Lot 403 DP1119120. In addition, works will include relocating parts of an existing 11kV overhead line to run underneath the proposed 66kV overhead line for a length of 942 m, as agreed with the Upper Hunter Shire Council (Council).

An easement will be created in order to accommodate the proposed activity. The easement is proposed to have a width of up to 30 m, being up to 15 m on either side of the overhead line except for 520 m on Moobi Ridge where the easement is proposed to be 36.18 m (18.09 m either side) to accommodate the steeper terrain. Disturbance will be required associated with the installation of the poles and line to establish the easement and access; vegetation clearing and pruning would also be required.

The 66kV overhead line would be attached to approximately 20 m to 55 m high steel poles. Each pole would be spaced at a distance ranging from approximately 40 m to 520 m. All poles would be installed on direct embedment foundations around 950 mm to 1,500 mm in diameter and of varying lengths to an average depth of 3 m. The steel poles would be anchored using embedded bolts or base plates, depending on site-specific conditions.

Construction of the Proposed Activity would be expected to commence in mid-2026, with commissioning expected by the end of 2026 subject to assessment and approval.

Background and Need

In 2010, Upper Hunter Energy Park (UHEP) (previously known as Kyoto Energy Park) received approval from the NSW Minister for Planning under Project Approval 06_0055 for construction and operation of a renewable energy generation facility and associated infrastructure with a maximum generation capacity of up to 113 MW.

To connect the Project to the electricity grid, the Project approval also authorised two options for an overhead line connection to the existing electricity grid, comprising:

- 66 kV option to the existing Scone substation located in the Upper Hunter Shire Local Government Area (LGA).
- 132 kV option to the existing substation at Muswellbrook located in the Upper Hunter Shire and Muswellbrook Shire LGAs.

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Since approval of the UHEP, ongoing investigations have identified a requirement to provide an alternate connection alignment. Of the approved routes, one has since been deemed not practical due to its length (connecting in Muswellbrook), and the other was planned before the new Scone Bypass was proposed, making that route no longer viable. The proposed alignment aims to reduce the distance between the UHEP and the nearest connection point, minimise the impact on vegetation and agricultural land uses, and reduce the visual impact on neighbours.

Proposed Activity Alternatives

The alignment of the Proposed Activity resulted from preliminary constraints investigations and fieldwork conducted to assess the potential heritage and biodiversity constraints of the Proposed Activity Area. Alternatives considered included a preliminary route option and then the preferred option (as assessed as the Proposed Activity in this REF).

Following the selection of the chosen route, this REF has assessed the Proposed Activity to ascertain whether there would be a significant impact upon the environment to meet the requirements of Section 5.5 of the *Environmental Planning and Assessment Act 1979* and Clause 171 of the *Environmental Planning and Assessment Regulation 2000*. Proposed Activity alternatives are described in detail in **Section 3**.

Statutory Planning and Legislation

This REF has been prepared in accordance with Part 5 of the *Environmental Planning and Assessment Act 1979* and Clause 171 of the Environmental Planning and Assessment Regulation 2000. Additional key legislation includes the *State Environmental Planning Policy (Transport and Infrastructure) 2021*, *Electricity Supply Act 1995* (ES ACT) and *Protection of the Environment Operations Act 1997* (POEO Act).

Other approvals / permits / licences required for the Proposed Activity include a road occupancy licence under Section 138 of *Roads Act 1993* for any road obstructions or closures required during construction of the Proposed Activity.

Further information on the legislation applicable to this Proposed Activity is in **Section 4** and the consultation undertaken is in **Section 2**.

Environmental Impact Assessment

This REF investigates the potential environmental impacts associated with the construction, operation and maintenance of the Proposed Activity.

Key issues associated with the Proposed Activity were identified as potential biodiversity and heritage impacts. A number of specialist assessments were undertaken to assist in assessing the environmental impacts (**Section 5**). The assessments undertaken concluded that the Proposed Activity is unlikely to have a significant impact on environmental factors, summarised below in **Table ES.1**.

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Table ES.1: Summary of Environmental Impacts

Aspect	Summary of Assessment Outcomes
Land Use	Land use would temporarily be affected during construction of the Proposed Activity; however, construction-related impacts would be minor, localised and short-term. The Proposed Activity is located within land currently utilised for agricultural or recreational purposes, which provide existing access routes and established pathways for operational maintenance. Where access is required via new and upgrading existing access tracks, potential impacts would be appropriately managed with the specific construction controls.
Climate Change	The Proposed Activity considers sea level rise and flood-prone land, and the siting of infrastructure complies with all relevant Network Standards.
EMF	EMF levels are within the ICNIRP 2010 Public Reference Levels and there are no further ways to reduce exposure consistent with prudent avoidance.
Noise and Vibration	The construction work required for this Proposed Activity would be highly transitory in nature. It is unlikely that construction works would occur for greater than a three-week period in any given location. The Proposed Activity would not involve out of hours work without meeting the notification/respite requirements as outlined in this assessment. Potential impacts would be appropriately managed with the specific construction controls.
Air Quality	The Proposed Activity would manage construction activities to minimise dust leaving the worksite and would not generate offensive odours/fumes.
Water Quality	Water quality in the Proposed Activity Area could be affected by spills of hydraulic oil and fuels from equipment or vehicles. Quantities of these products would be kept to a minimum and would be stored in a suitably bunded and covered area. Adequate storage and refuelling controls would be installed to mitigate impacts. Plant and equipment would also be maintained to minimise the potential for leakages. The Proposed Activity may involve discharges of accumulated water; however, potential impacts would be appropriately managed with the specific construction controls. There will be no groundwater extraction. Appropriate construction erosion and sediment controls would be implemented to activities to minimise sediment leaving the worksite. The Proposed Activity will not result in the contamination of soil, surface or groundwater.
Waste	Waste generated by the Proposed Activity would be classified, handled, transported, stored, tracked and disposed of in accordance with relevant guidelines, procedures and existing licences.

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Aspect	Summary of Assessment Outcomes
Flora and Fauna	The Proposed Activity would require the removal of approximately 18.62 ha of native vegetation; however, due to the narrow nature of the Proposed Activity Area and the quality of vegetation, the proposed works would not increase fragmentation, and fauna are likely to utilise the remaining vegetation. The Proposed Activity would not remove any limiting habitat for any species. The Proposed Activity is unlikely to have a significant impact on threatened biodiversity and their habitats. A Species Impact Statement (NSW) is not considered necessary for any threatened biodiversity as a result of the Project. The significance of the impact of a proposed action on Matters of National Environmental Significance (MNES) can be determined through self-assessment using Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (DoE, 2013). A 'Referral' under the EPBC Act is required for proposed actions that may affect nationally listed threatened species, threatened ecological communities and migratory species. Assessments of significance have been completed for the threatened entities listed under the EPBC Act that are considered to have a moderate or greater likelihood of occurrence within the Proposed Activity Area. The assessments have been provided in Appendix 2. The assessments concluded the Proposed Activity is not considered likely to significantly impact any TECs, threatened species or their habitats listed under the EPBC Act.
Bushfire	The Proposed Activity is within bushfire-prone land. Potential impacts would be appropriately managed with the specific construction controls and would comply with: Design requirements in relevant Network Standards such as NS187 Passive fire mitigation design of substations. Hot works requirements in DG 33 Hotworks and total fire bans.
Aboriginal Heritage	There are no known Aboriginal heritage sites located within the Proposed Activity Area. Control measures have been proposed to manage sensitive areas.
Non-Aboriginal Heritage	There is one non-aboriginal heritage item (identified as the 'Invermein' Property) mapped as within the Proposed Activity Area; however, the Proposed Activity is not located within the property Lot associated with this heritage item. The Proposed Activity has considered all high aesthetic, scenic, natural or recreational values and there is no unreasonable impact to these areas. All reasonable ways to further reduce visual impacts have been considered.
Roads and Traffic	Works on a classified road would comply with the relevant approval and road occupancy licence (ROL) requirements. No other significant access corridors would be restricted. Affected residences and businesses would be consulted about the schedule of work. The Proposed Activity would not prevent access or mobility for people with disabilities.
Socio-economic	The Proposed Activity is not likely to significantly affect the environment in relation to social or economic impact and due to the isolated nature of the Proposed Activity, and short nature of the proposed construction phase. Social impacts associated with noise, visual aesthetics and traffic have been assessed in detail in this REF and a Construction Environment Management Plan (CEMP) will be prepared which will include safeguards and management measures included in this REF to reduce potential impacts on the surrounding community.

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Aspect	Summary of Assessment Outcomes
Cumulative impacts	Due to the isolated nature of the Proposed Activity and short nature of the proposed construction phase, no cumulative environmental impacts have been predicted in preparation of the REF. Cumulative impacts from other projects/Proposed Activities within the area would be effectively managed with the specific construction controls.

Mitigation measures have been identified to address the impacts and to minimise any residual issues and are summarised in **Section 8**.

Proposed Activity Justification and Conclusions

The Proposed Activity is required to provide a viable connection for the approved UHEP Project. The Project, once connected, will assist with meeting Ausgrid's obligations in terms of safety, reliability, quality and continuity of supply of electricity.

On the basis of this REF, it is concluded that the Proposed Activity:

- is unlikely to have an impact on environmental aspects assessed and the implementation of management and mitigation measures will ensure compliance with all relevant criteria and further minimise and avoid environmental impacts
- is not likely to significantly affect the environment (including critical habitat) or threatened species, populations or ecological communities, or their habitats
- is not on land that is, or is a part of, critical habitat or a wilderness area
- is not likely to have a significant impact on matters of national environmental significance, or a significant impact on the environment (for actions on Commonwealth land) or a significant impact on the environment on Commonwealth land (for actions outside Commonwealth land).

In making these conclusions, consideration of environmental significance was made with regard to Clause 171 of the *Environmental Planning and Assessment Regulation 2000* and *the Code of Practice for Authorised Network Operators*[1].

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1 Introduction

1.1 Purpose of the Review of Environmental Factors

The purpose of this review of environmental factors (REF) is to assess the potential environmental impacts of the Proposed Activity and determine appropriate mitigation measures to reduce those impacts. The findings of this REF would be considered when assessing:

- whether the Proposed Activity is likely to have a significant impact on the environment and, therefore, the necessity for further environmental assessment as described under Part 5, Section 5.5 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act)
- the significance of any impact on threatened species as defined by the NSW *Biodiversity Conservation Act 2016*, and the requirement for a species impact statement (SIS)
- the potential for the Proposed Activity to significantly impact a matter of national environmental significance or Commonwealth land and the need to make a referral to the Commonwealth Minister for the Environment in accordance with the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Ausgrid's determination of the Proposed Activity under Part 5 of the EP&A Act would be prepared separately to this REF.

1.2 The Proposed Activity

This REF assesses the Proposed Activity to construct, operate and maintain a 66 kilovolt (kV) overhead power line connecting from the UHEP to the existing Scone substation located in Lot 403 DP1119120.

The Proposed Activity includes an easement. The easement is proposed to have a width up to 30 m, being up to 15 m on either side of the overhead line, except for 520 m on Moobi Ridge where the easement is proposed to be 36.18 m (18.09 m either side) to accommodate the steeper terrain. Disturbance will be required associated with the installation of the poles and line to establish the easement; vegetation clearing and pruning would also be required.

The 66 kV overhead line would be attached to approximately 20 m to 55 m high steel poles. Each pole would be spaced at a distance ranging from approximately 40 m to 520 m. All poles would be installed on direct embedment foundations around 950 mm to 1,500 mm in diameter and of varying lengths to an average depth of 3 m. The steel poles would be anchored using embedded bolts or base plates, depending on site-specific conditions.

Access will be provided via existing tracks and cleared areas managed through the use of geotextile fabric and/or ground protection matts, where required. Upgrading of an existing farm track will be required within Lot 76 and 71 DP750950 on Moobi Ridge to allow construction access in steeper terrain. The access track proposed includes a new access track off of the existing farm access track to be upgraded for larger vehicles which will be established if required. Otherwise, access to the Proposed Activity for construction and operational maintenance will utilise existing agricultural lands that are regularly accessed by landowners for farming operations, equipment transport, and livestock management, providing established pathways.

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Work pads required for construction activities will be located within the easement and within cleared agricultural land, and will meet Ausgrid's safety and clearance requirements, ensuring that construction and maintenance crews can access poles without risk to personnel or equipment. The construction work pads will form a cleared, level surface, gravel will be used to level the surface where required.

1.2.1 Proposed Activity Location

The UHEP is located approximately 10 km west of Scone in the Upper Hunter Shire Local Government Area (LGA) in NSW. The Proposed Activity Area is approximately 13 km long and comprises the alignment for the overhead line, including the up to 30m easement from the UHEP to connect to the existing electricity grid at Scone substation shown in **Figure 1-1**.

For this assessment, the Proposed Activity Area is defined as the land within the easement between the UHEP and Scone, up to 17 m on either side of the alignment shown in **Figure 1-1**. The alignment runs from Lot 31 DP750939 (within the UHEP Project Area) and continues for a length of 13 km east towards Scone Substation (located within Lot 403 DP1119120). All proposed infrastructure will be contained within the associated easement and construction activities will be conducted within the proposed access track and associated easement.

The lots associated with the Proposed Activity Area are provided in **Table 1-1**. All lots are under freehold tenure.

Table 1-1: Proposed Activity Location Overview

Lot Number	Deposited Plan
31	DP750939
30	DP750939
68	DP750950
77	DP750950
75	DP750950
71	DP750950
74	DP750950
76	DP750950
156	DP750931
1	DP1190322
102	DP1170558
1	DP1138706
111	DP789325
910	DP1152423
911	DP1152423
101	DP1093507
16	DP1228077
1	DP903286

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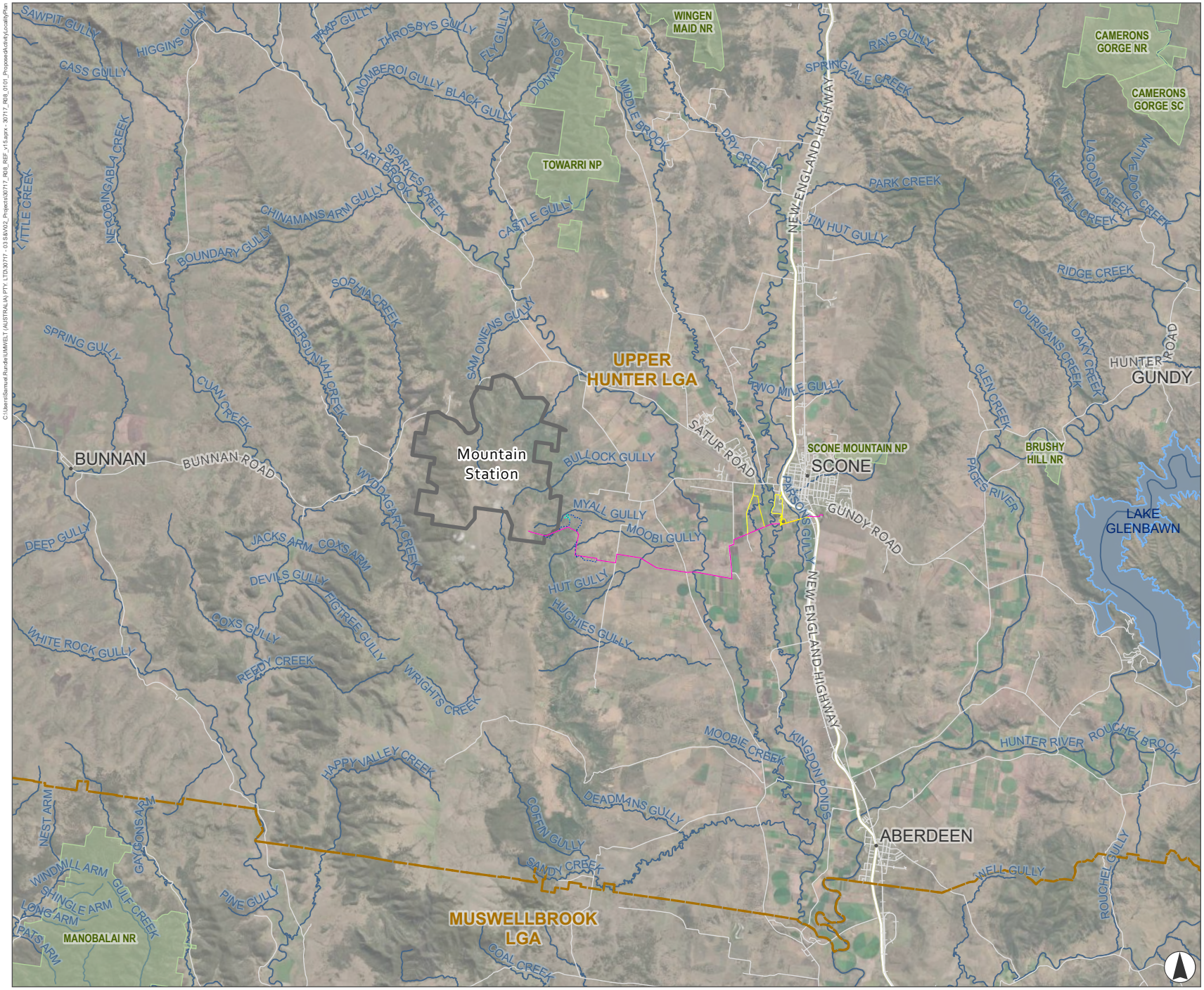


FIGURE 1.1

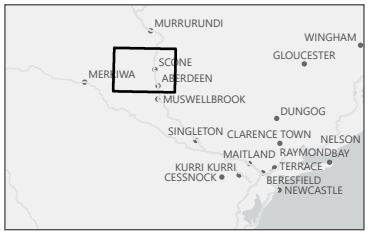
Proposed Activity Locality Plan

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Railway
- Highway
- Main / Local Roads
- Watercourse
- Proposed 66kV Power Line Route
- Existing 11kV line
- Local Government Area
- Reserve
- Waterbody

Proposed Access Track – New

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New



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Kilometres

Scale 1:190,000 at A4
GDA2020 MGA Zone 56

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1.2.2 Proposed Activity Objectives

The objective of the Proposed Activity is to construct, operate and maintain a 66 kV overhead line to connect the UHEP to the existing Ausgrid infrastructure contributing to electricity supply and reliability for the Upper Hunter Region. This meets Ausgrid's licensing requirements to provide a satisfactory standard of supply to consumers and cater for forecast future load growth.

Other objectives of the Proposed Activity are to:

- provide a viable connection for the UHEP Project
- comply with relevant laws and standards
- meet future increasing demand for electricity in the Upper Hunter area
- meet Ausgrid's duty of care
- meet Ausgrid's obligations to plan for and supply reliable electricity
- maximise social, economic and environmental benefits.

1.3 Background and Need

In 2010, UHEP (previously known as Kyoto Energy Park) received approval from the NSW Minister for Planning under Project Approval 06_0055 for construction and operation of a renewable energy generation facility and associated infrastructure with a maximum generation capacity of up to 113 MW.

To connect the Project to the electricity grid, the Project approval also authorised two options for an overhead line connection to the existing electricity grid, comprising:

- 66 kV option to the existing Scone substation located in the Upper Hunter Shire LGA.
- 132 kV option to an existing substation at Muswellbrook extending across the Upper Hunter Shire and Muswellbrook Shire LGAs.

Since approval of the Project, ongoing investigations have identified a requirement provide an alternate connection for the UHEP project. Of the approved connection alignments, one has since been deemed not practical due to its length (connecting in Muswellbrook), and the other was planned before the new Scone Bypass was proposed, making the alignment no longer viable. Maven Renewable Energy (the Proponent) is now proposing a revised connection alignment which aims to reduce the distance between the UHEP and the nearest connection point, minimise the impact on vegetation and agricultural land uses, and reduce the visual impact on neighbours. Maven Renewables has engaged with YZ Consulting to coordinate the suite of development activities to create a construction-ready project.

The proposed alignment will have an easement generally 30 m wide except for 520 m which will have a width of 36.18 m as agreed with Ausgrid and connect to the existing distribution network in Scone. The proposed alignment largely follows existing roads and property boundaries, minimising impacts on other land uses and residences.

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1.4 Related Projects

Ausgrid projects typically have related projects and flow on activities due to the interconnected nature of the network. These related projects would be subject to separate environmental impact assessments due to factors such as differences in funding, construction timeframes and design.

However, there are no other Ausgrid projects associated with this Proposed Activity.

Known material cumulative impacts associated with other projects known to be occurring in the Scone LGA are addressed in **Section 5.17**.

1.5 Study Area

The study area (herein referred to as the Proposed Activity Area) is the environment that could be directly or indirectly affected by the Proposed Activity. For this REF, the Proposed Activity Area is defined as the proposed alignment including the associated easement of generally up to 30 m wide (up to 15 m on either side of the alignment) and up to 36.18 m wide on steep terrain.

Some potential impacts do not have clear physical boundaries. These are assessed on a broader scale and include land use, climate change, air quality, hydrology, waste disposal, fauna (including migratory birds), visual aesthetics, social and economic impacts.

The following buffer distances beyond the Proposed Activity Area boundary were also considered:

- 10 km for matters of national environmental significance (NES)
- 140 m for bushfire impacts
- 30 m easement for Aboriginal heritage items and native title areas

The Proposed Activity Area and surrounds are described in **Section 5.1**. **Figure 1-2** shows the boundary of the Proposed Activity Area for direct impacts assessed in this REF.

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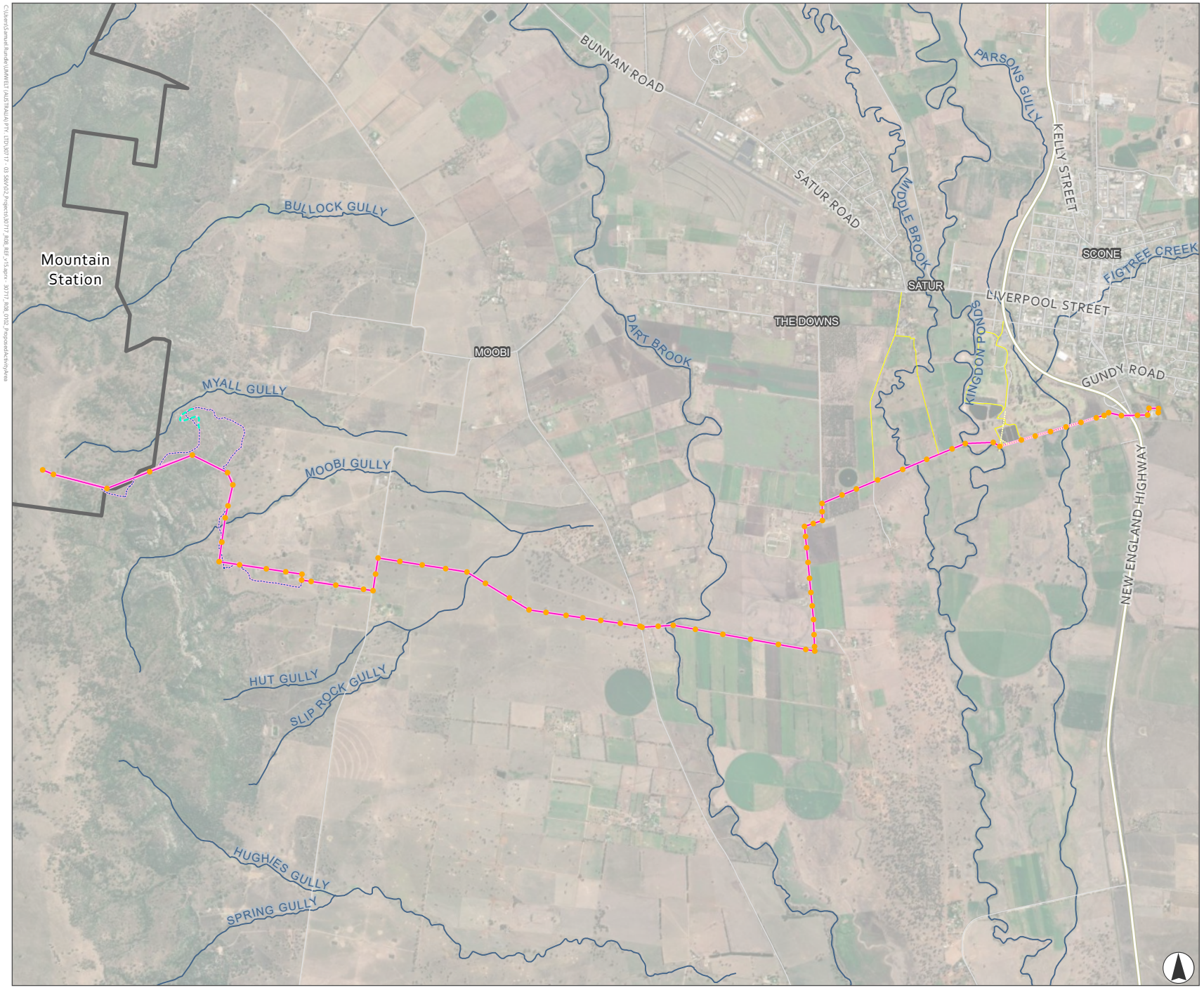
FIGURE 1.2
Proposed Activity Area

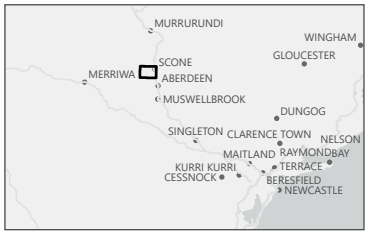


Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Proposed Pole locations
- Highway
- Main / Local Roads
- Watercourse
- Proposed 66kV Power Line Route

Proposed Access Track – New

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New



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1.6 Description of the Proposed Activity

1.6.1 Overview

The Proposed Activity is for the construction, operation and maintenance of an overhead 66 kV overhead line connecting the UHEP to the existing Scone substation located in Lot 403 DP1119120.

The Proposed Activity includes relocating part of an existing 11 kV overhead line to run underneath the proposed 66kV overhead line for a length of 690 m, as agreed with the Upper Hunter Shire Council (Council).

The following sections detail the physical structures (**Section 1.7**), construction activities (**Section 1.8**) and operation and maintenance activities (**Section 1.9**) associated with the Proposed Activity.

Figure 1-2 shows the proposed alignment.

1.6.2 Easements

Easements, leases, licences and rights of way / carriageway over land are established to protect the future security and tenure of Ausgrid's assets including substations and distribution lines of all voltages, both overhead and underground.

The easement for the Proposed Activity has a width of up to 30 m, being up to 15 m to either side of the alignment. The following exceptions and easement limitations have been developed during landowner consultation:

- For the part of the alignment within Lot 1 DP 1138706 , the easement is 20 m wide throughout, being 10 m to either side of the overhead line as the Property adjoins the northern boundary of Lot 2 in DP 1138706, a corridor having a width of 20 m does not extend into the Property more than 30 m from the northern boundary of the adjoining lot and the Property as requested by the landowner.

- For the part of the alignment within Lot 111 DP 789325, the easement is 30 m wide, being 15 m to either side of the overhead line; but not further into the property than 30 m immediately adjacent to and contiguous with the inner boundary of the tree line that runs along the northern boundary of this Lot.

- For the part of the alignment within Lot 16 DP1228077, the easement is 30 m wide, being 15 m to either side of the overhead line along the straight-line boundary fence running northeast from the sewage treatment plant, the easement width will run no more than 30 m from the southern fence of the Lot boundary line except with prior written consent of Council (not to be unreasonably withheld).

- For the part of the alignment (approximately 520 m) within Lots 30 and 31 DP750939 and Lots 68, 71, 75 and 77 DP750950, the easement is 36.18 m wide, being 18.09 m either side of the overhead line to accommodate the steeper terrain and larger span distances required.

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1.7 Physical Structures

1.7.1 Overhead Power Lines

The Proposed Activity consists of one overhead 66 kV line (see **Figure 1-2** for proposed alignment). The overhead line would have three conductor wires which would transfer electricity at 66 kV and one overhead earth wire (OHEW) for lightning protection and communication.

The overhead line would be physically attached to approximately 20 m to 55 m high poles made from steel. There are 89 poles within the alignment. Each pole would be spaced at a distance ranging from approximately 40 m to 520 m.

1.7.2 Utilities

Existing electrical infrastructure consists of 66 kV and low voltage overhead lines running along the roadside verge of Moobi Road and Cliftlands Road, which will be intercepted by the Proposed Activity and an 11 kV overhead line traversing from Lot 16 DP1228077 to the existing substation in Lot 403 DP1119120. The existing 11 kV overhead line located within Lot 16 DP1228077 is proposed to be removed and relocated underneath the proposed 66 kV overhead line for a length of 690 m, as agreed with Council.

There is an existing drainage line which traverses under Cliftlands Road. The channel transecting this location along the alignment receives flows from an unnamed tributary which connects to Dart Brook approximately 7km south. Further information on the local drainage channels and surface water interactions is provided in **Section 5.6**. The culverts were inspected for any sign of biodiversity habitat and were described as being blocked by existing vegetation (further information on the assessment of potential habitats is provided in **Section 5.10**).

1.8 Construction Activities

The detailed construction methodology would be determined prior to the construction stage of the Proposed Activity. The works would be undertaken by a Contractor, who would be responsible for detailed design and planning all construction processes, including scheduling and overall timing of works. The specifications included in the competitive tendering process would include a requirement to comply with the scope and mitigation measures detailed in this REF. The mitigation measures detailed in this REF must be included in the Contractor's construction environmental management plan (CEMP).

The anticipated sequence of works for the Proposed Activity would include:

- survey work
- establishing structures such as fencing and hoarding
- installing pre-construction mitigation measures, such as erosion, sediment and water quality controls, fencing sensitive areas
- relocating utilities, services and signage
- clearing vegetation where it cannot be avoided along the alignment

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- establishing a construction compound and stockpile sites
- establishing temporary construction facilities
- establishing proposed access via upgrading existing farm tracks
- establishing work pads within the easement
- establishing a new access track on steep terrain of the Moobi ridgeline
- erecting 81 new steel poles
- stringing the overhead line between erected steel poles
- storing and stockpiling equipment
- testing and commissioning
- decommissioning and moving the existing 11 kV overhead line to be located with the Proposed Activity
- rehabilitating topsoil and re-vegetation
- restoring the site (including general site cleanup and removing site compounds, temporary construction facilities, and temporary environmental controls).

1.8.1 Construction Access, Parking, Site Compounds and Stockpiles

The construction works would be transient in nature and, therefore, construction access during work would be restricted to and from the designated construction area within the public roadway. A traffic management plan (TMP) would be prepared prior to commencement of work and would allow for site access. Traffic routes to and from the Proposed Activity would be noted in the TMP.

Each construction area would require a site compound containing basic amenities, plant and material storage areas. These compound areas would be strategically located to minimise the number of times relocation is required. Siting of a compound area would involve consultation with the neighbouring properties, maximising separation from sensitive receivers and protection of surrounding infrastructure and environment (including trees) whilst maintaining access to private properties. The location of the construction compounds will be confirmed pre-construction and following consultation with landholders. The construction compounds will be located in areas where no vegetation clearing is required.

Each construction area would be inclusive of traffic management, equipment storage (e.g. poles, pole dressings (e.g. cross arms, insulators), conductor/cable and waste bins etc.) and safety barriers. The typical width of the construction area would be approximately two lanes of traffic wide depending on the location.

Prior to the commencement of works, a pre-construction survey would be undertaken for all nearby Council assets and public infrastructure, e.g. kerbs, footpaths, fences. This would likely be in the form of digital photographs.

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Surface materials such as grass or vegetation would be removed to expose the underlying ground for pole locations. Generally, soil to an approximate width and depth of 1,400 mm would be removed and where unsuitable for backfill would be transported and disposed of off-site. Any spoil requiring on-site storage would be subject to the controls in the CEMP and the conditions of this REF.

Reinstatement of the affected areas would be undertaken in consultation with the relevant authority (e.g. Council and Transport for NSW (TfNSW)).

Access to the construction area would be provided by existing roads and property access points. Notice would be given to property owners where access to private property is required, and no work would occur without consultation with property owners.

Access will be provided via existing tracks and cleared areas managed through the use of geotextile fabric and/or ground protection matts, where required. Within the easement, an access track is required, being 4.5 m to 6 m wide, suitable for the crossing of boring equipment for pole installation, erectors and medium-sized trucks for stringing lines and installing poles. This track would also act as an access nib for new poles to create a safe work and manoeuvring area. The nibs are required to provide an all-weather access to each proposed pole location. The temporary access will be suitable to light vehicles, boring equipment for pole installation, erectors and medium-sized trucks for stringing lines and installing poles, and to create a safe work and manoeuvring area. No major works (e.g. removal of topsoil, earthworks, import or soils for fill) are anticipated to be required for this temporary access.

Upgrades to existing access tracks is required to access the Proposed Activity Area on steep terrain. One new access track will be required to access construction on steep terrain as shown on Figure 1-2. The proposed upgraded access track follows an existing track within Lots 30 and 31 DP750939 and Lots 68, 71, 75 and 77 DP750950. The upgrades to the existing access track will require trimming and/or removing trees and laying of gravel to create a corridor for vehicle access, Other major works such as removal of topsoil and earthworks are not required. The new access track is proposed for larger vehicles and will be established if required.

1.8.2 Construction Fencing

Temporary construction fencing would be placed around the construction area and site compound, both to secure the area and to ensure that the sensitive areas found as described in **Section 5.10** and **Section 5.12** are not impacted during construction works.

During construction, signage would be displayed in accordance with WH&S Regulations for construction areas. This would include danger and protective equipment signs.

1.8.3 Installation of Overhead Power Lines

The proposed 13 km 66 kV overhead line would be constructed within the proposed easement that is 30 m wide for 8.6 km of its length with approximately 4.9 km of the easement having a variation in width as provided in **Section 1.6.2**.

All steel poles would be installed on direct embedment foundations around 950 mm to 1500 mm in diameter and of varying lengths to an average depth of 3 m. The steel poles would be anchored using embedded bolts or base plates, depending on site-specific conditions.

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Once the poles are erected, each pole would be dressed, including insulators and brackets. Electricity conductors would be raised and pulled on to poles using specialised machinery.

Aerial stringing will be undertaken over the state-classified road network including the New England Highway to avoid interruptions to traffic and impacts to the road reserve.

1.8.4 Vegetation Clearing

Vegetation clearing would be required within a total area of 49.96 ha, this includes an area of 18.62 ha of native vegetation and 31.01 ha of exotic vegetation, and 0.33 ha of roads and infrastructure. This area represents the 15 and 18.09 m buffer on either side of the proposed overhead line to establish and maintain minimum separation distances between the overhead lines and the vegetation. A summary of the clearing required includes:

- Clearing and removing trees and other vegetation within the 5 m either side of the Proposed Activity.
- Clearing and removing trees and underbrush to create a corridor for access on steep terrain.
- Removing underbrush and smaller vegetation to create a clear path for construction equipment along the alignment of the Proposed Activity.
- Trimming branches or other vegetation within the 15 m and 18.09 buffer to ensure canopies do not overhang the Proposed Activity.

Further details and the potential impact on flora and fauna are described in **Section 5.10** and **Appendix 1**.

1.8.5 Temporary Utilities

A temporary portable generator would be installed during construction to supply electricity to the construction works.

1.8.6 Installation of Temporary Environmental Controls

Temporary environmental controls would be installed during the construction phase to mitigate potential environmental issues identified in **Section 5**. Temporary controls for the Proposed Activity to mitigate such issues as noise and sediment would be installed where appropriate. These controls would be removed once construction is complete.

1.8.7 Timing and Working Hours

Subject to assessment and approval, work is expected to commence in mid-2026 and would take approximately 3 months to complete.

Works that would generate audible noise at any sensitive receiver would be undertaken between standard construction hours (7 am and 6 pm Monday to Friday and 8am and 1pm on Saturday). Audible works outside these hours may be undertaken where the following requirements are met:

- the works are emergency works, unplanned or unavoidable and the affected residents have been notified as far as reasonably practicable; or

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- the works fall into one of the following categories and the directly affected residents are provided with a notification letter at least five days prior to the works:
    - the delivery of oversized plant or structures that cannot be undertaken during standard hours
    - maintenance and repair of essential public infrastructure that is unable to occur during standard hours
    - public infrastructure works that shorten the length of the construction phase and are supported by the affected community (this would require community consultation)
    - it is a requirement of a regulatory authority.
- where there is a demonstrated and justified need to operate outside the recommended standard operating hours and this is supported by Ausgrid's Project Manager, Community Relations Section and Environmental Services.

1.8.8 Resources and Equipment

The approximate number of staff employed during the construction phase will be confirmed pre-construction by the construction Contractor. Ongoing maintenance requirements during operation would be undertaken by Ausgrid field personnel and contractors.

The following equipment may be used on site but is not limited to:

- truck-mounted borers and cranes
- backhoe
- trucks for material transport including soil and cable
- elevated work platforms
- mulcher / chipper
- saw cutting machine with vacuum and transport utility
- cable winch (for high voltage)
- compressor
- traffic control vehicles
- fire suppression e.g. personal or equipment/vehicle mounted extinguishers
- power generator
- construction fencing
- dust suppression vehicles
- water tankers
- temporary construction facilities

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- associated minor construction equipment.
- pollution prevention equipment.

The following materials may be required for the Proposed Activity but are not limited to:

- various metals for reinforcement and, fencing, signage, electrical equipment, earth grid, electricity conductors
- steel poles
- imported soil for engineered fill and topsoil (if required)
- energy sources such as fuel and oils
- pollution prevention materials
- concrete and reinforcement.

1.9 Operation and Maintenance Requirements

Once the Proposed Activity is constructed, periodic maintenance would be required consisting of attendance on site by small work groups utilising light vehicles and small to medium plant. The Proposed Activity would not accommodate staff or contractors on a permanent basis; however, access would be undertaken at any time for irregular short-duration works, such as to identify defects and hazards such as damaged components, vandalism, degraded access tracks and reduced safety clearances.

No regular collection of waste is required. All wastes generated during the operational phase on site would be minimal and managed on an ‘as required’ basis.

Likely maintenance and operation activities associated with the Proposed Activity include but are not limited to:

- vegetation trimming to maintain electrical safety clearances and asset protection zones access track maintenance
- unplanned fault and breakdown repairs
- insulator and conductor repair
- pole replacement where pole integrity is reduced
- staff attendance for routine inspection, operation and maintenance activities.

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2 Consultation

2.1 Overview and Engagement Objectives

Consultation defines the processes Ausgrid uses to seek views or provide information about our works and seek community feedback. Consultation can include a range of communication activities such as notification to community members and relevant authorities, community information displays, individual contact with residents and meetings with community and authority representatives. These activities are designed to ensure Ausgrid is aware of potential issues so essential electricity upgrades can be conducted with minimal impact on the local community.

The consultation undertaken as a part of this REF meets the Code of Practice for Authorised Network Operators and was undertaken by YZ Consulting on behalf of Ausgrid. The consultation undertaken has been logged in Appendix 4.

Consultation spans the entire Proposed Activity from the initial concept stage through to construction and as the new infrastructure is brought into service.

In accordance with the Ausgrid Consultation Protocol (Ausgrid, 2017), the objectives for engagement are to:

- Provide advance notice of work so there are no surprises
- Identify and resolve potential issues relating to a project
- Build relationships with neighbours and other stakeholders
- Comply with legislative requirements.

Engagement activities aim to achieve the following as part of the REF process:

- Describe the proposed Activity and its location
- Describe the types of environmental impacts that the proposed activity may have identified from surveys and assessments undertaken to support the REF
- Invite the public to make submissions on the proposed Activity within a period of time ending no earlier than 20 business day from the date of correspondence
- Provide the contact information of a nominated contact person at the Authorised Network Operator (ANO).

2.2 Engagement Activities

2.2.1 Pre-Review of Environmental Factors Preparation

YZ Consulting and Umwelt, on behalf of Maven Renewables and Ausgrid, have consulted with the community during the planning of the Proposed Activity. YZ Consulting's approach has been to nominate the Proposed Activity and seek feedback to allow community members to influence Ausgrid's decision on the final design. YZ Consulting, on behalf of Ausgrid, seeks to balance community feedback with other project considerations in finalising the alignment and the proposed construction program.

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YZ Consulting is undertaking a range of activities to ensure community members are aware of the Proposed Activity and have an opportunity to provide feedback.

Community engagement activities undertaken for this Proposed Activity include:

- Letter box drops to nearby residences
- Letters of notification to relevant government agencies
- Meetings with interested stakeholders
- Meetings with Council and State Government Agencies
- Ongoing communications via Online Website and Newsletter

The mechanisms listed above were used to consult with the following stakeholder groups:

- Host landholders
- Proximal landholders
- Previous host landholders
- State Government Agencies
- Local Government
- Traditional Owners
- Broader Community
- Road Users

A summary of the issues raised during community consultation is contained in **Table 2-1.**

Table 2-1: Community Consultation Issues Summary

Issue	Response
Concerns were raised regarding the lack of local workforce available for construction activities.	As discussed in **Section 5.16** and **Section 5.17**, there are various proximal State Significant Development (SSDs) in the region, which is relevant to the consideration of the capacity and availability of the workforce to construct the Proposed Activity. However, due to the isolated nature of the Proposed Activity and short nature of the proposed construction phase, it is considered that the Proposed Activity will have minor impact on local services and the local community will be only minorly affected. The CEMP to be developed and agreed to by the Principal Construction Contractor will include appropriate management and mitigation measures to appropriately address any associated amenity impacts.
Concerns were raised regarding impacts on agricultural land and potential interruptions to livestock movements.	As discussed in **Section 5.1**, short-term impacts would be experienced during the construction phase; however, once constructed, the Proposed Activity would not restrict access to existing land uses, including recreational space, commercial or industrial development, residential development or the water supply catchment.

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Issue	Response
A comment was received regarding the overhead alignment and design with concerns raised particularly in regard to the sharp corner on Cliftlands Road.	The alignment design has undergone constraints analysis and review to develop the proposed alignment. Following community engagement, changes to the proposed alignment have been made to resolve design concerns and improve the alignment route. This REF has recommended management and mitigation measures to ensure that construction of the Proposed Activity avoids and mitigates impacts.
Concerns were raised about traffic and access to nearby residences during construction of the Proposed Activity.	As discussed in **Section 5.15**, there would be some localised disruption to the community around the immediate construction area in terms of a reduction in pedestrian access and disruption to vehicular traffic and parking during construction works. A Traffic Management Plan (TMP) will be included in the CEMP to manage traffic movement and ensure that alternative routes and access are available to the local community.

During preparation of this revised REF, stakeholder feedback was received from a community member located proximal to the Proposed Activity Area. The stakeholder raised concerns regarding potential impacts from electromagnetic fields, dimensions, spacings and visual appearance of the proposed poles, distance of the powerline from fenceline/property boundary and access tracks for maintenance impacts. These matters have been addressed in **Section 5.3**, **Section 5.14** and **Section 5.15** of this revised REF, with appropriate mitigation measures identified where required. The matters raised were already well understood, and no additional impacts or mitigation measures were identified as a result of this feedback. The stakeholder also raised concerns relating to matters associated with the approved wind farm. These matters are beyond the scope of this REF and are being addressed separately by the wind farm owner. A response to all matters raised was provided to the stakeholder. Further engagement on items relating to the wind farm will continue as required, as part of the broader community and stakeholder engagement plan being implemented.

Following preparation of the REF, the REF was exhibited on the UHEP Project Website to allow interested parties to review the REF and provide submissions. A summary of the submissions received during the exhibition period is provided in **Section 2.5**.

2.2.2 Aboriginal Community

A due diligence assessment has been undertaken in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW 2010) (the Due Diligence Code) (see **Section 5.12** and **Appendix 3**) which indicated that the Proposed Activity is not likely to harm Aboriginal objects or places and, therefore, an Aboriginal Cultural Heritage Assessment and associated consultation has not been undertaken.

However, an expression of interest process in relation to the UHEP Project commenced in February 2025 to restart consultation (with respect to that already undertaken as part of the broader project approvals associated with the approved UHEP Project) with the Aboriginal community. This included notifying Aboriginal people of the Proposed Activity and its relationship to the UHEP Project.

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2.3 Statutory Consultation

Under the ES Act, Ausgrid is required to undertake 40 days notification to the local Council for proposed works (other than routine repairs or maintenance works) so that Council has an opportunity to comment on the Proposed Activity. Consultation with Council has resulted in YZ Consulting, on behalf of Ausgrid, including the relocation of an existing 11 kV overhead line within the Proposed Activity. The existing 11 kV overhead line is currently located within Lot 16 DP1228077 and will be relocated to be underslung with the Proposed Activity as agreed with Council.

Under the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP), Ausgrid is the determining authority for electricity developments under Part 5 of the EP&A Act. While the work undertaken does not require Council consent, the T&I SEPP requires Ausgrid to undertake 21 days notification to public authorities where works may impact upon National Parks, the community or local heritage items per Section 2.15 of the T&I SEPP (see **Table 2-2**).

Specific licences, permits and approvals that require consultation are outlined in **Table 4-1.**

Table 2-2: Consultation Responses

Is consultation required under the T&I SEPP Section 2.15?	**Yes**	**No**
Section 2.13: Is the Proposed Activity located on flood-liable land? If so, will the works change flooding patterns to more than a minor extent?	-	✓
Section 2.15, Clause 2(a): Is the Proposed Activity located adjacent to a national park, nature reserve or other area reserved under the *National Parks and Wildlife Act 1974*, or on land acquired under that Act?	-	✓
Section 2.15, Clause 2(b): Is the Proposed Activity located on land in Zone E1 National Parks and Nature Reserves?	-	✓
Section 2.15, Clause 2(c): Does the Proposed Activity include a fixed or floating structure in or over navigable waters?	-	✓
Section 2.15, Clause 2(d): Is the Proposed Activity likely to increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map?	-	✓
Section 2.15, Clause 2(e): Is the Proposed Activity located on defence communications facility buffer land within the meaning of clause 5.15 of the Standard Instrument—the Secretary of the Commonwealth Department of Defence?	-	✓
Clause 2 (f): Is the Proposed Activity within a mine subsidence district within the meaning of the *Mine Subsidence Compensation Act 1961*?	-	✓
Section 2.16: Is the Proposed Activity for the purpose of residential development, an educational establishment, a health services facility, a correctional facility or group home in bushfire-prone land?	-	✓

The Proposed Activity is located on flood-liable land; however, the proposed works will not change flood patterns to more than a minor extent. In accordance with clause 2.12:

(2) A public authority, or a person acting on behalf of a public authority, must not carry out, on flood-liable land, development that this Chapter provides may be carried out without consent and that will change flood patterns other than to a minor extent unless the authority or person has—

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a) given written notice of the intention to carry out the development (together with a scope of works) to the council for the area in which the land is located, and

b) taken into consideration any response to the notice that is received from the council within 21 days after the notice is given.

Consultation is not required for the considerations of the Proposed Activity on flood-liable land as the flood impacts are considered to be minor and all matters have been incorporated into the design of the Proposed Activity (refer to **Section 5.6**).

Notification letters and project updates were provided to key agency stakeholders identified being TfNSW, the Australian Rail Track Corporation (ARTC), and local NSW Rural Fire Service and Fire and Rescue Branches. Feedback was received from NSW RFS which required the REF to identify risks associated with:

- Construction phase – the workforce and accidental ignition sources and recommend mitigation measures to minimise risks.
- Operation phase – the HV overhead transmission line failure and ignition sources and recommend mitigation measures to minimise risks.

Section 5.11 identifies the risks associated with the construction and operation of the Proposed Activity and concludes that the Proposed Activity is unlikely to affect the environment in relation to bushfire as appropriate mitigation measures outlined in **Section 5.11.3** would readily manage any potential bushfire impacts.

A meeting was held on 10 April 2025 with TfNSW to disc uss the alignment and the relationship with the New England Highway as a state road. TfNSW requested that the REF identify and confirm the following:

- The heights and the vertical and horizontal clearances above the New England Highway.
- The method for construction of the transmission lines.
- Location of infrastructure and impacts (excavation or fill) relative to the road reserve, including demarcation of local and state-classified road reserves.
- Access required to construct and maintain the infrastructure.
- Strategic concept designs be provided for the transmission line crossing the state-classified road network.

Additional information was provided by TfNSW following YZ Consulting's provision of a project update in December 2025. This information included consideration of Over-sized Over-mass (OSOM) movements and methods for construction of the transmission lines across the state road network.

The above items have been addressed in **Section 5.15** which concludes that the Proposed Activity is unlikely to affect the traffic and access along state-classified road networks including the New England Highway and appropriate mitigation measures outlined in **Section 5.15.3** would readily manage any potential traffic impacts along local roads within the Proposed Activity Area. It is also noted that the construction of the Proposed Activity does not require any OSOM movements.

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2.4 Landholder Consultation

Host landholders and proximal landholders have been engaged throughout the preparation of the REF. Personal meetings have been held with host landholders to listen to individual concerns, interests, issues and gather preliminary feedback, scope potential impacts and opportunities to inform mitigation strategies, key messages and engagement approach and build understanding of engagement preferences.

Other mechanisms used to contact host and proximal landholders included:

- Letters and Information Sheets delivered February 2025 and December 2025
- Project information and news provided on the UHEP Website
- Ongoing correspondence via email.

Host and proximal landholders were invited to review the REF while it was exhibited and provide comments and submissions which are summarised in the section below.

2.5 REF Exhibition Summary

The REF was publicly exhibited on the UHEP Website from 9 February to 1 March 2026. During this time, community members, landholders and other interested stakeholders were invited to review the REF and provide feedback.

Submissions were permitted to be provided via an online submission form, email, or through the post.

During the exhibition period 8 submissions were received, one submission was received on 4 March 2026 which was outside of the exhibition period however has also been considered in the REF. The submissions received and responses provided are recorded in the Consultation Log in **Appendix 4**. The submissions received did not require any changes to the assessments or the proposed management and mitigation measures and have been addressed with the information provided in the REF based on the assessments conducted.

A summary of the submissions and issues raised during the REF exhibition is contained in Table 2-3.

Table 2-3: REF Exhibition Submissions and Issues Summary

Issue	Response
Concerns were raised about the overhead line generally.	Concerns generally about the Proposed Activity have been noted. This REF assessed the potential environmental impacts of the Proposed Activity and concluded in **Section 6** that, following a thorough review of all potential impacts, the Proposed Activity can proceed with appropriate mitigation measures in place to address environmental and community concerns. The assessment determined that, with these measures implemented, the impacts are expected to be minor and manageable, ensuring the protection of local values and compliance with relevant environmental standards.

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Issue	Response
Concerns were raised about cumulative impacts and the industrialisation of the locality.	As discussed in **Section 5.16** and **Section 5.17**, there are various proximal State Significant Development (SSDs) in the region. There are also existing powerlines in the locality. However, due to the isolated nature of the Proposed Activity and short nature of the proposed construction phase, it is considered that the Proposed Activity will have minor impact on local services and the local community will be only minorly affected during construction. Also, as per **Section 5.14**, the Proposed Activity is consistent with the current surrounding land use and is proposed to be located nearby existing powerlines. The design of the proposed activity is not considered to be overly prominent. As such, it is considered that the introduction of the Proposed Activity would constitute a low visual impact.
Concerns were raised about EMF/EMI and infrasound impacts on people and livestock, including impacts to health.	This REF assessed EMF and EMI in **Section 5.3** of this REF as the Proposed Activity is classed as a high voltage overhead transmission line as it carries electricity from a Generator (the UHEP) to the Scone Substation. The Proposed Activity would meet all relevant international health guidelines and the proposed mitigation measures are consistent with the prudent avoidance and precautionary policies and advice from these guidelines. The EMF from powerlines varies with configuration, phasing and load, however typical EMFs near high voltage overhead power lines are estimated to be as provided in the REF considerably less than the magnetic field exposure Reference Levels identified by the relevant guidelines.
Concerns were raised about environmental impacts arising from the removal and disturbance of native vegetation and habitat and impacts to endangered ecological communities identified. Submissions also included concerns that the mitigation measures presented do not sufficiently demonstrate that biodiversity impacts have been avoided or minimised to the greatest extent possible.	As provided in **Section 3.3** of the REF impacts have been avoided and minimised through detailed design. Fieldwork conducted in October and November 2024, identified several constraints along the proposed alignment and community engagement undertaken in February 2025 also identified some design concerns raised by local residents and community members. Due to the constraints and design concerns further design work was required. Based on the impacts assessed, the biodiversity assessment concluded in **Section 5.10.4** that the Proposed Activity is unlikely to have a significant impact on threatened biodiversity and their habitats and the mitigation measures provided would readily manage remaining impacts. It was provided in these measures that ongoing detailed design would continue to minimise vegetation removal where appropriate and vegetation clearing will also be minimised by utilising pre-existing access tracks and exotic grasslands, as proposed.
Concerns were raised about air quality and noise impacts from construction of the Proposed Activity and the potential impacts to nearby residences and livestock.	The REF acknowledges in **Section 5.5** that activities that may generate dust include wind erosion of exposed surfaces, movement of topsoil during excavations and disturbance of stockpiles, movement of vehicles and equipment over unsealed existing roads and tracks, establishing new and upgrading existing access tracks, clearing vegetation, and site preparation works. However, the construction of the Proposed Activity will be localised and short-term i.e., it is unlikely that construction works would occur for greater than a three-week period in any given location. The mitigation measures proposed aim to ensure that dust does not leave the construction area. These measures will be included in the CEMP which will also be required to nominate a contact person and contact numbers for receiving comments or complaints from the community during construction.

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Issue	Response
Concerns were raised regarding impacts on agricultural land, agricultural sustainability for future generations and potential interruptions to livestock movements.	As discussed in **Section 5.1**, short-term impacts would be experienced during the construction phase; however, once constructed, the Proposed Activity would not restrict access to existing land uses, including recreational space, commercial or industrial development, residential development or the water supply catchment.
Concerns were raised about impacts to neighbouring property values.	Impacts to land use in the area was assessed in **Section 5.1** of the REF. The Proposed Activity would not have a significant impact on existing land uses. The access roads and powerline would not form a physical barrier as people, animals and machinery would continue to be able to move along and across the proposed powerline alignment. The Proposed Activity is consistent with the current surrounding land use and is proposed to be located nearby existing powerlines.
Concerns were raised about traffic and access to nearby residences during construction of the overhead line.	As discussed in **Section 5.15**, there would be some localised disruption to the community around the immediate construction area in terms of a reduction in pedestrian access and disruption to vehicular traffic and parking during construction works. A TMP will be included in the CEMP to manage traffic movement and ensure that alternative routes and access are available to the local community.
Concerns were raised about the Wind Farm component of the UHEP Project and the impacts this development would have.	This REF and the Proposed Activity relate to the UHEP project as its objective is to construct, operate and maintain a 66 kV overhead line to connect the UHEP to the existing Ausgrid infrastructure contributing to electricity supply and reliability for the Upper Hunter Region. However, impacts from the components of the UHEP project are outside of the Proposed Activity scope and are therefore not addressed in this REF. These submissions will be separately considered in further investigations for the UHEP project.

2.6 Post-determination Activities

Community engagement activities will continue as the Proposed Activity enters the construction phase.

This would include:

- A community information line, email address and web page associated with the UHEP project page.
- Signage along the alignment and at site compounds to ensure community members are aware of who is carrying out the work. Signage would include details of the community information line.
- Notifications to residents and other neighbours seven days prior to the start of work in their local area that would provide information about the proposed construction activities, timing, work hours and traffic and parking arrangements, as well as details of how to find out more information or raise any issues with the project team.
- Specific notification requirements for any noisy works outside standard construction hours

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Details of ongoing community consultation to be undertaken during the construction phase will also be included in the construction environmental management plan (CEMP) as discussed in **Section 8**.

3 Investigation of Alternatives for the Proposed Activity

3.1 Assessing Alternative Options

As part of developing the Proposed Activity, consideration was given to alternative routes, construction and management options. The 'do nothing' approach is summarised in **Section 3.2,** and then preliminary and proposed alignment options are discussed in **Section 3.3**.

3.2 Do Nothing

The first option considered to address the objectives of the Proposed Activity is to not undertake any further development of the network in the area (i.e., do nothing) and not provide an alternate grid connection for the UHEP Project.

Benefits of this option would be the avoidance of the construction and operation impacts as described in **Section 4.9** of this REF.

The consequences of doing nothing would result in the requirement to connect the UHEP Project via the approved connection options or an alternate option. As outlined in **Section 1**, the proposed alignment has been reviewed and assessed to avoid environmental impact as far as practicable and is considered the preferred option to connect the UHEP Project.

The 'do nothing' option is not a viable alternative.

3.3 Alignment Options

Alignment selection of the preferred connection option includes environmental attributes, electrical considerations, standards, guidelines and consultation. The following alignment options were considered as part of this Proposed Activity.

3.3.1 Preliminary Alignment Option

The Preliminary Alignment Option was used to conduct fieldwork and assess the potential impacts of the Proposed Activity.

Fieldwork conducted in October and November 2024, identified several constraints along the proposed alignment. Community engagement undertaken in February 2025 also identified some design concerns raised by local residents and community members. Due to the constraints and design concerns, the preliminary alignment was not preferred, and further design work was required to avoid the identified constraints.

Additional fieldwork was conducted in December 2025 to focus on identified alignment changes to accommodate steep terrain and survey the inclusion of the proposed access tracks to facilitate construction on the steep terrain associated with Moobi ridge.

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3.3.2 Proposed Alignment Option

The proposed alignment was selected as the preferred option due to a number of benefits, including:

- the proposed infrastructure is predominantly located in previously disturbed road reserves which is Ausgrid's preferred location for overhead line placements
- easy access for construction and maintenance
- avoidance of sensitive areas for Aboriginal heritage and vegetation
- private property allocated within the easement has been agreed through acquisition led by YZ Consulting. design improvements for constructability in steep terrain areas.

Following the selection of the proposed alignment, Umwelt has prepared this REF to assess the environmental impacts of the Proposed Activity and to ascertain whether there would be a significant impact upon the environment to meet the requirements of Sections 5.5 of the EP&A Act and clause 171 of the EP&A Regulations.

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4 Environmental Legislation

4.1 Environmental Planning and Assessment Act 1979

The EP&A Act is the primary 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. This Proposed Activity satisfies the definition of an activity under Part 5 of the EP&A Act since it:

- 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.

Under Part 5 of the EP&A Act, activities require a determining authority to take into account all matters affecting or likely to affect the environment by the proposed activity. Ausgrid is the determining authority for this Proposed Activity.

Environmental planning instruments (EPIs) are legal documents that regulate land use and development, including the type of assessment process required. EPI is the generic term used to describe state environmental planning policies (SEPP) and local environmental plans (LEP).

4.2 State Environmental Planning Policy (Transport and Infrastructure) 2021

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 development consent on any land.

Exclusions to the application of the T&I SEPP include some developments under the *State Environmental Planning Policy (Resilience and Hazards) 2021* referring to land that is identified as “coastal wetlands” or “littoral rainforest”. There are no coastal wetlands or littoral rainforests located near the Proposed Activity Area.

Therefore, this Proposed Activity falls within the scope of the T&I SEPP as an activity permissible without development consent. Consultation requirements under the Infrastructure SEPP are addressed in **Section 2**.

4.3 State Environmental Planning Policy (Planning Systems) 2021

The *SEPP (Planning Systems) 2021* declares certain development to be State Significant Development (SSD) and State Significant Infrastructure (SSI), including Critical SSI. Applications for SSD and SSI must be accompanied by an Environmental Impact Statement (EIS).

The Proposed Activity is not a type of development listed in the schedules of the *SEPP (Planning Systems) 2021* as being SSD or SSI. The Proposed Activity would not have a significant impact on the environment (refer to **Section 6**) and therefore does not require an EIS and, as such, would not be considered SSI.

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On this basis, the *SEPP (Planning Systems) 2021* is not applicable to the Proposed Activity and it can be assessed under Part 5 of the EP&A Act through the operation of the T&I SEPP.

4.4 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act prescribes the Commonwealth's role in environmental assessment, biodiversity conservation and the management of protected species, populations and communities and heritage items. The approval of the Commonwealth Minister for the Environment is required for the following controlled actions:

- an action that may have a significant impact on matters of national environmental significance (MNES)
- actions that are likely to have a significant impact on the environment of Commonwealth land
- actions taken on a Commonwealth land that are likely to have a significant impact on the environment anywhere.

The EPBC Act lists nine MNES which must be addressed when assessing the impacts of a Proposed Activity.

The assessment of the Proposed Activity's impact on MNES and the environment of Commonwealth land found that there is unlikely to be a significant impact on relevant matters of national environmental significance (refer to **Section 5.10**). Accordingly, the Proposed Activity has not been referred to Commonwealth Department of Climate Change, Energy, Environment, and Water (Cth DCCEEW).

4.5 Electricity Supply Act 1995

The ES Act sets out the licensing regime on Ausgrid and provides a framework for the development and maintenance of electricity infrastructure. The ES Act allows Ausgrid to trim and remove trees, carry out works on public roads and acquire land.

The ES Act also requires that works (other than routine repairs or maintenance works) must not be undertaken without a minimum of 40 days consultation with relevant local councils. Any submission must be considered by Ausgrid. Consultation requirements under the ES Act are addressed in **Section 2**.

4.6 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) provides a framework for the licensing of certain activities and is administered by the Environment Protection Authority (EPA) (the statutory authority of OEH). Under the POEO Act, the EPA is the Appropriate Regulatory Authority for Ausgrid.

Schedule 1 of the POEO Act lists activities that require an Environment Protection Licence to operate. The need for a licence would be evaluated and sought prior to the commencement of construction, once a detailed construction method has been finalised. There are no activities identified which would require an EPL to construct, maintain or operate the Proposed Activity. Regardless of whether a licence is required, the following restrictions during construction and operation of the Proposed Activity apply:

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- works must not pollute the environment
- waste must be classified, handled, transported and disposed appropriately
- environmental incidents involving actual or potential harm to human health or the environment must be reported to the EPA.

4.7 Biodiversity and Conservation Act 2016

Section 5.5 of the EP&A Act requires that assessment of an activity must take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity. The *Biodiversity and Conservation Act 2016* (BC Act) establishes mechanisms for the management and protection of listed threatened species of native flora and fauna (excluding fish and marine vegetation) and consideration an assessment of threatened species impacts in development assessment process amongst other controls.

If an activity potentially affects any flora or fauna species, population or ecological community listed by the BC Act, a test of significance is required. The test of significance, Section 7.3 of the BC Act, determines whether the Proposed Activity is likely to have a significant impact. It is applied as part of the Biodiversity Offsets Scheme entry requirements and for Part 5 activities under the EP&A Act. If the activity is likely to have a significant impact or will be carried out in a declared area of outstanding biodiversity value, a proponent must either apply the Biodiversity Offsets Scheme (Division 4) or prepare a species impact statement (SIS) (Division 5).

A desktop assessment indicated that threatened flora or fauna species, population or ecological community may be affected by the Proposed Activity.

A Seven Part Test of Significance Assessment (refer to **Appendix 2**) was prepared for the works and concluded that there would be no significant impact to threatened flora or fauna species, populations or ecological communities listed by the BC Act. This assessment is summarised in **Section 5.10**.

4.8 Summary of Legislative Requirements

Additional pieces of environmental legislation that apply to Ausgrid's network area were considered in the preparation of this REF, including:

- *Fisheries Management Act 1994* (NSW)
- *NSW Biosecurity Act 2015*
- *Water Management Act 2000*
- *NSW Coastal Management Act 2016 (NSW)*
- *Local Government Act 1993*
- *Crown Lands Act 2016* (NSW)
- *Heritage Act 1977* (NSW)
- *National Parks and Wildlife Act 1974* (NSW)
- *Roads Act 1993* (NSW)

Specific licences, permits, approvals and notifications required for the construction, maintenance and operation of the Proposed Activity are outlined in **Table 4-1**.

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Table 4-1: Summary of Legislative Requirements

Legislation	Context
Fisheries Management Act 1994	The *Fisheries Management Act 1994* (FM Act) also provides for the conservation, protection and management of fisheries, aquatic systems, and habitats in NSW. The Proposed Activity does not involve disturbance to aquatic or threatened species habitat as no reclamation and/or dredging is required, no new permanent access tracks are proposed over waterways. Access over waterways will be required however, will occur only via existing roads/tracks or as needed and will not block obstruct fish passage or water flow. Therefore, assessment against the conservation provisions in Parts 7 and 7A of the FM Act is not required.
NSW Biosecurity Act 2015	The broad objectives of the Biosecurity Act are to manage biosecurity risks from animal and plant pests and diseases, weeds and contaminants by preventing their entry into NSW; finding, containing and eradicating new entries; minimising the impacts of listed pests, diseases, weeds and contaminants that cannot be eradicated through management. Under the *Biosecurity Act 2015* all land managers have the same responsibility to manage biosecurity risks and impacts of invasive weed species. Mitigation measures to manage biosecurity are provided in **Section 5.10.3**.
Water Management Act 2000	The *Water Management Act 2000* (WM Act) aims to provide for the sustainable and integrated management of the water sources of NSW for the benefit of present and future generations including protecting, enhancing and restoring water sources, their associated ecosystems, ecological processes and biological diversity and their water quality. No water would be taken from the Hunter Unregulated and Alluvial Water Sources 2022 for the Proposed Activity therefore Water Access Licence and Water Use Approvals are not required under Sections 3 and 89 of the Act respectively. The Proposed Activity is unlikely to interfere with an aquifer as it is not considered likely that any groundwater system is present that is sufficiently permeable to allow water to move within it and yield productive volumes of groundwater.
Coastal Management Act 2016	The objects of the *Coastal Management Act 2016* are to manage the coastal environment of New South Wales in a manner consistent with the principles of ecologically sustainable development for the social, cultural, and economic well-being of the people of the State. The Proposed Activity Area does not interact with any coastal areas, under the Act and the State Environmental Planning Policy (Resilience and Hazards) 2021.
Local Government *Act 1993*	Approval under section 68 of the *Local Government Act 1993* is required for the installation and operation of onsite sewage management systems. No wastewater will be generated by the Proposed Activity and the Proposed Activity will not require the installation and operation of an onsite sewage management system. Waste and sewage will be managed through the installation of Portable Toilets during construction only.

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Legislation	Context
Crown Lands Act 2016	The Proposed Activity does traverse Crown Roads and Crown Waterways (associated with Kingdon Ponds and Dart Brook). An easement agreement from Crown Lands NSW will be required for easement over crown roads or waterways for construction and operation of the Proposed Activity and will be sought following approval of this REF as a Part 5 assessment under the EP&A Act. No infrastructure is proposed to be installed in the identified Crown Roads or Crown Waterways.
Heritage Act 1977	There are known heritage items located in proximity to the Proposed Activity, however per the assessment summarised in **Section 5.13**, these items are unlikely to be impacted by the Proposed Activity. Therefore, approval under the *Heritage Act 1977* will not be required.
National Parks and Wildlife Act 1974 (NSW)	The *National Parks and Wildlife Act 1974* (NPW Act) provides that a proponent who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later unknowingly harm an object without an Aboriginal Heritage Impact Permit (AHIP). The National Parks and Wildlife Regulation 2019 (NPW Regulation) provides a framework for exercising due diligence, including the guidelines which this report adheres to: the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (DECCW 2010) (the Due Diligence Code). A due diligence assessment conducted by Umwelt (refer **Appendix 3**) has been prepared in accordance with the Due Diligence Code process. The assessment, as summarised in **Section 5.12,** concludes that the Proposed Activity and associated works will not impact known Aboriginal objects and is unlikely to impact subsurface archaeological deposits.
Roads Act 1993	The *Roads Act 1993* sets out rights of members of the public to pass along public roads, establishes procedures for opening and closing a public road, and provides for the classification of roads. It also provides for declaration of TfNSW and other public authorities as roads authorities for both classified and unclassified roads, and confers certain functions (in particular, the function of carrying out roadwork) on TfNSW and other roads authorities. The Proposed Activity will require works within a public road. Approval under section 138 of the Roads Act is therefore required and will be prepared in accordance with the CEMP and Traffic Management Plan required for the Proposed Activity construction.
State Environmental Planning Policy (Biodiversity and Conservation) 2021	'Chapter 2 – Vegetation in non-rural areas' of the SEPP contains planning rules and controls relating to the clearing of native vegetation in NSW on land zoned for urban and environmental purposes that is not linked to a development application. The aims of this Chapter are to protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and to preserve the amenity of nonrural areas of the State through the preservation of trees and other vegetation. A biodiversity assessment was conducted by Umwelt (refer **Appendix 2**) and further information regarding the potential impacts to vegetation is presented in **Section 5.10.** These conclude the Project is unlikely to have a significant impact on threatened biodiversity and their habitats. A Species Impact Statement (NSW) or a Referral (EPBC Act) is not considered necessary for any threatened biodiversity as a result of impacts relating to the Proposed Activity.

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4.9 Upper Hunter Shire Local Environmental Plan 2013

The Proposed Activity Area is zoned RU1 – Primary Production, RU4 – Primary Production Small Lots and SP2 – Infrastructure under the Upper Hunter Shire LEP (see **Figure 4.1**). The objectives of the zones are provided below in **Table 4-2**.

Table 4-2: Objectives of Land Zoning

Zone	Objectives per Upper Hunter Shire LEP 2013
RU1	• To encourage sustainable primary industry production by maintaining and enhancing the natural resource base. • To encourage diversity in primary industry enterprises and systems appropriate for the area. • To minimise the fragmentation and alienation of resource lands. • To minimise conflict between land uses within this zone and land uses within adjoining zones. • To protect the agricultural value of rural land. • To maintain the rural landscape character of the land in the long term. • To ensure that development does not unreasonably increase demand for public services or public facilities. • To ensure that development for the purposes of extractive industries, underground mines (other than surface works associated with underground mines) or open-cut mines (other than open-cut mines from the surface of the flood plain) will not— (a) destroy or impair the agricultural production potential of the land or, in the case of underground mining, unreasonably restrict or otherwise affect any other development on the surface, or (b) detrimentally affect the quantity, flow and quality of water in either subterranean or surface water systems, or (c) visually intrude into its surroundings, except by way of suitable screening.
RU4	• To enable sustainable primary industry and other compatible land uses. • To encourage and promote diversity and employment opportunities in relation to primary industry enterprises, particularly those that require smaller lots or that are more intensive in nature. • To minimise conflict between land uses within this zone and land uses within adjoining zones.
SP2	• To provide for infrastructure and related uses. • To prevent development that is not compatible with or that may detract from the provision of infrastructure.

The Proposed Activity is consistent with the objectives of the zones in so far as it will allow for the ongoing current use of the land and will not prevent a diversity of land uses resulting in fragmentation or alienation of resource lands.

As discussed in **Section 4.2**, the permissibility provisions of the T&I SEPP are applicable. Electricity transmission works carried out by or on behalf of an electricity supply authority or public authority are permissible without consent under Division 4 Clause 2.44(1) of the T&I SEPP.

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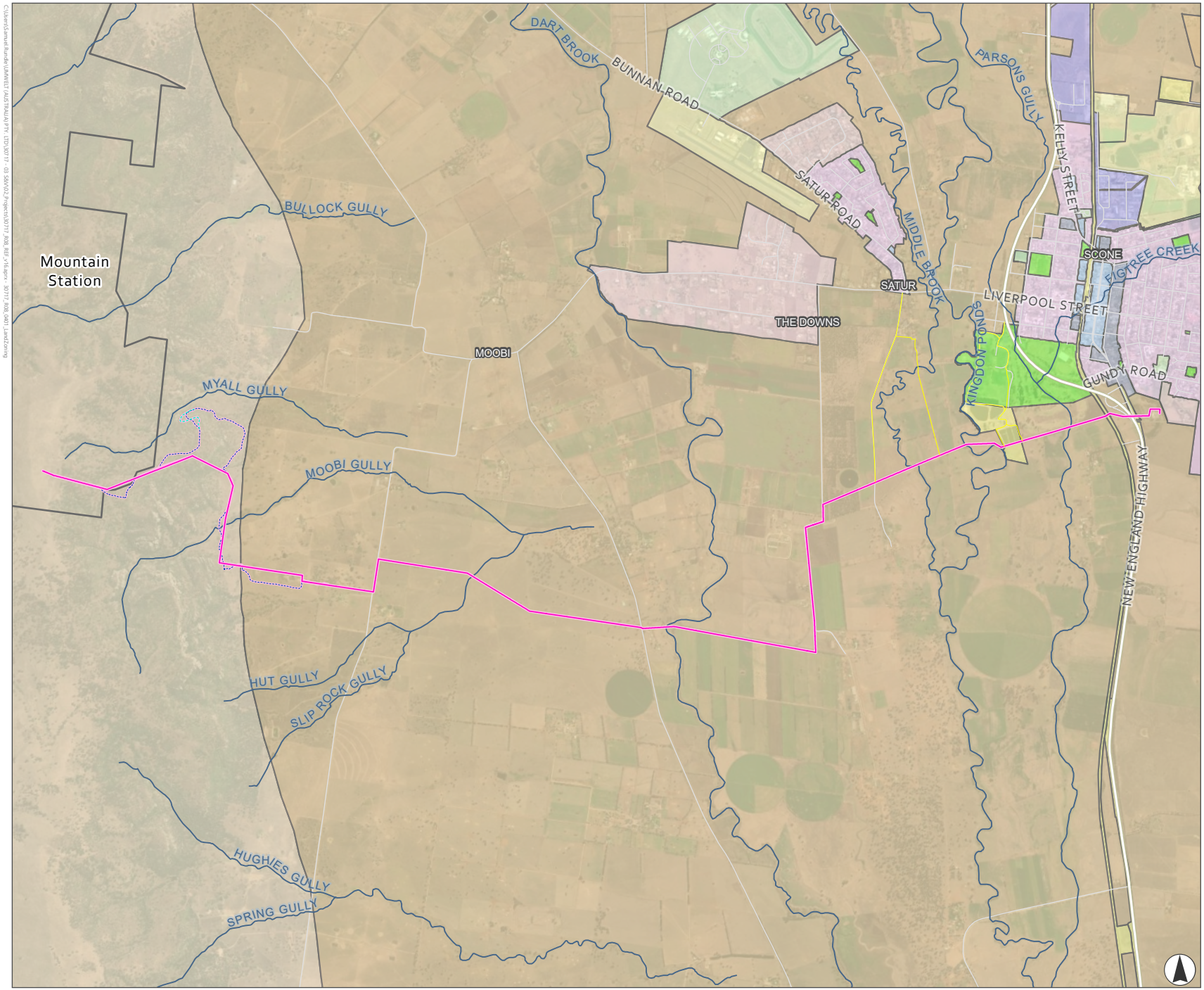
FIGURE 4.1
Land Zoning



Legend

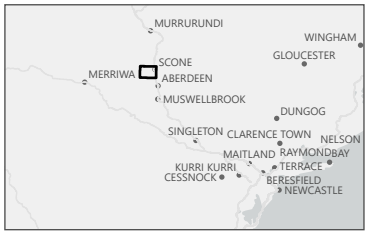
- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Highway
- Main / Local Roads
- Watercourse
- Proposed 66kV Power Line Route

Proposed Access Track – New

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

Land Zoning

- C3 - Environmental Management
- E1 - Local Centre
- E4 - General Industrial
- MU1 - Mixed Use
- R1 - General Residential
- R5 - Large Lot Residential
- RE1 - Public Recreation
- RE2 - Private Recreation
- RU1 - Primary Production
- RU4 - Primary Production Small Lots
- SP1 - Special Activities
- SP2 - Infrastructure



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GDA2020 MGA Zone 56

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Image Source: ESRI Basemap (2023) | **Data Source:** NSW DFSI (2023)

5 Environmental Assessment

This section describes the existing environment of the Proposed Activity Area and assesses the potential impacts of the Proposed Activity during construction, maintenance and operation. This section also prescribes the specific mitigation measures necessary to manage and control environmental impacts which consist of:

- specific mitigation measures prescribed in this REF (to be implemented during the design, construction, operation phases of the Proposed Activity or in combination)
- controls detailed in Ausgrid's NS174C Environmental Handbook for Construction and Maintenance.

Where there is an inconsistency, the Proposed Activity specific mitigation measures would prevail. Only specific mitigation measures are included in this REF, where required to minimise potential impacts.

Once the detailed construction methodology is known, the principal construction contractor would be responsible for developing any further mitigation measures as required to meet both legislative requirements and the commitments in this REF.

5.1 Land Use

5.1.1 Existing Environment

The Proposed Activity Area is located within the Upper Hunter Shire LGA. The Proposed Activity Area is located across land zoned RU1 – Primary Production, RU4 – Primary Production Small Lots, and SP2 – Infrastructure (referring to the lot occupied by the Scone Water Treatment Plant) under the Upper Hunter Shire LEP 2013 (see **Figure 4.1**). The objectives of these zones are provided in **Section 4.9**. The land within the Proposed Activity Area and adjacent to the proposed alignment comprises predominantly rural residential land.

The proposed alignment has been located within an easement across the lots specified in **Section 1.6** which has been coordinated by YZ Consulting on behalf of Maven Renewables and Ausgrid.

A tenure assessment was undertaken to determine if the alignment is located on Crown land that is a public road or reserve as defined by Section 45 of the *Electricity Supply Act 1995*. The route does traverse Crown Roads and Crown Waterways (associated with Kingdon Ponds and Dart Brook).

5.1.2 Potential Impacts

The Proposed Activity is consistent with the current surrounding land use. The Proposed Activity is also consistent with the objectives and land use zoning of the LEP. No potential impacts have been identified.

Scone's significance as a hub of historical equine industry is a major part of the town's historic identity and ongoing economic industry. The Proposed Activity Area is within mapped areas of Equine Strategic Agricultural Land (SAL) under the Strategic Land Use Policy (see **Figure 5-1**).

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The Equine SAL has been identified as a critical industry cluster (CIC) which is a localised concentration of interrelated productive industries based on an agricultural product that provides significant employment opportunities and contributes to the identity of the region. It is acknowledged that there are potential land use impacts with the high value of agricultural land in the region; however, due to the nature and location of the Proposed Activity, impacts to SAL will be avoided.

Easements have been acquired by the Proponent for the Proposed Activity. The purchase of easements for the Proposed Activity will have some restrictions that apply such as what can be built, what trees can be planted and what outdoor activities can be undertaken. Easement negotiations have taken this into consideration and compensation has been provided to affected landholders.

Short term impacts on the surrounding land use during the construction phase of the Proposed Activity would include increased traffic intensity (**Section 5.15**), noise (**Section 5.4**) and visual (**Section 5.14**) impacts.

Once constructed, the Proposed Activity would not restrict access to recreational space, commercial or industrial development, residential development or the water supply catchment. The Proposed Activity would have the benefit of facilitating both existing and future surrounding land uses in the region by providing a reliable connection and supply from the electricity network and supporting the UHEP Project.

The Proposed Activity would not have a significant impact on existing land uses. The access roads and overhead line would not form a physical barrier as people, animals and machinery would continue to be able to move along and across the proposed alignment.

The proposed strategies for adjustment and/or protection of telecommunication utilities would be discussed with the providers following detailed construction design. Discussion would identify possible interactions and develop procedures to be implemented to minimise the potential for service interruptions, which have the potential to impact existing land use.

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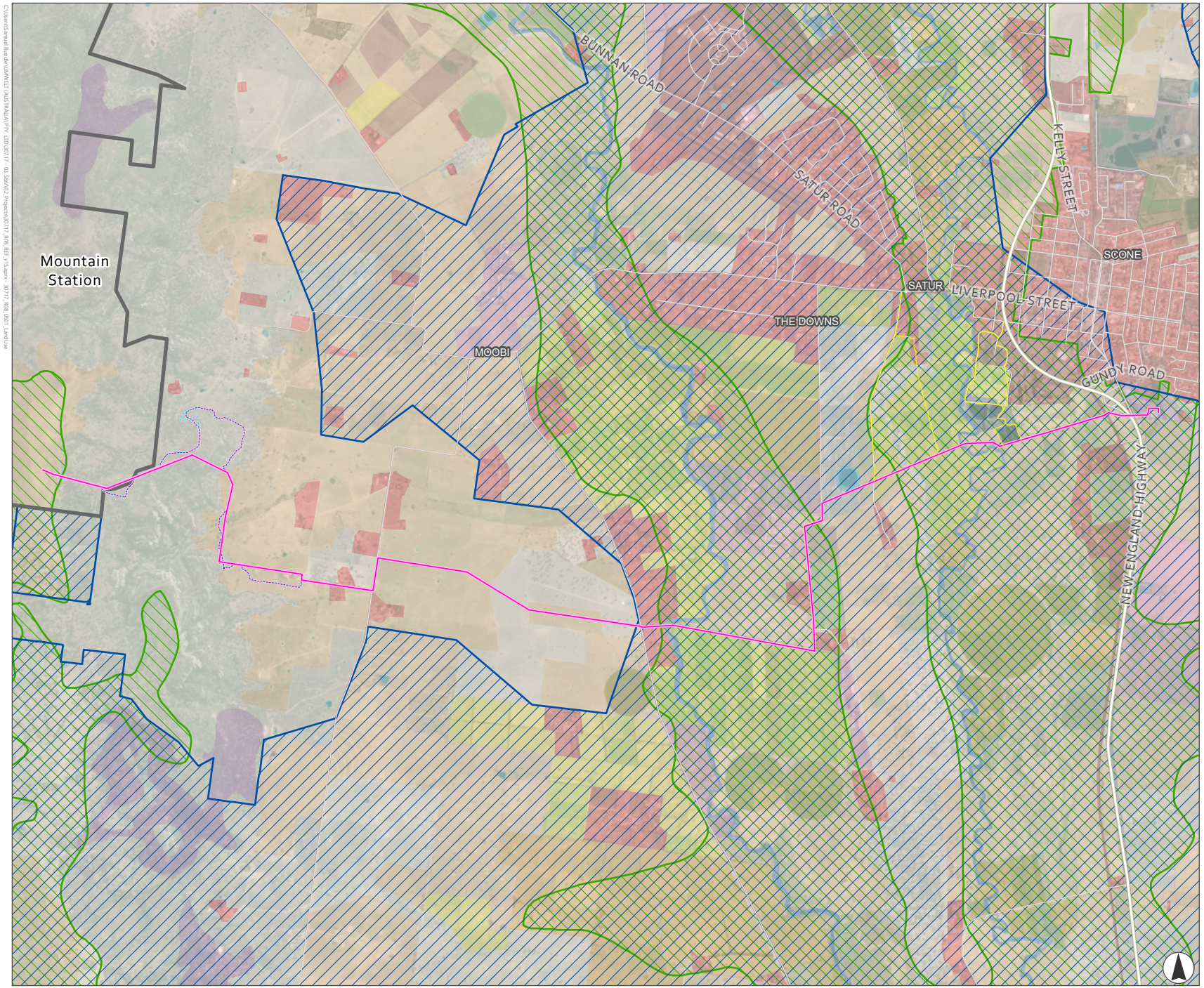


FIGURE 5.1

Proposed Activity Area and Land Use

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Highway
- Main / Local Roads
- Proposed 66kV Power Line Route

Proposed Access Track – New

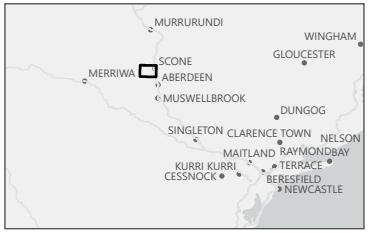
- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

Strategic Regional Land Use Policy

- Strategic Agricultural Land - Equine
- Strategic Agricultural Land - Biophysical

Landuse2017

- 1.1.0 Nature conservation
- 1.2.0 Managed resource protection
- 1.3.0 Other minimal use
- 2.1.0 Grazing native vegetation
- 3.2.0 Grazing modified pastures
- 3.3.0 Cropping
- 4.1.0 Irrigated plantation forests
- 4.2.0 Grazing irrigated modified pastures
- 4.3.0 Irrigated cropping
- 4.4.0 Irrigated perennial horticulture
- 5.2.0 Intensive animal production
- 5.3.0 Manufacturing and industrial
- 5.4.0 Residential and farm infrastructure
- 5.5.0 Services
- 5.7.0 Transport and communication
- 5.9.0 Waste treatment and disposal
- 6.2.0 Reservoir/dam
- 6.3.0 River



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5.1.3 Environmental Mitigation Measures

Mitigation measures to manage land use will also aid in managing the sediment and erosion impacts on soils for the Proposed Activity. Therefore, safeguards as summarised in **Table 5-1** are specific to the management of land use on site for all phases of the Proposed Activity.

Table 5-1: Land use mitigation measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
The Principal Construction Contractor will consult with potentially affected landholders before and during construction to minimise the potential for impacts on land use.	✓	✓	-
The Principal Construction Contractor will consult with relevant service providers prior to the commencement of construction to develop procedures to be implemented to minimise the potential for service interruptions.	✓	✓	-

5.1.4 Conclusion

The Proposed Activity is unlikely to result in land use conflict as construction-related impacts would be minor, localised and short-term in nature and appropriate mitigation measures outlined in **Section 5.1.3** would readily manage any potential impact.

5.2 Climate Change

5.2.1 Existing Environment

Climate change describes both changed average climatic conditions, such as increased temperature and lower average rainfall, as well as changes in the patterns of extreme events, including increased frequency and intensity of storms.

Greenhouse gas (GHG) emissions are defined by the GHG Protocol[2] and international standards[3] as scope 1 (direct emissions), scope 2 (indirect emissions from the consumption of purchased energy) and scope 3 (other indirect emissions).

The Proposed Activity is not located in low-lying areas near coastal locations; therefore, climate change induced rising sea levels and coastal inundation have not been considered further.

5.2.2 Potential Impacts

A risk assessment[4] of predicted climate change impacts on electricity infrastructure and the assets and services that they provide, considered the following climate change scenarios:

- higher average temperatures
- more frequent occurrence of extreme temperatures (days over 35 °C)
- lower average rainfall
- more intense extreme rainfall events

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- increased lightning strikes
- higher evapo-transpiration
- higher sea level and storm surge events
- more frequent extreme fire danger days.

The risk assessment showed that the key risks to electricity infrastructure would include extreme events, accelerated degradation of materials and structures, and resource demand pressures.

Current climate predictions anticipate that extreme heatwaves would increase in frequency and intensity, potentially generating an increase in electricity demand for air conditioning at the same time as the efficiency of the transmission is reduced by up to 30% due to high temperatures[7]. This increased demand has the potential to place pressure on the resource supplied and increase capacity constraints and maintenance requirements of the lines. However, the proposed overhead line would provide a connection to an additional energy supply (the UHEP Project), which will assist with mitigating this pressure by increasing the reliability of the electricity supply within the region.

Greenhouse Gas Emissions

Scope 1 emissions are direct GHG emissions produced from sources within the boundary of the Proposed Activity Area and as a result of the Proposed Activity's activities. Emissions arising from the construction of the Proposed Activity include those from vehicles and machinery used for materials delivery and handling, excavation, rehabilitation works, waste transport and general construction activities. The major contributor would be the consumption of fuel by transport vehicles.

The Proposed Activity will be subject to regular maintenance and monitoring to ensure all equipment is operating effectively. Minimal staff would be required to attend to the asset during maintenance, thus limiting associated vehicle use and scope 1 emissions.

Under the *National Greenhouse and Energy Reporting Act 2007*, Ausgrid is required to report information on energy production, energy consumption and the amount of greenhouse gas emissions for the facilities under their operational control on an annual basis by 31 October following the financial year for which they are reporting.

Scope 2 emissions are GHG emissions generated from the production of electricity, heat or steam that a Proposed Activity consumes, but which is physically produced by another facility. These emissions would arise primarily from the consumption of electricity through network losses when the Proposed Activity is in operation. Electrical losses are an inevitable consequence of the transmission of electricity through the transmission and distribution network, and the energy consumed in these losses must be generated by power stations. This energy is sourced from the Australian electricity market, which is primarily supplied from coal-fired power stations that emit GHGs.

The Proposed Activity would support the energy connection from the UHEP Project which is a renewable energy generator. By supporting the UHEP Project, the Proposed Activity will also support the capacity of the network and a reduction of scope 2 GHG emissions.

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Scope 3 emissions are those GHG generated in the wider economy that are related to a Proposed Activity but are physically produced by another facility. The main source of scope 3 emissions related to this Proposed Activity is from power stations supplying the National Electricity Market (currently predominantly coal-fired) that supply the electricity retailers who sell electricity to customers in the area supplied by this Proposed Activity. The power stations supply electricity from a variety of generation sources with varying emission levels. The end user can influence the level of scope 3 emissions by the amount of electricity they consume and by selecting to receive green power. Through supplying a connection from the UHEP Project to the electricity grid the Proposed Activity will support the transition of electricity supply from fossil fuels to renewable energy and resulting reduction in Scope 3 emissions.

Since 2003, all electricity retailers in NSW have been governed by licence conditions that require them to reduce greenhouse emissions arising from the energy they sell in NSW. This *Greenhouse Gas Abatement Scheme*[5] is a compulsory legal framework under the ES Act that requires the retailers to take actions to reduce emissions through a range of measures in order to meet a benchmark level set by the NSW government. The benchmark currently applicable is 5% below the baseline year of 1990, on a per capita basis.

All electricity retailers who would utilise the Proposed Activity to transport electricity to customers are bound by this regulatory framework. The framework provides a robust, market-based means to manage scope 3 emissions to the level determined to be appropriate by the NSW government. It should be noted that any effort to reduce emissions from electricity usage supplied by NSW electricity retailers outside this framework would be accompanied by a reduced requirement on the retailers themselves, and no net reduction would result.

Sea Level Rise

Under Clause 171 of the EP&A Regulation, Proponents are required to consider any impact on coastal processes and hazards, including those under projected climate change conditions. The NSW Government acknowledges that increased sea levels will have significant medium to long-term social, economic and environmental impacts for development located in the coastal zone. However, the Proposed Activity Area is not within the coastal zone.

5.2.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity are summarised below in **Table 5-2**.

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Table 5-2: Climate Change Mitigation Measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Comply with section 7 of NS174C Environmental Handbook.	-	✓	-
The climatic conditions to which the plant and equipment shall be exposed are detailed in: • AS/NZS 1170 Structural design actions • AS 2067 Substations and high voltage installations exceeding 1kV A.C • Bureau of Meteorology Climate maps for the “Annual Rainfall”, “Minimum Temperatures” and “Maximum Temperatures” in New South Wales • Engineers Australia “Australian Rainfall and Runoff – A Guide to Flood Estimation” • NS185 Major Substations Building Design Standard • NS186 Major Substations Civil Works Design Standard.	✓	-	-
Materials are recommended to be sourced from local suppliers where cost-effective and no impact on engineering properties.	✓	✓	-
Recycled materials are recommended to be considered and used where cost-effective and no impact on engineering properties.	✓	✓	-
All plant and equipment are to be turned off when not in use.	-	✓	✓

5.2.4 Conclusion

The Proposed Activity is unlikely to result in climate change impacts as the Proposed Activity will be designed to comply with network standards and relevant Australian Standards, additionally construction-related impacts would be minor and short-term.

Appropriate mitigation measures outlined in **Section 5.2.3** would readily manage any potential impact associated with the Proposed activity.

5.3 Electric and Magnetic Fields

5.3.1 Existing Environment

Electric and magnetic fields (EMF) are part of the natural environment and are present in the atmosphere and static magnetic fields are created by the Earth’s core. EMF is also produced wherever electricity or electrical equipment is in use. Power lines, electrical wiring, household appliances and electrical equipment all produce EMF.

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Existing sources of EMF within and around the Proposed Activity Area includes residential properties, existing overhead lines, and the Scone Substation.

In terms of exposure within the home, the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) advise that:

> *Magnetic fields within homes can vary at different locations and also over time. The actual strength of the field at a given location depends upon the number and kinds of sources and their distance from the location of measurement. Typical values measured in areas away from electrical appliances are of the order of 0.1–2 mG.*

Typical magnetic field measurements and ranges associated with various appliances and feeders are shown in **Table 5-3**. The Proposed Activity is classed as a high voltage overhead transmission line as it carries electricity from a Generator (the UHEP) to the Scone Substation. The strength of magnetic fields is described in microtesla (μT) or milligauss (mG), where 1 μT = 10 mG. The exposure limit in international guidelines which are aimed at preventing established harmful effects is 200 μT (2,000 mG). The magnetic field of the Proposed Activity will vary according to the amount of current carried by the powerline and the distance of the home from the powerline however, the typical measured magnetic field range of magnetic field levels measured by ARPANSA around powerlines and in Australian homes is well below the exposure limit in the international guidelines of 2,000 mG.

Table 5-3: Magnetic Field Measurements and Ranges Associated with Various Appliances and Feeders

Magnetic Field Source	Range of Measurement (in mG)
Electric Stove	2–30
Computer Screen	2–20
Television Screen	0.2–2
Electric Blanket	5–30
Hairdryer	10–70
Refrigerator	2–5
Electric Toaster	2–10
Electric Kettle	2–10
Electric Fan	0.2–2
Street Distribution Line (directly underneath)	2–20
HV Transmission Overhead Line (directly underneath)	10–200

Source: Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), Measuring magnetic fields.

5.3.2 Potential Impacts

EMF Health Guidelines

The two internationally recognised exposure guidelines are ICNIRP and IEEE:

- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 2010.
- International Committee on Electromagnetic Safety, Institute of Electrical and Electronics Engineers (IEEE) in the USA 2002.

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ARPANSA's advice[6] is that "The ICNIRP ELF guidelines are consistent with ARPANSA's understanding of the scientific basis for the protection of people from exposure to ELF EMF."

The following table summarises the magnetic field exposure Reference Levels for IEEE and ICNIRP.

Table 5-4: Magnetic Field Reference Levels at 50 Hz for IEEE and ICNIRP

	IEEE 2002	ICNIRP 2010
GENERAL PUBLIC		
Exposure general	Not specified	200 μT
Exposure to head and torso	904 μT	Not specified
Exposure to arms and legs	75,800 μT	Not specified
OCCUPATIONAL		
Exposure general	Not specified	1,000 μT
Exposure to head and torso	2,710 μT	Not specified
Exposure to arms and legs	75,800 μT	Not specified

Magnetic Field Calculations

Per the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), for homes near high voltage (HV) powerlines the magnetic field exposure will vary according to the amount of current carried by the powerline and the distance of the home from the powerline. Generally, homes that are more than 50 m from a high voltage powerline are not expected to have higher than typical magnetic fields. For substations and transformers, the magnetic fields at distances of 5-10m away are generally indistinguishable from typical background levels in the home. The figure below shows a range of magnetic field levels measured by ARPANSA around powerlines and in Australian homes.

The EMF from transmission lines varies with configuration, phasing and load, however typical EMFs near high voltage overhead transmission lines are estimated by ARPANSA to be between 1 μT and 20 μT (directly underneath) and 0.2 μT and 5 μT (at the edge of easement). The natural magnetic field of the earth varies from approximately 30 μT to 70 μT[7].

Cumulative Impact

Exposure within the residences along the route will, in many cases, be dominated by existing sources within and around the home. It is predicted where the 11kV line will be underslung the 66kV line, that EMF levels will increase cumulatively due to this arrangement. The closest residence to where this occurs along the alignment of the Proposed Activity is 300 m south and the locality of the 11kV line underslung the 66kV will also not be accessible by the public.

Cumulative impact considerations do not change the conclusions that the project will comply with relevant guidelines and the principles of prudent avoidance.

5.3.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity in relation to managing EMF for nearby residences are summarised in **Table 5-5.**

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Table 5-5: EMF Mitigation Measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
All infrastructure associated with the Proposed Activity will be designed, installed and maintained in accordance with relevant industry standards.	✓	✓	-
All relevant procedures in relation to a high voltage installation will be adhered to throughout the life of the Proposed Activity.	✓	✓	✓

5.3.4 Conclusion

The Proposed Activity is unlikely to result in EMF impacts as:

- the Proposed Activity would meet all relevant international health guidelines, including the, ICNIRP Guideline, and IEEE Standard
- the proposed design, installation and maintenance of the Proposed Activity would limit the associated magnetic field exposure
- the proposed mitigation measures are consistent with the prudent avoidance and precautionary policies and advice of the ENA, ARPANSA and WHO.

5.4 Noise and Vibration

5.4.1 Existing Environment

The normal day time noise and vibration environment near the Proposed Activity is primarily influenced by traffic flows, local fauna, and the rural landuse of the Region surrounding the Proposed Activity Area.

The existing acoustic environment is characterised by a mix of recreational areas, residential receivers and Primary industries. Nearby residential receivers along the alignment are shown in **Figure 5-2**.

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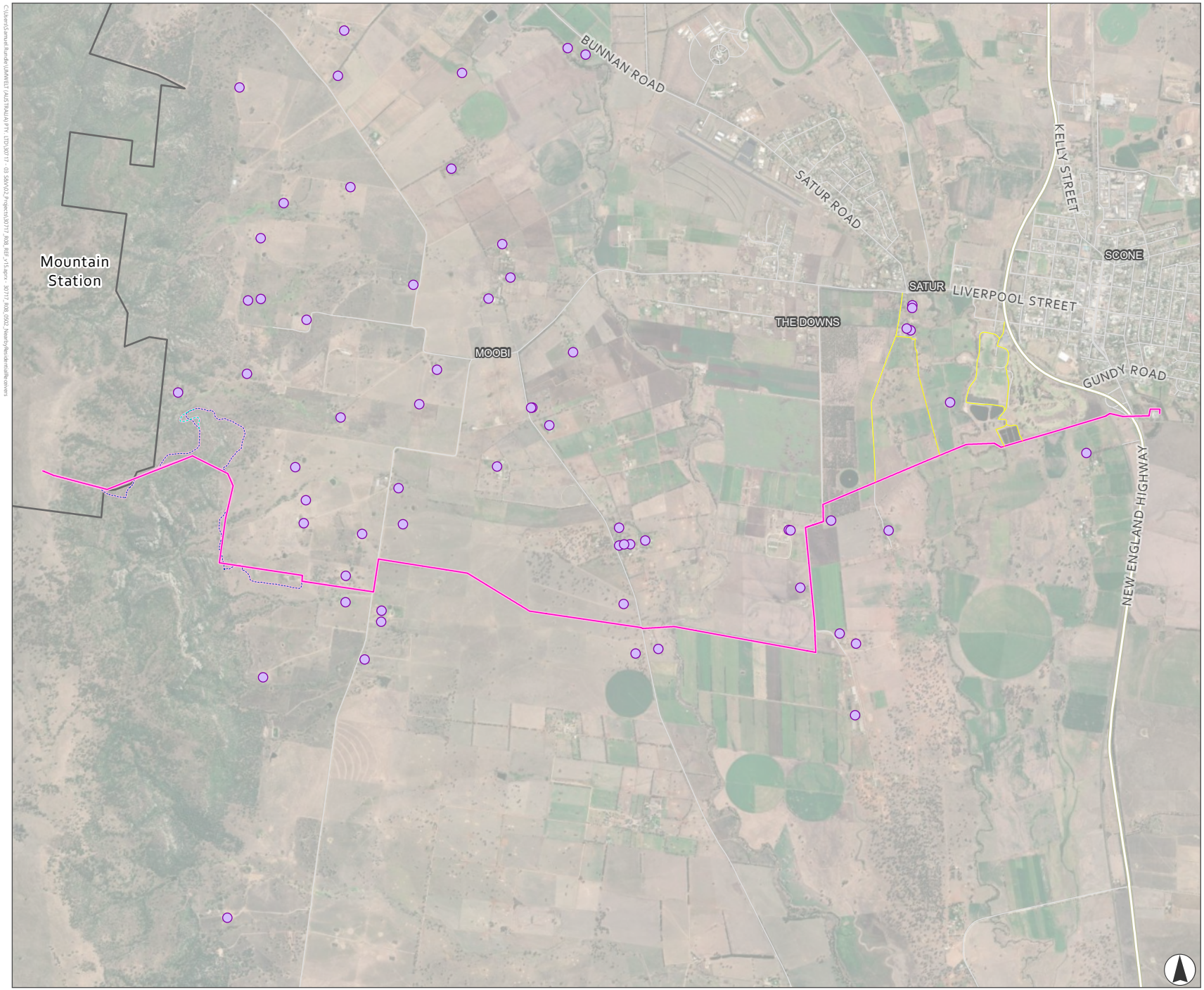
FIGURE 5.2

Nearby Residential Receivers

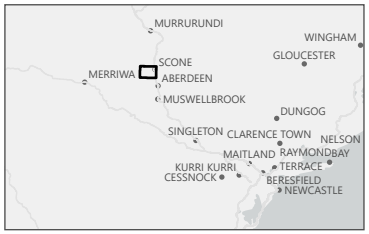


Legend

- Proposed Activity Area
- Upper Hunter Energy Park Project Area
- Residences
- Proposed 66kV Power Line Route
- Highway
- Main / Local Roads

Proposed Access Track – New

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New



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5.4.2 Potential Impacts

Noise During Construction

The Interim Construction Noise Guideline (ICNG) [8] outlines that a quantitative assessment must be undertaken where works are likely to affect an individual or sensitive land use for more than three weeks in total.

The construction work required for this Proposed Activity would be highly transitory in nature. It is unlikely that construction works would occur for greater than a three-week period in any given location. Therefore, a qualitative assessment as outlined in the ICNG has been undertaken to support this REF.

The results of the qualitative assessment indicate that activities such as boring and drilling have the potential to have an adverse noise impact. To address the ICNG requirements, the appropriate noise practice would be to perform construction activities with the highest noise impacts, such as boring, drilling, and pole installation during certain hours of the day when background noise is highest to minimise noise impact and potential for sleep disturbance. Other construction equipment is unlikely to create significant noise impacts and consultation would occur throughout the construction phase to manage noise issues.

Vibration During Construction

Any vibration impacts are anticipated to be less than one week at each construction area in duration and as such, best management practice applies during the construction process.

Each pole base would only take approximately 15 minutes to be driven, however would create impulsive vibrations. Rock hammer operations would be required for rock breaking during trenching work at select locations and have been identified as the dominant vibration-generating activity. Compliance with adopted structural vibration criteria at the nearest residential, sensitive and commercial receivers would be required.

Peak vibration levels during boring would occur during the day to minimise impact. No night works are proposed for construction of the Proposed Activity.

Noise and Vibration During Operation

Once constructed there are two noise scenarios which may be associated with the Proposed Activity: 'Aeolian' noise and 'corona' noise.

Aeolian noise can occur when wind blows over conductors or around supporting structures. The level of Aeolian noise depends on the wind speed and duration and typically occurs during high wind speed weather events with sustained wind speeds over a short period of time. Aeolian noise associated with high wind speed conditions is not expected to impact receivers at great distance as the noise generated would be masked by other weather noise and short-term in nature.

Corona noise is a phenomenon associated with the electrical ionisation of the air that occurs near the surface of the energised conductor and suspension hardware due to very high electric field strength. Therefore, it is only associated with high-voltage lines.

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Corona noise typically occurs during heavy rain and high humidity or when pollution and/or dust settles on insulators causing a 'crackling' noise to occur. Corona noise levels are not consistent from location to location because conductor surface defects, damage, dust, and other variables can influence the corona effect.

Insulators are designed to be self-cleaning during rain events which removes dust and pollution from the insulators and expels water from their surface. This in-built self-cleaning design works to reduce the factors which cause corona noise. Corona noise is therefore not expected to be a source of concern for the Proposed Activity.

5.4.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity are summarised in **Table 5-6**.

Table 5-6: Noise and Vibration Mitigation Measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
All employees, contractors and subcontractors will receive a site induction which explains the Project's specific noise mitigation measures, hours of work, delivery and site opening times, any noise limitations, workers' parking areas and lay down areas.	✓	✓	-
Any associated construction equipment and/or machinery will be maintained (including noise reduction fittings where feasible) and will be turned off when not in use.	✓	✓	-
Provide at least four clear business days' notice to affected receivers prior to starting work unless it is emergency work or it is discussed with the affected receivers face-to-face. Include the following information in notification letters: • a description of the works and why they are being undertaken • details of the works that will be noisy • work hours and expected duration • what is being done to minimise the impacts (e.g., respite periods) • 24-hour contact number.	-	✓	-
All construction activities, where feasible, will be carried out in alignment with the standard daytime working hours.	-	✓	-
No high-impact activities outside of standard construction hours unless in an emergency situation.	-	✓	-
Plan the site layout to minimise movements that would activate audible reversing and movement alarms.	-	✓	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Provide respite periods for affected receivers: • one hour respite after every three consecutive hours of high-impact activities • one day respite after every three consecutive days of high-impact activities.	-	✓	-
The Standard noise mitigation and management measures described in the *Interim Construction Noise Guideline* (DECC, 2009) will be implemented for all activities. As well as the principles of 'best practice management' from the EPA's *Assessing Vibration technical guideline* (DEC, 2006). Specific measures will be detailed in the Construction Environmental Management Plan (CEMP) to be developed prior to construction.	✓	✓	-

Works would be undertaken between 7am and 6pm Monday to Friday and 8am and 1pm on Saturday. Between 7am and 8am on Saturdays, works that are inaudible to the nearest residential premises are allowed. Audible works may be undertaken outside of these hours if:
• the works are emergency works AND the affected residents have been notified as far as reasonably practicable, OR
• the works fall into one of the following categories AND the affected residents are provided with a notification letter at least four clear business days prior to the works:
  • the delivery of oversized plant or structures that require special approval
  • maintenance and repair of essential public infrastructure that is unable to occur during standard hours
  • public infrastructure works that shorten the length of the work and are supported by the affected community (this would require community consultation).
	-	✓	-

For out-of-hours work, Upper Hunter Shire Council are to be notified.	-	✓	-
Provide information via a free call 1800 number, email address and Ausgrid's website for people wanting more information.	✓	✓	-
Provide signage outside the worksite detailing who is undertaking the works and a 24-hour contact number.	-	✓	-
Have a documented complaints process, including an escalation procedure so that if a complainant is not satisfied, there is a clear path to follow	-	✓	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Keep a register of any complaints, including details of the complaint such as date, time, person receiving complaint, complainant's contact number, person referred to, description of the complaint, time of verbal response and timeframe for written response where appropriate. Notify Ausgrid Environmental Services of complaints received, and method of response required immediately after action complaint in register.	-	✓	-
Refer operational noise enquiries to Ausgrid Environmental Services.	-	-	✓

5.4.4 Conclusion

The Proposed Activity is unlikely to result in noise and vibration impacts as construction would occur within standard construction hours and be temporary and transitory in nature so as not to affect nearby residences for longer than three weeks. Additionally, mitigation measures outlined in **Section 5.4.3** would readily manage potential impacts.

5.5 Air Quality

5.5.1 Existing Environment

Key air pollutants, as identified under the National Environment Protection Measure for Ambient Air Quality, include: carbon monoxide, nitrogen dioxide, lead, sulphur dioxide, photochemical smog and fine particles. Photochemical smog (as ozone) and, to a lesser extent, fine particles remain significant issues in NSW.

Air pollution includes the emission of odours, smoke, fuel or any other substances into the air. There are many substances in the air which may impair human health as well as the health of plants and animals or reduce visibility. Impacts from pollutants are governed by the intensity of pollutant discharges, the type of discharges and the prevalent weather conditions.

The existing (background) air quality environment is highly influenced by the rural activities occurring in the vicinity of the Proposed Activity Area. Influences on existing air quality include emissions from transportation, primary industries and domestic activities. There are no major industrial sources of air emissions in the vicinity of the Proposed Activity Area. The nearest industrial source of air quality impacts would be the Mount Pleasant Mine, located approximately 16km south. Air quality would also be influenced by vehicles using the New England Highway, which the Proposed Activity Area crosses overhead.

5.5.2 Potential Impacts

Direct potential impacts from the Proposed Activity on the local air quality would be limited to dust and emissions from vehicles, plant and equipment generated during the construction and, to a lesser extent, the operational phases. Given the nature of the works, it is unlikely that there would be any associated odour impact.

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Exhaust emissions are likely to include nitrogen oxides, carbon monoxide, sulphur oxides, hydrocarbons and total suspended particulates. All construction equipment would be fitted with approved exhaust systems and maintained to keep vehicle exhaust emissions within accepted standards.

Activities that may generate dust include wind erosion of exposed surfaces, movement of topsoil during excavations and disturbance of stockpiles, movement of vehicles and equipment over unsealed existing roads and tracks, establishing new and upgrading existing access tracks, clearing vegetation, and site preparation works.

Impacts on air quality would be predominantly associated with construction activities. A number of mitigation measures (described in **Section 5.5.3**) would be implemented to ensure dust and emissions generated by construction works are minimal and would not affect the surrounding environment.

5.5.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity to manage air quality are summarised in **Table 5-7**.

Table 5-7: Air Quality Mitigation Measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
All workers are to be made aware of the presence of sensitive receivers in the area and the need to avoid impacts.	-	✓	-
Use water sprays to dampen (but not saturate) disturbed surfaces and stockpiles, at material transfer points during construction.	-	✓	-
Visually monitor dust levels during works. If dust is leaving site, causing a safety issue, or complaints are received, suspend works and consider mitigation options and/or substitute with an alternate process.	-	✓	-
Restrict traffic movement and vehicle speeds over disturbed areas and unsealed roads.	-	✓	-
Use dust collection devices (such as vacuum) on construction and rock-breaking equipment where available.	-	✓	-
If stockpiles are required for imported fill, they must be located away from roadways, gutters, drains, slopes, concentrated flow paths and channels.	-	✓	-
Position vehicles and equipment where the fumes will least affect receivers, where practicable.	-	✓	✓
Do not leave vehicles or equipment idling when they are not needed.	-	✓	✓

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5.5.4 Conclusion

The Proposed Activity is unlikely to affect the environment in relation to air quality as construction-related impacts would be minor in nature, localised and short-term. Mitigation and management measures outlined in **Section 5.5.3** would readily manage potential impacts.

5.6 Hydrology

5.6.1 Existing Environment

The Proposed Activity Area is located within the catchment of the Hunter River and its tributaries. The Proposed Activity Area is intercepted by Dart Brook, Middle Brook, Parsons Gully and Kingdon Ponds. Dart Brook and Kingdon Ponds are higher order Strahler streams originating in the Liverpool Ranges and flow southerly to join the Hunter River south of Aberdeen.

The Proposed Activity Area is mapped within a potential flood area via the Council's online mapping (refer to **Figure 5-3**). Flood liable areas around Scone are concentrated to lands intercepted by Dartbrook and Kingdon Ponds waterways. There is a high flood hazard rating for Kingdon Ponds based on the 1999 Scone Flood Prone Management Strategy and Plan[9]. It is noted that a representation of approximately 70% of the rural areas subject to flooding within the Proposed Activity Area along the Middle Brook and Kingdon Ponds waterways have not experienced flooding above house floor level since 1999.

Based on geotechnical investigations undertaken by the Proponent, groundwater inflows were observed during drilling within most of the boreholes, specifically in coarse grained soil (sands and gravels) layer from 3.3 m below ground level. The nature of the underlying geology and topography is expected to influence the movement of groundwater.

Groundwater levels are subject to seasonal variation and may fluctuate during heavy/prolonged rainfall events and in the vicinity of surface flow paths.

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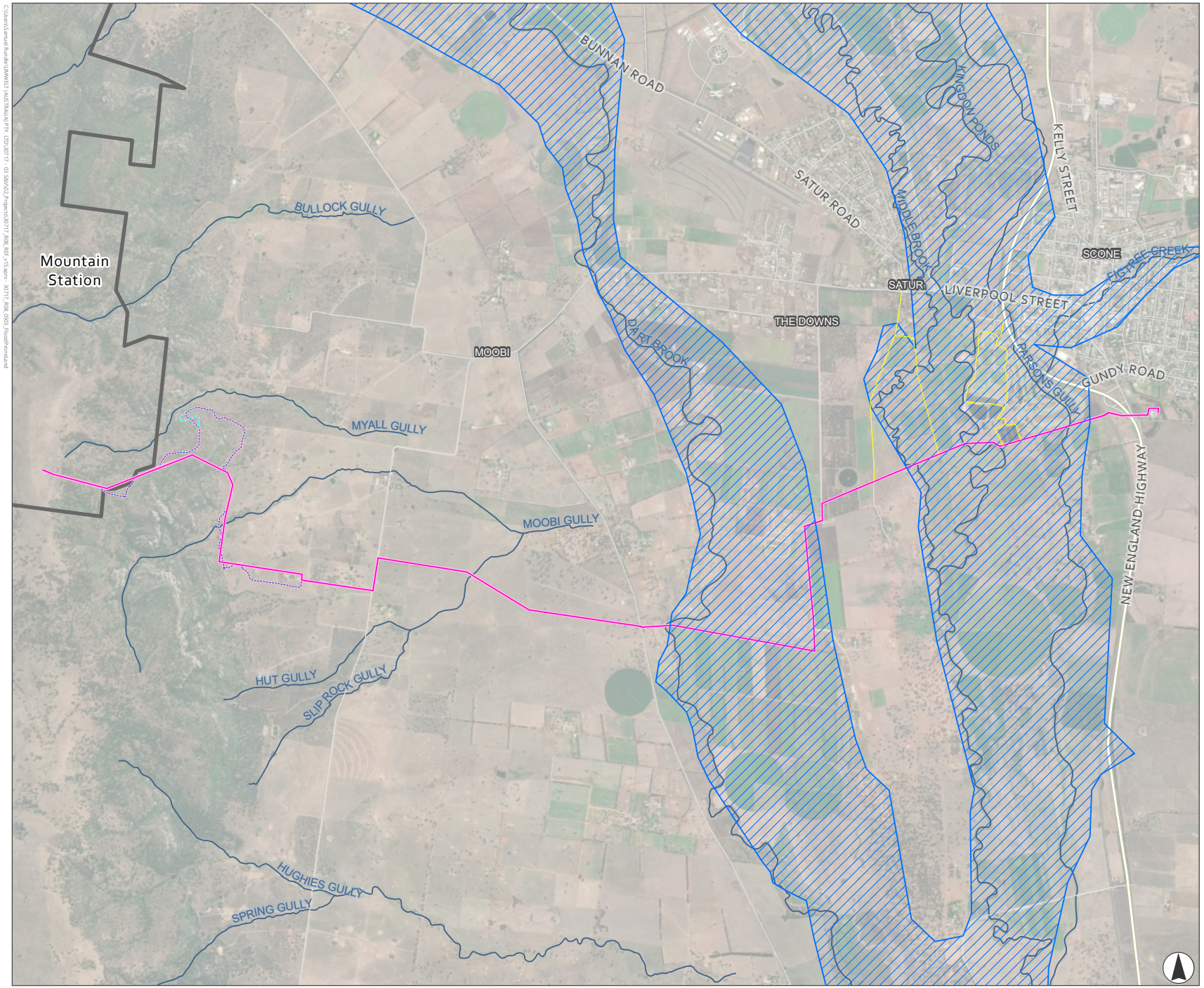

FIGURE 5.3

Flood Prone Land in Proposed Activity Area

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Highway
- Main / Local Roads
- Flood Liable Land
- Proposed 66kV Power Line Route

Proposed Access Track – New

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

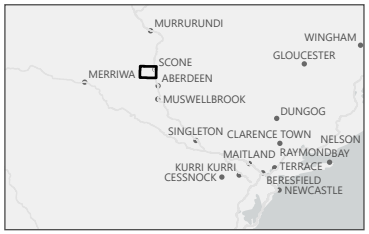

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Image Source: ESRI Basemap (2023) | **Data Source:** NSW DFSI (2023)

5.6.2 Potential Impacts

The construction works would involve vegetation removal along the banks of Dart Brook and Kingdon Ponds within the riparian corridor as defined by the Guidelines for riparian corridors on waterfront land[10]. This vegetation removal would result in areas of exposed soil material that would be prone to erosion in a rainfall event. However, due to the Proposed Activity size, duration of works, and the natural topography constraints, it is proposed to implement temporary erosion and sediment control measures to minimise any impacts from additional sediments entering the surrounding environment. In addition, a re-vegetation plan would be developed as part of the CEMP to maintain the existing vegetated riparian zone of Dart Brook and Kingdon Ponds in accordance with the Guidelines for riparian corridors on waterfront land being 80m plus the waterway widths.

The Proposed Activity does not require an increase in hardstand areas or the need to change topographic features; therefore, local drainage flows would not be altered. No new permanent access tracks or permanent waterway crossings are proposed for the construction or operation of the Proposed Activity.

Groundwater could be intercepted during excavation required for pole installation. The water would not be used consumptively as part of the Proposed Activity and no exemptions under the Water Management (General) Regulation 2018 apply to this Proposed Activity. The incidental take of groundwater to dewater the excavation will be minimal and temporary (less than 3 ML/annum or at an instantaneous rate of greater than five litres per second) to allow the Proposed Activity to be constructed safely. The Proposed Activity is unlikely to interfere with an aquifer as it is not considered likely that any groundwater system is present that is sufficiently permeable to allow water to move within it and yield productive volumes of groundwater.

Water quality in the Proposed Activity Area may be affected by spills of hydraulic oil and fuels from equipment or vehicles. Quantities of these products would be kept to a minimum and would be stored in a suitably bunded and covered area. Adequate storage and refuelling controls would be implemented to mitigate impacts. Plant and equipment would also be maintained to minimise the potential for leakages.

5.6.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity to manage hydrology within the Proposed Activity Area are summarised in **Table 5-8**.

Table 5-8: Hydrology Quality Mitigation Measures

Mitigation measures	**Implementation of mitigation measures**		
	Design	**Construction**	**Operation**
All workers are to be made aware of the presence of sensitive areas and waterfront land and the need to avoid impacts.	-	✓	-
Prepare and comply with a site-specific CEMP, which will include management measures in accordance with Managing Urban Stormwater – Soils and Construction (NSW Landcom, 2004), the 'Blue Book'.	-	✓	-
Maintain sediment controls, especially during periods of rainfall.	-	✓	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Remove temporary erosion and sediment controls as the site is stabilised or rehabilitation is complete	-	✓	-
If stockpiles are required, they must be located away from roadways, gutters, drains, slopes, concentrated flow paths and channels.	-	✓	-
Stabilise disturbed areas promptly, this may include progressive rehabilitation	-	✓	✓
Non-domestic discharges to sewer must be in accordance with a permit from the relevant water supply authority.	-	✓	✓
Prior to construction, the CEMP will be prepared and will outline the location of access routes, compound sites, construction boundaries, and exclusion zones on detailed designs, clearly staked and marked onsite.	-	✓	-
Prior to construction, prepare and implement a riparian corridor re-vegetation plan to be included in the CEMP.	-	✓	-
If dewatering of groundwater is required during construction, works would cease and additional testing would be undertaken to develop a Water Quality Management Plan.	-	✓	-
Ensure a spill kit is readily available and workers and know how to use it.	-	✓	✓

5.6.4 Conclusion

The Proposed Activity is unlikely to impact the environment in relation to hydrology as construction-related impacts would be minor, localised and short-term in nature. The 'Blue Book' will be utilised in the preparation of the CEMP to manage potential hydrology impacts in conjunction with the mitigation measures outlined in **Section 5.6.3.**

5.7 Geology and Soil

5.7.1 Existing Environment

The geology underlying the Proposed Activity Area comprises the Jerrys Plains Subgroup, which comprises coarse grained sandstone, mudstone and coal seams, and the Quaternary Aged Alluvial deposits, comprising clay and silt. A small section of the alignment at the western extend is underlain by the Newcastle Coal Measures, comprising sandstone, conglomerate and coal. **Figure 5-4** shows an excerpt of the geological map for the Proposed Activity Area.

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The topography along the alignment is relatively flat from approximately 202 AHD at Scone substation to 200 AHD around Nandowra Road approximately 5km west of the Scone substation. From Nandowra Road, the proposed activity area traverses a gently increasing slope to the Mount Moobi ridgeline approximately 5km west; the slope increases from 200 AHD to 310 AHD at the foot of the ridge line and peaks at 630 AHD where the alignment will connect to the UHEP.

The Proposed Activity Area is not within a mapped mine subsidence area.

A review of the Australian Soil Resource Information System indicates the Proposed Activity Area is not located in an area with a probability of containing Acid Sulphate Soils (ASS). As such, the potential for ASS is considered negligible.

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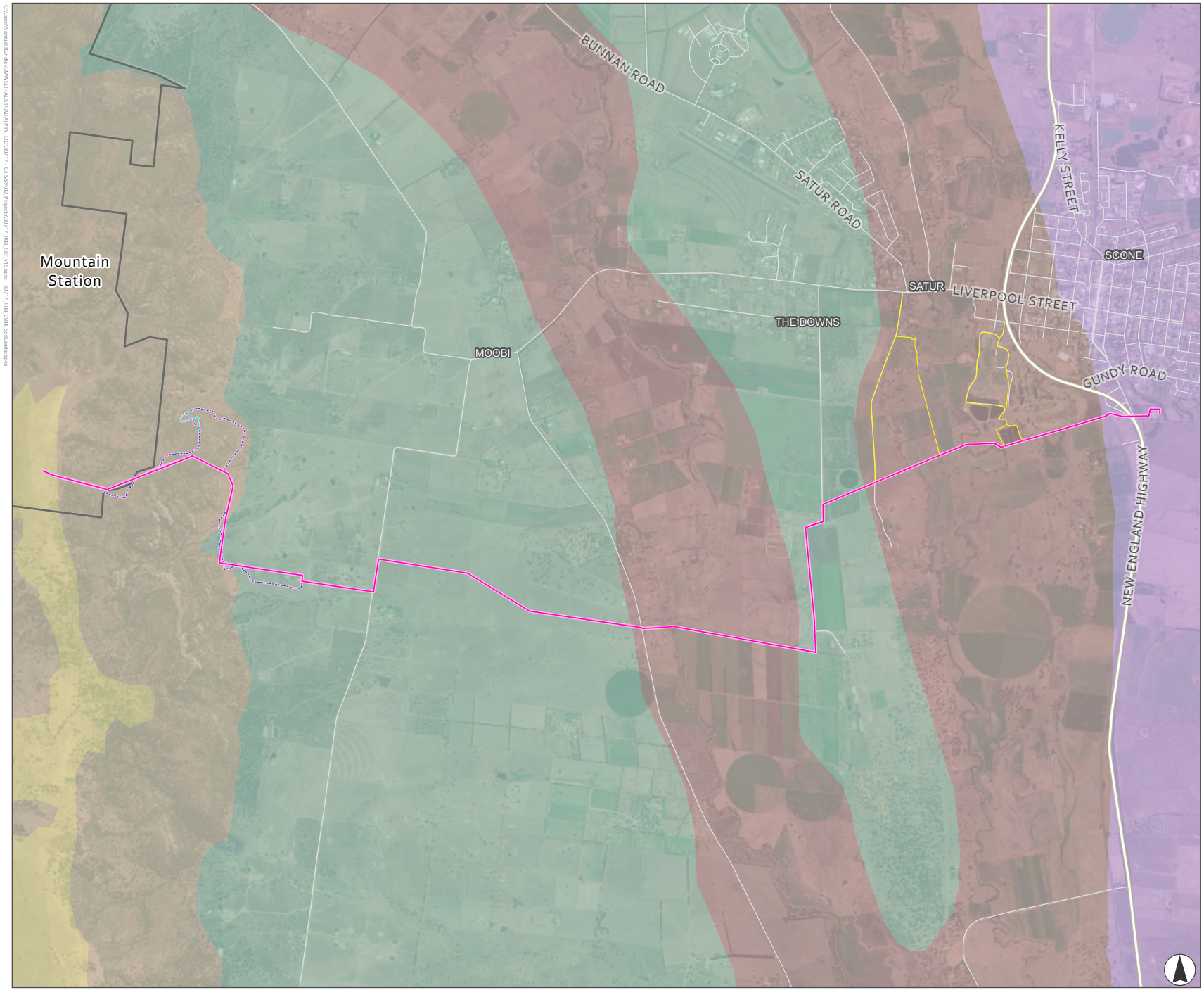
FIGURE 5.4

Soil Landscapes of the Proposed Activity Area



Legend

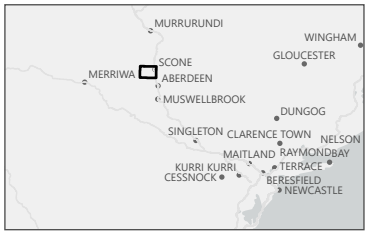
- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Highway
- Main / Local Roads
- Proposed 66kV Power Line Route

Proposed Access Track – New

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

NSW (Mitchell) Landscapes v3.1

- BBS Liverpool Range; Liverpool Range Valleys and Footslopes
- NNC Barrington - Gloucester; Scone - Gloucester Foothills
- SB Hunter; Central Hunter Foothills
- SB Hunter; Upper Hunter Channels and Floodplain
- SB Kerrabee; Lees Pinch Foothills



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5.7.2 Potential Impacts

The construction of the Proposed Activity would result in some minor soil instability. There would be less than 250 m^2 of soil disturbed at any one time. Parts of the alignment could be exposed for longer than 2 weeks and the CEMP will contain erosion management measures in accordance with *Managing Urban Stormwater – Soils and Construction*[11] to address any associated impacts.

Any access required during construction within the easement including the proposed upgrade of the existing track and new access proposed on Moobi ridge will be identified in the CEMP and designed in accordance with *Managing Urban Stormwater Volume 2C Unsealed Roads*[12] and *Erosion and sediment control on unsealed roads – A field guide for erosion and sediment control maintenance practices*[13].

Soil testing will occur prior to earthworks to determine the nature of the excavated material, confirm the presence of ASS and how excavated material would be reused or disposed of according to the NSW *Waste Classification Guidelines*[14].

5.7.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity to manage soil and erosion are summarised in **Table 5-9**.

Table 5-9: Geology and Soil Mitigation Measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Prepare and comply with a site-specific CEMP which will be prepared in accordance with Managing Urban Stormwater – Soils and Construction (NSW Landcom, 2004), the 'Blue Book'. The CEMP will include measures for erosion and sediment control in accordance with *Managing Urban Stormwater – Soils and Construction*.	✓	✓	-
The CEMP will include the access track requirements and existing track maintenance in accordance with *Managing Urban Stormwater Volume 2C Unsealed Roads* and *Erosion and sediment control on unsealed roads – A field guide for erosion and sediment control maintenance practices.*	✓	-	✓

5.7.4 Conclusion

The Proposed Activity is unlikely to affect the environment in relation to geology and soil impacts. Following the completion of construction, reinstatement works would stabilise the length of the alignment to avoid any long-term impact on geology and soils. Additionally, mitigation measures outlined in **Section 5.7.3** would readily manage potential impacts.

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5.8 Contamination

5.8.1 Existing Environment

A desktop assessment of the Proposed Activity Area showed the existing environment is a mixture of rural and residential zoned areas; there are no identified contamination sites along the alignment listed on Council or the Environmental Protection Authority (EPA) contaminated land register. There are three registered contaminated sites within 5 km of the Proposed Activity Area associated with the local Scone service stations and BP depot; however, the proposed alignment does not interact with these sites.

5.8.2 Potential Impacts

There is no evidence that the Proposed Activity Area is contaminated; however, rural and agricultural land uses have the potential to result in contamination. Therefore, there is potential for unknown contamination along the alignment.

The Proposed Activity also presents a potential source of contamination to the environment if not appropriately managed. Soil quality may be affected by spills of hydraulic oil and fuels from equipment or vehicles. However, the extent would be localised, and appropriate controls would minimise the potential for contamination to occur. Quantities of these products would be kept to a minimum and would be stored in a suitably bunded and covered area. Adequate storage and refuelling controls would be installed to mitigate impacts. Plant and equipment would also need to be maintained to minimise the potential for leakages. Any accidentally contaminated soil would be excavated, stockpiled, chemically classified for disposal and transported to an appropriately licensed waste facility.

5.8.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity relating to the management of contamination are summarised in **Table 5-10**.

Table 5-10: Contamination Mitigation Measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Undertake testing to determine the waste classification and subsequent storage, transport, tracking, licensing and disposal requirements.	-	✓	-
Provide a secure and bunded area for the storage of fuel, oil, or chemicals. This area would be imperviously bunded with a capacity to contain not less than 110% of the volume of the largest container.	-	✓	✓
Temporarily store excavated known or suspected contaminated spoil in a covered, lined/ sealed skip or bulk storage bag or sealed container on-site for classification prior to disposal off-site. Where there are site restrictions for on-site storage, store offsite. If storing more than 5 tonnes of spoil, use a licensed storage facility. There may also be a requirement for having a licence to transport the spoil (there are exemptions for Ausgrid staff).	-	✓	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Implement an unexpected finds procedure. If potential contamination is found, work must stop immediately, restrict access and notify: • Site supervisor • Ausgrid's Environmental Services • relevant safety advisor for WHS requirements.	-	✓	-
Any person handling the waste is trained in handling Scheduled Chemicals and methods of containing Scheduled Chemical spills and wears Personal Protective Equipment (PPE).	✓	✓	✓
All packages / storage containers are clearly labelled and maintained in good order.	✓	✓	✓
Provide a secure, lockable, and floored area for the storage of fuel, oil, or chemicals. This area would be imperviously bunded with a capacity to contain not less than 110% of the volume of the largest container.	-	✓	✓
Prior to construction, nominate and signpost a plant refuelling area.	-	✓	-
When transporting soil where the concentration of Aldrin or Dieldrin in the soil is 5-mg/kg or greater, or the presence has not been ruled out, the following additional controls apply: • The transport vehicle must carry personnel trained in containing spills of OCP-contaminated spoil. • Appropriate PPE, clean-up material and equipment must be carried on the transport vehicle.	-	✓	✓

5.8.4 Conclusion

The Proposed Activity is unlikely to affect the environment in relation to contamination as there is no known contamination source along the route and appropriate mitigation measures outlined in **Section 5.8.3** would readily manage any potential contamination impacts.

5.9 Waste

5.9.1 Existing Environment

The Proposed Activity Area is located within a rural residential environment and is not within the vicinity of any high waste-generating activities.

The existing substation to which the Proposed Activity is being connected is managed by Ausgrid and is unmanned and only generates small amounts of waste such as oil absorbent pads, green waste, general waste and light globes, which are generally taken to the nearest depot for recycling or disposal.

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5.9.2 Potential Impacts

The Proposed Activity may generate various types of waste; some would be reused or recycled while others would require disposal. Most waste would be generated during the construction phase. Waste likely to require disposal includes:

- excavated earth material that is unsuitable for re-use
- waste oils, liquids and fuels from maintenance of construction plant and equipment
- wastes from site compounds (including sewage waste, putrescible waste etc)
- building waste (packaging material, scrap metal, plastic wrapping, cardboard)
- excess building materials that can't be reused
- vegetation from clearing activities
- cable off-cuts
- timber poles and conductor from relocated powerline
- timber cable drums
- timber pallets
- redundant equipment
- other general construction waste.

All waste would be re-used where possible, otherwise managed in accordance with the NSW *Waste Classification Guidelines*.

Pole installation may generate soil for disposal. Waste classification would be undertaken from stockpiles during the works. Any soil identified as virgin excavated natural material (VENM) or excavated natural material (ENM) would be reused where possible. Any excess soil would be disposed of at an appropriately licensed facility or recycled through an appropriately licensed soil recycler.

Any soil suspected of being contaminated would be stored and sampled separately and then disposed of at an appropriately licensed waste facility (refer to **Section 5.8.3**).

During operation of the Proposed Activity, waste generation would be minimal.

5.9.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity in relation to waste are summarised in **Table 5-11**.

Table 5-11: Waste Mitigation Measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Prior to construction, the CEMP would be prepared to contain a list of expected waste, volume and planned reuse, disposal or recycling.	✓	✓	-
Classify waste to determine licensing, waste tracking and disposal requirements.	-	✓	-
Segregate and label waste to improve recycling opportunities, avoid cross-contamination and reduce disposal costs.	-	✓	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Where possible, reuse or recycle or return to the supplier wastes including metal components, transformer oil, spoil and packaging.	-	✓	✓
Reuse VENM and ENM where options are available. Ensure that: • a valid waste classification certificate is available and • the reuse meets the conditions of the planning approval for that site.	-	✓	-
If liquid or hazardous waste will be transported, the transportation must be undertaken by licensed vehicles and/or contractors. The waste oil must be disposed of at a facility licensed to accept Liquid and, or hazardous waste.	-	✓	-
Ensure a spill kit is readily available and workers know how to use it.	-	✓	-

5.9.4 Conclusion

The Proposed Activity is unlikely to affect the environment in relation to waste management as all waste would be managed in accordance with the NSW Waste Classification Guidelines. Additionally, mitigation measures outlined in **Section 5.9.3** would readily manage potential impacts.

5.10 Flora and Fauna

5.10.1 Existing Environment

The Proposed Activity is located in a highly disturbed landscape with large areas of exotic grasslands used for agricultural purposes. In amongst the grasslands are small, disturbed patches of native vegetation that vary from dry sclerophyll forest on rocky substrates in the west to grassy woodlands with a highly modified understorey and a scattered canopy.

An assessment of the existing flora and fauna environment was undertaken by Umwelt (**Appendix 2**). The assessment included a detailed assessment of the existing environment of the Proposed Activity Area and the potential impacts from the Proposed Activity within the maximum extent of native vegetation which may be directly or indirectly impacted to construct the proposed overhead line.

A desktop assessment was completed which included a review of relevant public databases, profiles for threatened species, populations and ecological communities, and other information related to the Proposed Activity, including published broad-scale mapping within a minimum 10 km search area of the Proposed Activity Area to identify potential biodiversity values.

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A likelihood of occurrence table was produced to assess the likelihood of threatened species identified from desktop searches occurring in the Proposed Activity Area. The assessment was based on the habitat profiles (DCCEEW 2024) for the species assessed and any other habitat information where available. It included consideration of the location of nearby records and observation dates; the presence of key habitat features and information about species populations in the area.

The survey was undertaken within the Proposed Activity Area over five days by Umwelt Ecologists on 15 to 16 October 2024, 1 November 2024, and 1 to 2 December 2025. The survey involved walking throughout the Proposed Activity Area and included the following survey methods:

- Rapid data point collection (RDP) focusing on vegetation points to confirm regional vegetation mapping
- Habitat feature search of the Proposed Activity Area for key habitat constraints
- Opportunistic threatened flora species surveys.

The biodiversity survey effort is displayed in **Figure 5-5**.

Vegetation and Threatened Flora

Vegetation communities within the Proposed Activity Area were determined using the most recent available vegetation mapping across the locality NSW State Vegetation Type Map: Release C2.0.M2.1 (November 2024) (NSW CRSEED 2024b). Vegetation communities within the Proposed Activity Area were then aligned to the State-wide system of Plant community Types (PCTs) using relevant PCT descriptions. Rapid data points were taken across the Proposed Activity Area to inform the dominating species and assist in assigning PCTs.

There were targeted threatened flora surveys conducted as part of this assessment. During the preliminary field surveys, *Eucalyptus camaldulensis* (river red gum) was recorded in the Proposed Activity Area. The Hunter catchment population of this species is listed as Endangered under the BC Act. No other threatened flora species were recorded during the field survey.

The assessment identified four PCTs, areas of exotic grassland, planted native vegetation and two areas of plantation within the Proposed Activity Area. The total extent of PCTs recorded in the Proposed Activity Area is shown in **Figure 5-6**.

A total of two BC Act listed threatened ecological communities (TECs) have been identified within the Proposed Activity Area and a single EPBC Act listed TEC:

- EPBC Act listed Central Hunter Valley eucalypt forest and woodland ecological community
- BC Act listed Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions
- BC Act listed Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions

A precautionary approach has been taken when identifying these communities as the vegetation is highly disturbed and fragmented; however, only high-level field validation works were undertaken to inform the BAR.

Three flora species recorded are listed as priority weeds under the NSW Biosecurity Act 2015 for the Hunter LGA region recorded within the Proposed Activity Area: Prickly

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pear *(Opuntia spp.*), Fireweed (*Senecio madagascariensis*) and Patterson's curse (*Echium plantagineum*).

Fauna Habitats

A habitat assessment for fauna was conducted within the Proposed Activity Area. Habitat characteristics and parameters that were assessed included:

- Physical aspects such as climate (desktop), geology, soils, slope, elevation, drainage and aspect
- Presence and relative abundance of key habitat features
    - Hollow-bearing trees (HBTs)
    - Aquatic habitats
    - Large hollow logs
    - Rocky outcrops
    - Termite mounds
    - Nests
    - Scats.

Whilst no formal threatened fauna surveys were conducted, opportunistic observations were recorded upon detection. During the field survey, two threatened fauna species were recorded, including thirteen grey-crowned babblers (eastern subspecies) (*Pomatostomus temporalis temporalis*) and four speckled warblers (*Pyrrholaemus sagittatus*). Both species are listed as Vulnerable under the BC Act and use woodland habitats within the Proposed Activity Area. Threatened species locations are shown in Figure 5-6. .

Tree hollows (formed in dead trees (stags) and mature trees) provide nesting and roosting habitat for hollow-dwelling fauna and are important habitat components of native forests. There were several tree hollows observed throughout the Proposed Activity Area, there are 27 that would be impacted by the Proposed Activity. Any hollow dependent threatened species has been reviewed and has been assessed in the likelihood assessment for suitable habitat and a 'Test of Significance' completed if considered moderate or high.

The riparian habitat within the Proposed Activity Area includes areas that intersect waterways in the east, such as Parsons Gulley and a small unnamed creek east of the golf course. It also includes Kingdon Ponds, Parsons Gully, Middle Brook, and Dart Brook. Off the escarpment, Moobi Gully, a non-perennial watercourse, features a lower quality riparian habitat.

The riparian zones through the Proposed Activity Area are a habitat for common bird species (for example, Pacific black ducks were observed), but no signs of frogs or fish were observed. The highly disturbed nature of the riparian habitat, coupled with the fragmentation of the remnant vegetation in the wider landscape, would restrict the utilisation of these areas other than by highly mobile species moving across the landscape.

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FIGURE 5.5

Survey Effort

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Reserve
- Watercourse
- Highway
- Main / Local Roads
- Railway

Survey Effort

- Rapid Vegetation Asessment
- Hollow Bearing Tree
- Habitat Feature

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

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5.10.2 Potential Impacts

The Proposed Activity will impact a proportion of the native vegetation and habitats detailed above. The total impact area (representing the proposed easement and access tracks) represents up to 49.96 ha, this includes an area of 18.62 ha of native vegetation, 31.01 ha of exotic vegetation and 0.33 ha of roads and infrastructure.

Areas of native vegetation as mapped in **Figure 5-6** being impacted primarily occur in small patches throughout the Proposed Activity Area and upper slopes of the Mt Moobi ridgeline. As shown in **Table 5-12** below, the unavoidable impacts to native vegetation within the Proposed Activity Area totals 18.62 ha, including 15.84 ha of native vegetation and 2.78 ha of planted native vegetation.

Table 5-12: Plant Community Types within Proposed Activity Area

PCT ID	PCT Name	Threatened Ecological Community BC Act Listing	Threatened Ecological Community EPBC Act Listing	Maximum Extent within Proposed Activity Area (ha)
393	White Box shrubby woodland of the western Liverpool Range	NA	NA	5.11
3431	Central Hunter Ironbark Grassy Woodland	Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions - Endangered Ecological Community (EEC)	Central Hunter Valley eucalypt forest and woodland Critically Endangered Ecological Community (CEEC)	3.32
3767	Upper Hunter Escarpment Colluvial Ironbark Forest	NA	NA	5.66
4089	Namoi-Upper Hunter River Red Gum Forest - Inland Riverine Forests.	Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions (EEC)	NA	1.75
NA	Planted Native Vegetation	NA	NA	2.78
			Total	**18.62**

The plant community types identified within the Proposed Activity Area provide habitat for 32 threatened species that have at least a moderate likelihood of occurring within the Proposed Activity Area. None of these species listed below were recorded within the Proposed Activity Area during field surveys:

- Two (2) threatened flora species *Cymbidium canaliculatum* (tiger orchid), and *Prasophyllum* sp. Wybong (a leek-orchid)

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- 14 threatened avifauna species Regent Honeyeater (*Anthochaera phrygia*), Swift Parrot (*Lathamus discolor*),Southern Whiteface (*Aphelocephala leucopsis*), Dusky Woodswallow (*Artamus cyanopterus cyanopterus*), South-eastern Glossy Black-Cockatoo (*Calyptorhynchus lathami lathami*), Brown Treecreeper(eastern subspecies) (*Climacteris picumnus victoriae*), Grey-crowned Babbler (*Pomatostomus temporalis temporalis*), Little Lorikeet (*Glossopsitta pusilla*), Scarlet Robin (*Petroica boodang*), Speckled Warbler (*Pyrrholaemus sagittatus*), Diamond Firetail (*Stagonopleura guttata*), Varied Sittella (*Daphoensitta chrysoptera*), Masked Owl (*Tyto novaehollandiae*) Little Eagle (*Hieraaetus morphnoides*), Black Falcon (*Falco sibniger*), Spotted Harrier (*Circus assimilis*).
- 14 threatened Mammals: Brush-tailed Phascogale (*Phascogale tapoatafa*), Squirrel Glider (*Petaurus norfolcensis*), Koala (*Phascolarctos cinereus*), Spotted-tailed Quoll (*Dasyurus maculatus*), Brush-tailed Rock-wallaby (*Petrogale penicillata*), eastern false pipistrelle (*Falsistrellus tasmaniensis*), Corben's Long-eared Bat (*Nyctophilus corbeni*), Eastern Cave Bat (*Vespadelus troughtoni*), Large-eared Pied Bat (*Chalinolobus dwyeri*), Large bent-winged bat (*Miniopterus orianae oceanensis*), Southern myotis (*Myotis macropus*), Yellow- bellied sheathtail bat (*Saccolaimus flaviventris*), Greater Broad-nosed Bat (*Scoteanax rueppellii*), Grey-headed Flying-fox (*Pteropus poliocephalus*).
- Two (2) threatened reptiles Pink-tailed legless-lizard (*Aprasia parapulchella*), and Hunter Valley Delma (*Delma vescolineata*).

A test of significance has been completed for the threatened species listed under the BC Act (refer to **Appendix 2**) that were considered to have a moderate or greater likelihood of occurrence within the Proposed Activity Area. The test of significance has concluded that the proposed works are not likely to significantly impact any TECs, threatened species or their habitats listed under the BC Act.

The significance of the impact of the proposed action on MNES can be determined through self-assessment using Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (DoE, 2013). A 'Referral' under the EPBC Act is required for proposed actions that may affect nationally listed threatened species, threatened ecological communities and migratory species. Assessments of significance have been completed for the threatened entities listed under the EPBC Act (refer to **Appendix 2**) that are considered to have a moderate or greater likelihood of occurrence within the Proposed Activity Area and has concluded the Proposed Activity is not considered likely to significantly impact any TECs, threatened species or their habitats listed under the EPBC Act.

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FIGURE 5.6

Vegetation Communities Within the Proposed Activity Area

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Watercourse
- Highway
- Main / Local Roads
- Railway

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

Plant Community Types

- -1 - Planted
- 0 - Dam
- 0 - Exotic Grassland
- 0 - Infrastructure
- 0 - Road
- 3431 - Central Hunter Ironbark Grassy Woodland
- 3767 - Upper Hunter Escarpment Colluvial Ironbark Forest
- 393 - White Box shrubby woodland of the western Liverpool Range, Warrumbungle Range and south-west Pilliga forests, Brigalow Belt South Bioregion
- 4089 - Namoi-Upper Hunter River Red Gum Forest

0 1 2

Kilometres

Scale 1:50,000 at A4
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Noise Impacts

Indirect impacts to flora and fauna, including impacts due to increased human activities within/adjacent to sensitive habitat areas were considered. The assessment found that there is a low likelihood that the Proposed Activity would impact species through increased human activity. There is evidence of fauna usage within the landscape surrounding the Proposed Activity Area. This confirms that the level of human activity planned for the Proposed Activity Area upon completion is unlikely to have an exclusionary effect.

It is acknowledged that noise will occur associated with construction machinery. However, this will be short-term and transient in nature along the proposed activity area. Appropriate construction noise management measures will be implemented through the CEMP, which will also reduce associated impacts to fauna.

Fragmentation and Connectivity

The biodiversity assessment (**Appendix 2**) noted that the Proposed Activity Area does not affect corridors between State Forests nor National Parks in the region. It is unlikely that the Proposed Activity will affect the exchange of genes between individuals or populations of species that occur in the general area, given the nature of the works (which will maintain movement) and relatively narrow Proposed Activity Area.

Weeds

As stated in **Section 5.10.1**, three species of exotic vegetation listed as priority weeds under the NSW Biosecurity Act 2015 for the Hunter LGA region were recorded within the Proposed Activity Area: Prickly pear (*Opuntia spp*.), Fireweed (*Senecio madagascariensis*) and Patterson's curse (*Echium plantagineum*).

There is a moderate likelihood that the proposed works would increase weed invasion within the Proposed Activity Area and broader landscape. Weed invasion could be promoted through seed and plant material being transported to site by construction equipment and through the green waste being brought to the site. Mitigation measures will be implemented as outlined in **Section 5.10.3** to appropriately manage weed and biosecurity and include measures to ensure that priority weeds would not be mulched with the native vegetation.

5.10.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity in relation to flora and fauna impacts are summarised in **Table 5-13**.

Table 5-13: Flora and Fauna Mitigation Measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Comply with section 5 Ecology of NS174C Environmental Handbook.	-	✓	-
Ensure removal of vegetation is minimised through detailed design.	✓	-	-
It is recommended to minimise vegetation clearing by utilising pre-existing access tracks and exotic grasslands, as proposed.	✓	-	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Access for construction is recommended to utilise existing tracks where possible. Trimming or clearing vegetation for access is only permitted within the area identified as the proposed access on Moobi Ridge. Disturbance is recommended to be minimised where required through the use of geotextile fabric and/or ground protection matts.	-	✓	-
Ensure all River red gum (*Eucalyptus camaldulensis*) are avoided during the detailed design phase for the Proposed Activity.	✓	-	-
It is recommended to minimise vegetation clearing by utilising smaller plant and equipment	-	✓	✓
The removal of hollow-bearing trees may be avoided with minor design changes. However, if it is required, it would be performed in the presence of a qualified ecologist to assist in the detection and translocation of potentially displaced fauna and implemented via a tree-felling protocol to protect fauna to be included in the CEMP. The CEMP will include protocols for tree felling, including actions to: 1. Identify all hollow-bearing trees in the vicinity of the works with high-visibility flag or similar prior to commencement of vegetation clearing. 2. Undertake pre-clearance surveys for fauna immediately prior to clearing. 3. Where fauna is identified in a tree to be felled, the tree must not be cleared until the fauna has relocated itself. 4. Remove understorey vegetation and other trees in the vicinity. 5. Check the tree each morning until the fauna moves into adjacent vegetation (normally the following day). 6. Ensure an ecologist is present during the felling of hollow-bearing trees to relocate fauna or provide care as necessary.	-	✓	-
Ensure hygiene controls are in place for all plant and people working in the Proposed Activity Area.	-	✓	✓
Ensure machinery will be washed following best practice hygiene protocols prior to being brought to site to prevent the spread of weeds, seeds, pathogens and fungi.	-	✓	✓
To manage the spread of weeds and exotic species, edge effects and erosion, clearing limits and exclusion zones will be established in the construction phase.	-	✓	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
All weed material removed will be disposed of in a suitable waste facility and not mulched on site. This is to avoid the reintroduction and further spread of weeds in the area.	-	✓	-
No storing equipment, parking vehicles or accessing the site through undisturbed areas.	-	✓	-
Suitable erosion controls would be implemented across the site to avoid any additional runoff to leach into the existing drainage lines.	-	✓	✓

5.10.4 Conclusion

The assessment undertaken to identify impacts on biodiversity (**Appendix 2**), concludes that the Proposed Activity is not likely to significantly affect the environment in relation to flora and fauna:

- due to the narrow nature of the Proposed Activity and relatively low-quality native vegetation, the Proposed Activity would not increase fragmentation and fauna will utilise the remaining vegetation.
- assessments of the significance of impacts from the Proposed Activity on the identified listed threatened entities were carried out under a Test of Significance under the BC Act and Assessment of Significance under the EPBC Act. The assessment concluded that the Proposed Activity is not likely to significantly impact any TECs, threatened species or their habitats listed under the BC Act or EPBC Act.

The Proposed Activity is unlikely to have a significant impact on threatened biodiversity and their habitats. A Species Impact Statement (NSW) is not considered necessary for any threatened biodiversity as a result of impacts relating to the Proposed Activity. Mitigation measures outlined in **Section 5.10.3** would readily manage potential impacts.

5.11 Bushfire

5.11.1 Existing Environment

The Proposed Activity is within land mapped as Category 3 and Category 1 Vegetation under the NSW Rural Fire Service (RFS) bushfire-prone land maps. The bushfire-prone land mapping is provided in **Figure 5-7**.

The Proposed Activity Area is located within a rural setting surrounded by predominantly cleared land. The majority of the proposed alignment traverses existing cleared paddocks used for agricultural activities with scattered vegetation within the easement, which are mapped as Category 3 Vegetation; this is defined as medium bushfire risk vegetation.

Category 1 land is mapped within the following lots associated with the denser vegetation along the Mt Moobi ridgeline:

- Lot 75 DP750950

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- Lot 76 DP750950
- Lot 77 DP750950
- Lot 68 DP750950
- Lot 30 DP3093478.

Slopes vary along the alignment from 18% within elevated areas associated with the Mt Moobi ridgeline and ranging from 0 to 1% along lower elevation areas and flatter rural land associated with the Proposed Activity Area with the dominant bushfire threat associated with unmanaged vegetation where the alignment is located at the Mt Moobi ridgeline.

5.11.2 Potential Impacts

The risk of causing a bushfire is primarily associated with construction and maintenance activities, not the inherent nature of the proposed infrastructure. The key risks include:

- undertaking various kinds of ‘hot work’ where naked flames are used, such as welding, use of blowtorches, angle-grinding and use of gas torches for shrinking heat shrink components
- use of machinery with the potential to generate sparks, such as jack hammers, rock saws, and angle grinders.

Ausgrid’s guideline DG 33 Hot Work During Total Fire Bans restricts hot works during total fire bans and requires risk assessments and precautions to be put in place to minimise the risk of causing a bushfire. These precautions would apply to construction and maintenance for the life of the Proposed Activity.

Additionally, the proposed easement to be established associated with the overhead line will be maintained which will include a reduction of fuel loads within the easement, creating an asset protection zone. The CEMP will include appropriate bushfire management measures to be implemented during construction and operation.

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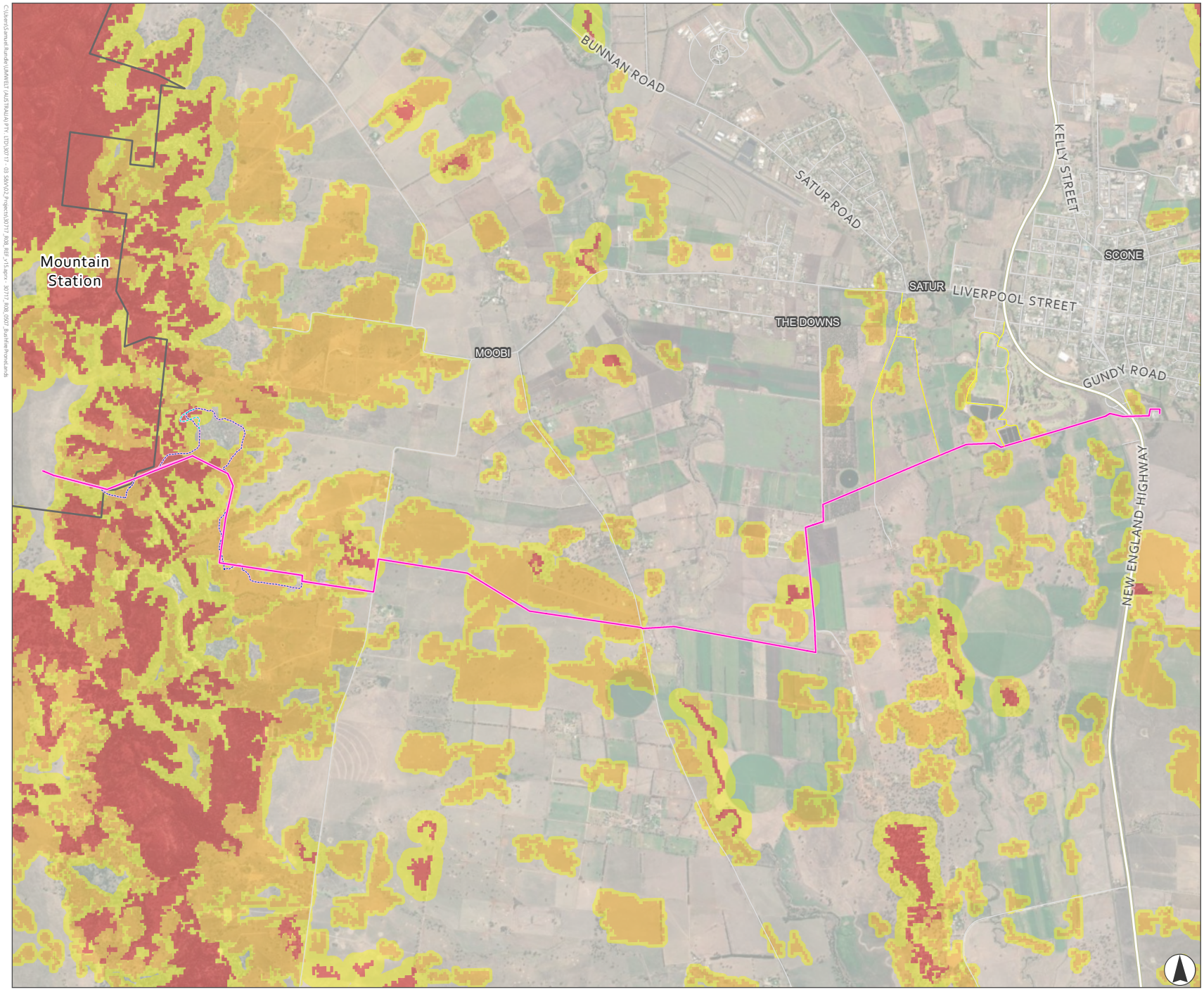
FIGURE 5.7
Bushfire Prone Land Map



Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Proposed 66kV Power Line Route
- Highway
- Main / Local Roads

Proposed Access Track – New

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

Bush Fire Prone Land

- Vegetation Category 1
- Vegetation Category 2
- Vegetation Buffer

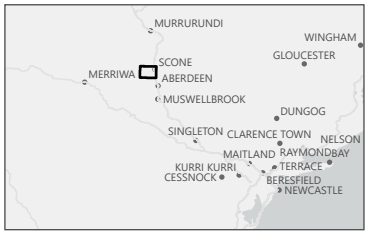


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Image Source: ESRI Basemap (2023) | **Data Source:** NSW DFSI (2023)

5.11.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity to manage bushfire and vegetation are summarised in **Table 5-14**.

Table 5-14: Bushfire Mitigation Measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Vegetation clearing and pruning to comply with Ausgrid's NEG-OH21 Vegetation Safety Clearances / ISSC3 Guideline for Managing Vegetation Near Powerlines.	✓	✓	✓
During a total fire ban, no open fires or hot works are to be undertaken unless in accordance with an exemption granted by the NSW RFS.	-	✓	✓
Any hot works during a total fire ban must be in accordance with an approved exemption in accordance with DG33. This includes grinding, welding, brazing, oxy-cutting, heat treatment or processes that generate heat or continuous streams of sparks. The Contractor or ASP must obtain their own exemption.	-	✓	✓
Hot work activities to be clear of combustible matter by at least 3 m. Keep adequate firefighting equipment immediately at hand. Avoid driving a vehicle through long grass or operating motors and equipment in proximity to vegetation.	-	✓	✓
Undertake consultation with the local fire authority prior to commencing hot works to advise of works in bushfire-prone areas and of any access restrictions to fire trails.	✓	-	-
Schedule hot work activities during the more favourable period of the day and week.	-	✓	-

5.11.4 Conclusion

The Proposed Activity is unlikely to affect the environment in relation to bushfire as appropriate mitigation measures outlined in **Section 5.11.3** would readily manage any potential bushfire impacts.

5.12 Aboriginal Heritage

5.12.1 Existing Environment

The Proposed Activity Area is located within Wonnarua country which extends from the Upper Hunter River above Maitland, west to the Great Dividing Range, towards Wollombi. The Local Aboriginal Land Council is the Wanaruah Local Aboriginal Land Council (LALC). No Native Title Claims have been determined within the Proposed Activity Area.

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The Proposed Activity Area is currently utilised for recreation (golf course) and pastoral grazing, with the western portion retaining some vegetation due to the steep inclination and inaccessibility of the hill landforms. The Proposed Activity Area is located across a varied landscape. Whilst portions of the Proposed Activity Area comprise steep inclination hillslopes (the western portion of approximately 2 km from Lot 31 DP750939 to Lot 1 DP1190322), much of the eastern portion (approximately 10 km from Lot 101 DP1118763 to Lot 403 DP1119120) is represented by generally flat to gently inclined plains and terraces. These flatter landforms could be easily traversed and may have facilitated free movements across the immediate area for Aboriginal people prior to the arrival of Europeans, whilst the presence of sandstone formations and outcrops in the west may have provided shelter.

The presence of perennial water courses and associated tributaries within the Proposed Activity Area would suggest that fresh water was available following rains and potentially throughout much of the year. This prevalence of fresh water, in combination with open terrain, would have encouraged grazing mammal species such as kangaroos and wallabies, providing an available source of terrestrial sustenance. Additional edible aquatic species may have been available in the creek lines. Further, before widespread vegetation clearance in the early 19th century, open forests would have dominated the landscape and provided additional natural resources.

In summary, the Proposed Activity Area does contain an array of natural resources which could have allowed for sustainable occupation. The varied terrain may suggest that Aboriginal people utilised the flatter plains to move within the landscape and the sandstone formations of the upper slopes for shelter.

A desktop assessment of the Heritage NSW Aboriginal Heritage Information Management System (AHIMS) and the Commonwealth Department of Environment Protected Matters Search Tool revealed that 16 Aboriginal sites/objects have previously been recorded in proximity to the Proposed Activity Area. The nearest recorded Aboriginal artefact is located 150 m south of the Proposed Activity Area (see **Figure 5-8**)

A specialist due diligence assessment of the Proposed Activity was undertaken by Umwelt in accordance with the NSW *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*[15]. The aim of the assessment is to identify whether or not Aboriginal objects are, or are likely to be, present in the Proposed Activity Area and determine whether or not the Proposed Activity is likely to harm Aboriginal heritage (if present) and whether an Aboriginal Heritage Impact Permit (AHIP) application is required. This assessment is provided in detail as **Appendix 3**.

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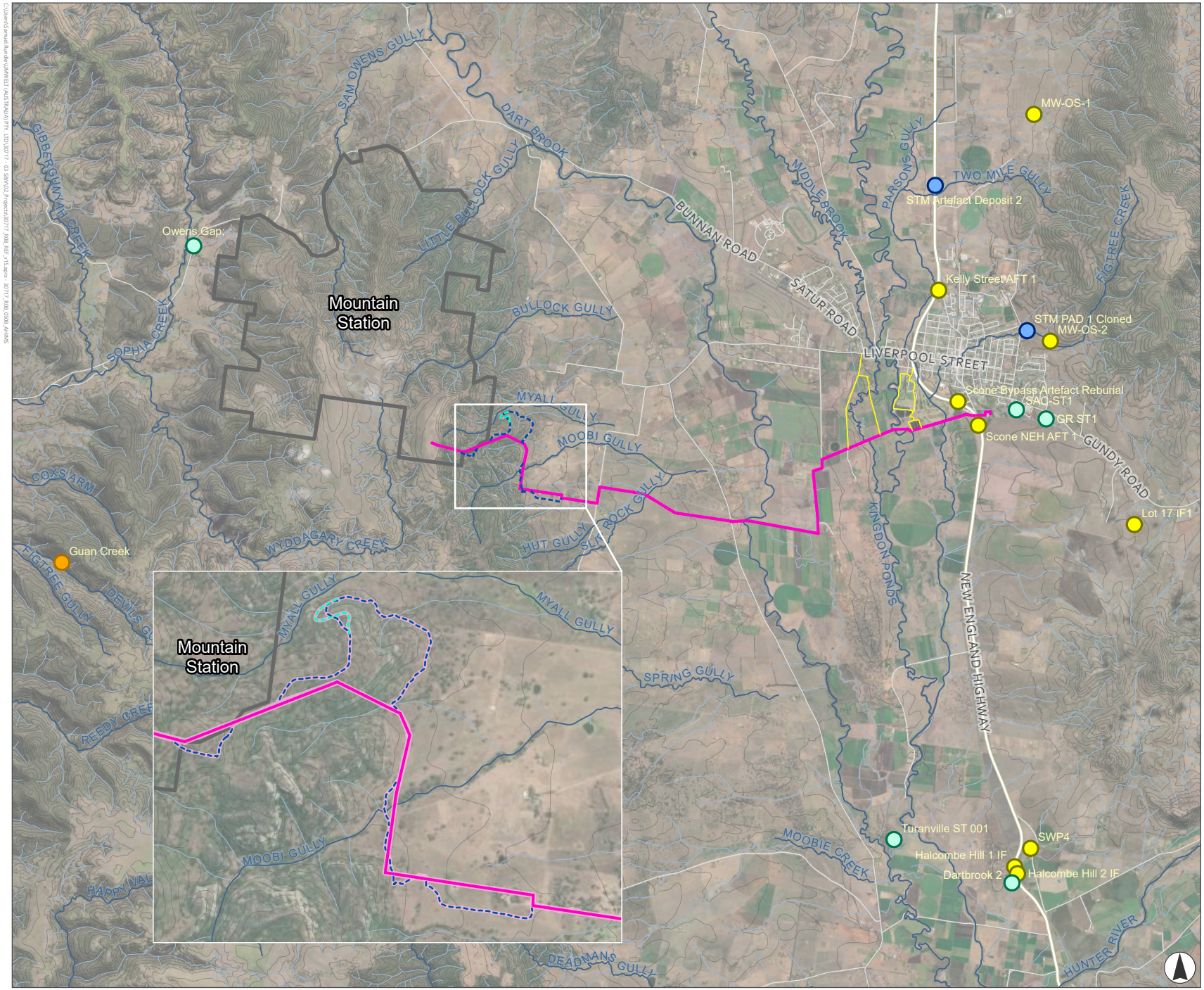

Figure 5.8

Previously recorded Aboriginal heritage sites - AHIMS Data

Legend

- Upper Hunter Energy Park Project Area
- 20m Contour
- Highway
- Main / Local Roads
- Named Watercourse
- Watercourse
- Proposed 66kV Power Line Route
- Proposed Activity Area

AHIMS

- Artefact
- Burial
- Modified Tree (Carved or Scarred)
- Potential Archaeological Deposit (PAD)

Access Route

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

0 1 2 3

Kilometres

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Image Source: ESRI Basemap (2024) | **Data Source:** NSW DFSI (2024)

5.12.2 Potential Impacts

A visual inspection of the Proposed Activity Area was undertaken by Umwelt Archaeologist Alison Fenwick from 15–16 October2024, 1 November 2024, and 1–2 December 2025.

The Proposed Activity Area generally consisted of various landform elements, including flat and flood plains, to undulating hillslopes with moderate to high inclines. Visibility across the Proposed Activity Area was generally low due to dense surface vegetation (e.g. pasture grass and low-lying shrubs). The proposed alignment transects several watercourses, including (from east to west along the Proposed Activity Area); Parsons Gully, Middle Brook, Kingdom Ponds, Dart Brook and Moobi Gully. Where practicable, these watercourses were inspected; however, due to erosional damage and stock use, the banks were generally unstable or inaccessible.

Sensitive landforms in proximity to these watercourses were also inspected for potential Aboriginal sites/objects. The focus remained on elevated landforms with direct access to the watercourses. Four areas of archaeological sensitivity were identified in association with Middle Brook, Kingdom Ponds, and tributaries of Moobi Gully (as shown in **Figure 5-9**).

One potentially modified tree was identified within pastoral flats to the west of Dart Brook within the Proposed Activity Area. The tree was identified in Lot 1 DP1138706, as a white box with an oval shaped scar on the lower portion of the trunk, the scar facing southwards. The wound currently serves as an entrance to a tree hollow, likely utilised by smaller animals. Further assessment concluded that the visible scar is the result of limb damage or a similar natural process and is not cultural in origin.

During the visual inspection, four areas within the Proposed Activity Area were identified as being potentially sensitive. The four areas (Area 1, Area 2, Area 3 and Area 4) are situated directly adjacent to perennial watercourses (within 200 m) and consist of an elevated landform.

The visual inspection also identified two overhangs near the Proposed Activity within Lot 75 DP750950. The conglomerate rock formations contained small overhanging areas; however, no Aboriginal objects, potential archaeological deposits or artwork were identified within the overhangs. As such, these areas were considered unlikely to be utilised by Aboriginal people for shelter and have not been registered as an Aboriginal site on AHIMS..

Notwithstanding, if potential heritage is identified during works, the works would cease, access restricted and the Environmental Officer contacted to investigate.

The Proposed Activity would not impact on any known Aboriginal sites. As the proposed activity will consist of ground disturbance works in isolated locations and is not anticipated to require widespread vegetation clearance, it is considered unlikely that previously unidentified Aboriginal objects or sites will be impacted. It has been concluded that a more detailed investigation (and an AHIP application) is not currently required. Works proposed to occur within the extent of the archaeologically sensitive area 1 , 2 , 3 and 4 are considered unlikely to impact subsurface Aboriginal objects, or sites, should they be present. This is due to the minor and isolated nature (a singular inclusion of a pole for the overhead line) of the works. However, should more substantial ground disturbance works be required, outside of the bounds of the described pole installation, further assessment will be required.

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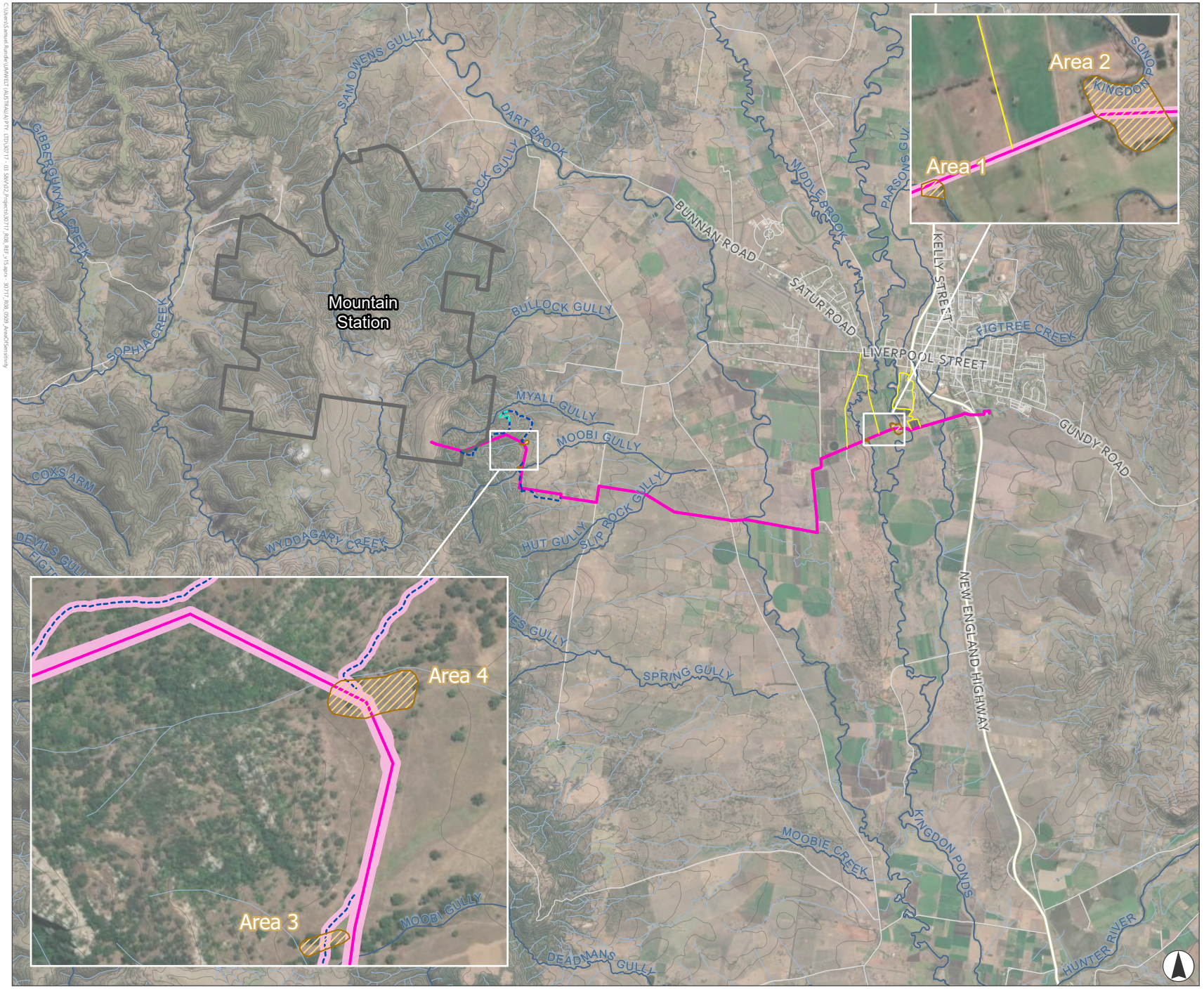

Image Source: ESRI Basemap (2024) | **Data Source:** NSW DFSI (2024)

Figure 5.9

Area of Sensitivity

Legend

- Upper Hunter Energy Park Project Area
- Area of Sensitivity
- 20m Contour
- Highway
- Main / Local Roads
- Named Watercourse
- Watercourse
- Proposed 66kV Power Line Route
- Proposed Activity Area

Access Route

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

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5.12.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity in relation to Aboriginal Heritage are summarised in **Table 5-15**.

Table 5-15: Aboriginal Heritage Mitigation Measures

Mitigation measures	**Implementation of mitigation measures**		
	Design	**Construction**	**Operation**
All workers are to be made aware of sensitive areas and the need to avoid impacts.	-	✓	-
The assessment provided in **Appendix 3** concludes that within Archaeologically Sensitive Areas 3 and 4 no earthworks should occur for the proposed access track. Access within the Sensitive Areas is only permitted via existing tracks and cleared areas managed through the use of geotextile fabric and/or ground protection matts, where required. Should more substantial ground disturbance works be required for the access track within these areas further assessment may be required. This would take the form of an Aboriginal Cultural Heritage Assessment (ACHA). This ACHA would be required to further investigate the archaeological potential and/or Aboriginal cultural heritage values of the aforementioned areas of sensitivity. Aboriginal cultural heritage investigation works must be undertaken by a suitably qualified heritage consultant in accordance with Requirement 11 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b) and include the preparation of an Aboriginal Cultural Heritage Assessment Report (ACHAR), compiled in accordance with Section 3 of the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW. A process of Aboriginal community consultation carried out in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a) must also be demonstrated.	-	✓	-
The assessment provided in **Appendix 3** concludes that the works proposed to occur within the extent of Archaeologically Sensitive Area 1, 2 and 4 (being a single transmission line pole) are unlikely to impact subsurface Aboriginal objects or sites, should they be present. This is due to the minor and isolated nature (a singular inclusion of a pole for the overhead line) of the works. Should more substantial ground disturbance works be required, outside of the bounds of the discussed pole installation, further assessment will be required..	-	✓	✓

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
If additional archaeological assessment is required as Aboriginal objects and/or sites are identified during the archaeological investigation, and Aboriginal sites/objects cannot be avoided by the Proposed Activity, the Proposed Activity would an application for an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the *National Parks and Wildlife Act 1974* (NPW Act 1974). The recommended approach for an ACHAR identified above would be used to support the application.	-	✓	✓
All relevant contractors and personnel should be made aware of the nature and location of previously recorded Aboriginal sites that lie within and near the Proposed Activity Area. All relevant contractors and personnel should also be made aware of their legal responsibilities under the NP&W Act 1974 and the need to avoid impacts on Aboriginal sites.	-	✓	✓
If, in the unlikely event that Aboriginal objects/sites are identified during the Proposed Activity, all works in the area must cease immediately and the Unexpected Heritage Finds Procedure presented in **Appendix 3** must be implemented.	-	✓	✓
In the event that the proposed design and/or location of the proposed works is altered for any reason, impacting areas or land that have not been assessed in this report, further Aboriginal heritage assessment will be required. Any proposed alteration must be evaluated by a qualified heritage consultant to determine if the location represents a risk to Aboriginal cultural heritage.	-	✓	✓

5.12.4 Conclusion

It is considered that the Proposed Activity and associated works will not impact known Aboriginal objects and are unlikely to impact subsurface archaeological deposits. This is due to the proposed works consisting of ground disturbance works in isolated locations and are not anticipated to require significant vegetation clearance as discussed in **Section 5.10.4**. Additionally, mitigation measures outlined in **Section 5.12.3** would readily manage any potential impacts.

5.13 Non-Aboriginal Heritage

5.13.1 Existing Environment

Umwelt prepared a Heritage Impact Statement (HIS) to support the REF (provided in **Appendix 4**). This assessment was conducted in order to assess the potential physical and visual impacts the Proposed Activity may have on the identified listed heritage items, as well as impacts on potential unlisted heritage items or areas of potential historical archaeological remains located within or adjacent to the Proposed Activity Area.

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A desktop assessment was conducted using the Australian Heritage Database[16], NSW State Heritage Inventory[17] and the Upper Hunter Shire LEP 2013. The results of these searches were that there are no Commonwealth or State Heritage listed items in the Proposed Activity Area. Two (2) items listed on Schedule 5 of the Upper Hunter LEP (2013) are located within or near the Proposed Activity Area, **Table 5-16** and **Figure 5-10** provide a summary of these heritage items. A number of local heritage items were identified as being associated with the Scone township and broader Upper Hunter locality (as shown in **Figure 5-10**); however, these are outside the Proposed Activity Area and will not be impacted by the Proposed Activity.

Table 5-16: Non-Aboriginal Heritage Items

Location	Local Heritage listing	Details	Distance from the route
Lot 2, DP 635388 **Lot 104, DP 1093507** **Lot 1 DP1237000**	St Aubin's House (I23)	A substantial brick house, cement rendered inside and out, with eight main rooms in the main block, which extend to two wings to form a courtyard. The house is probably the most important early work designed by and built for William Bakewell. Built on land originally granted to William Dumaresq.	The homestead is located approximately 500 m south of the Proposed Activity Area.
Lot 912 DP1152423	Invermein (I24)	A house built of brick nogging, sandstock brick in a timber frame, covered in weatherboards. The property of Invermein has important historic associations with the town of Scone. District court was held there until Scone was established.	The curtilage of the mapped heritage listing boundary is located within the Proposed Activity Area; however, the Proposed Activity is not located within the lot associated with the listing. The homestead is located approximately 800 m south of the alignment.

5.13.2 Potential Impacts

A visual inspection of the Proposed Activity Area was undertaken by Umwelt Archaeologist Alison Fenwick on 15–16 October and 1 November 2024.

The Proposed Activity Area intersects with public recreational grounds and infrastructure in the east, inclusive of Scone Golf Course and the Scone Wastewater Management facility. Two introduced or planted stone fruit trees were identified in isolation to the west of the waste facility, on the banks of Middle Brook. No structures or additional historic features were identified in association with these stone fruit trees; however, this may indicate historical land use. Within the western portion of the Proposed Activity Area, residential dwellings and ancillary structures associated with the agricultural use of the land were identified. However, such structures were located outside, but in proximity to, the Proposed Activity Area. The western portion of the Proposed Activity Area is largely dominated by privately owned agricultural land and, as a result, had been cleared extensively of vegetation in order to facilitate pastoral grazing of livestock. Due to this, the landscape is expansive, with few visual barriers.

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The Proposed Activity Area is located in proximity to two local listed heritage items: ‘St Aubin’s House’ and ‘Invermein’. The proposed alignment while inside the curtilage of the heritage item ‘Invermein’ (I24), is outside of the boundary of the ‘Invermein’ property, Lot 912 DP1152423. The proposed alignment will follow the property boundary of the ‘St Aubin’s House’ property and will remain to the north of the property boundary fence. It is not anticipated that the Proposed Activity will physically interact with the curtilage of the item or the curtilage of the property. The proposed overhead line does, however, intersect with the curtilage of the ‘Invermein’ heritage item at the banks of Middle Brook creek. However, as stated is outside of the boundary of the ‘Invermein’ property, Lot 912 DP1152423 and at a location that has been cleared of vegetation and contains no structures or features of historical significance.

The Proposed Activity Area will not directly intersect with the ‘St Aubin’s House’ (I23) heritage listing; however, the proximity of the proposed alignment and the listing boundary (i.e., the property boundary fence) has the potential to result in visual impact to the item. As stated above, the Proposed Activity Area may intersect with the ‘Invermein’ heritage item; however, it is outside of the boundary of the ‘Invermein’ property, Lot 912 DP1152423 and the area of interaction consists of cleared paddocks and no structures or features of interest were identified. The proximity of the proposed alignment to the existing Invermein homestead may visually impact the item.

This assessment has considered the nature of the Proposed Activity and the significance of local heritage items within, or in proximity to the Proposed Activity Area, and has assessed the potential impacts (both direct and indirect) to the heritage items. Overall, it has been found that the Proposed Activity will not physically impact the ‘St Aubin’s House’ or ‘Invermein’ heritage listing. This conclusion is based on the currently available design details and may be subject to revision should further changes to the Proposed Activity take place.

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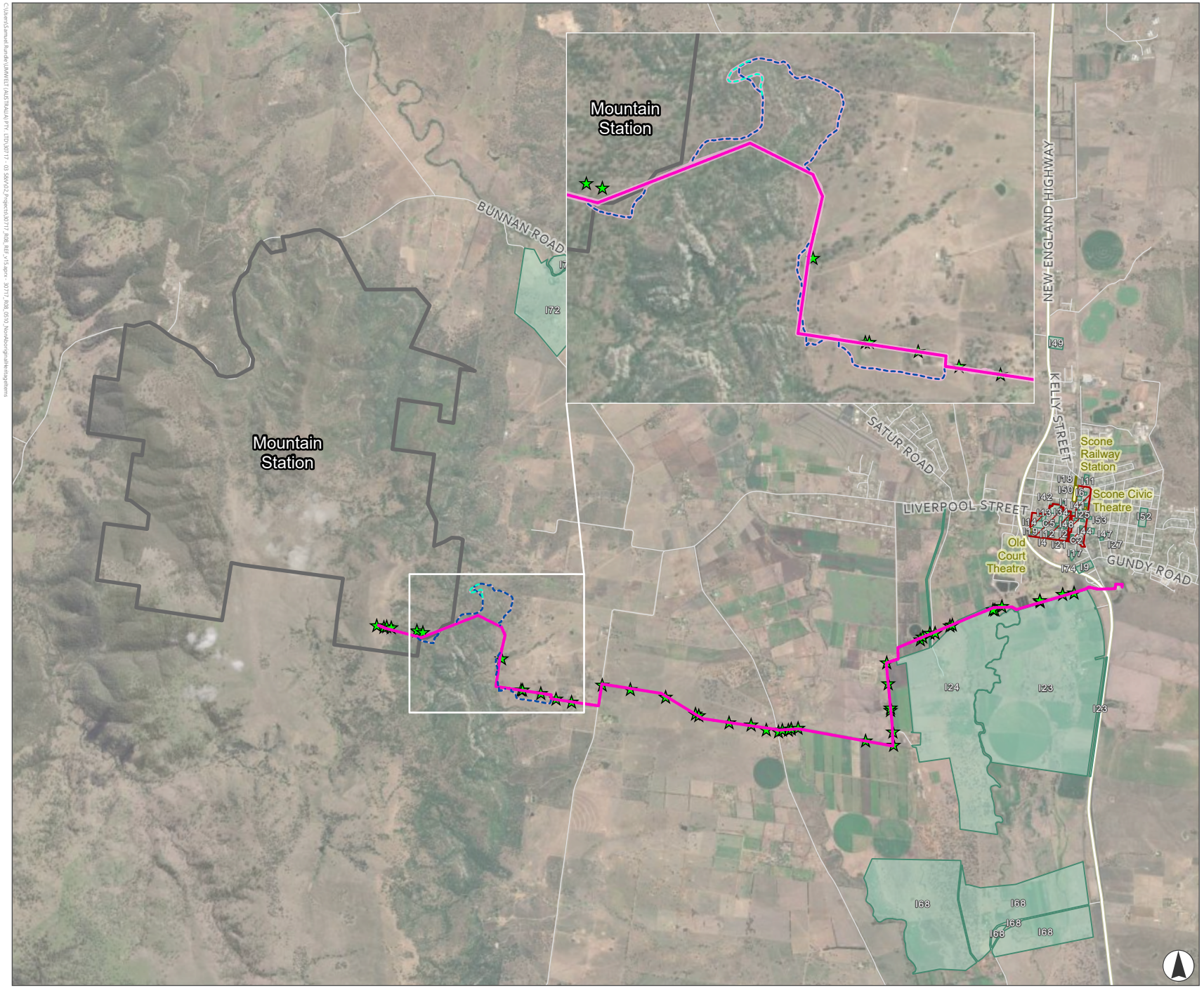

Figure 5.10

Non-Aboriginal Heritage Items

Legend

- Visual Inspection Point
- Highway
- Main / Local Roads
- Upper Hunter Energy Park Project Area
- State Heritage Register
- Proposed Activity Area

LEP Heritage Sites

- Conservation Area - General
- Item - General

Proposed Access Track – New

- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

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Kilometres

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5.13.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity to manage impact on non-Aboriginal Heritage in the Proposed Activity Area are summarised in **Table 5-17**.

Table 5-17: Non-Aboriginal Heritage Mitigation Measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
All workers are to be made aware of sensitive historic heritage-listed areas and the need to avoid impacts.	-	✓	-
Construction activities within the curtilage of the 'Invermein' (I24) local heritage item should be avoided as far as practicable. Where pole installation is required within the mapped curtilage of the item, reasonable measures should be taken to reduce disturbance as far as reasonably practicable. We note that there is currently no construction activity proposed to take place within Lot 912 DP1152423 associated with the 'Invermein' property.	-	✓	-
All on-site personnel are to be made aware of their obligations under *Heritage Act 1977* (NSW).	-	✓	-
In the unlikely event that unexpected historical archaeological material is discovered during works, work must cease, and an appropriately qualified archaeologist must be consulted. If appropriate, the Heritage Council should be notified in accordance with Section 146 of the *Heritage Act 1977*.	-	✓	-

5.13.4 Conclusion

The Proposed Activity is unlikely to affect the environment in relation to non-Aboriginal heritage as it is considered highly unlikely that the Proposed Activity would impact any significant historical archaeological remains within the local heritage curtilage of 'Invermein' (I24) or 'St Aubin's' (I23) and the potential for historical archaeological remains to be present within the wider Proposed Activity Area is negligible. Appropriate mitigation measures are outlined in S**ection 5.13.3** to manage potential impacts.

5.14 Visual and Aesthetics

5.14.1 Existing Environment

The existing visual environment of the Proposed Activity Area consists of rural land uses dominated by predominantly flat terrain east of the Mt Moobi ridgeline. The Mt Moobi ridgeline is dominated by rocks and other geological features, and steep slopes rising from the plains west of Scone.

Existing infrastructure in the area is dominated by residential housing with some ancillary infrastructure.

Figure 5-1 shows the Proposed Activity and the land use adjacent to the Proposed Activity.

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5.14.2 Potential Impacts

Potential visual impact associated with the Proposed Activity may be determined through visual sensitivity of the site and the magnitude of changes. The Proposed Activity Area has a low visual sensitivity. Visual modifications because of the Proposed Activity would include:

- established tree vegetation clearing (refer to **Section 5.10**), minimised through the use of existing cleared easements and agricultural properties
- installation of 81 poles of up to 20 m to 55 m in height and associated lines
- short-term construction activities.

The Proposed Activity would be visible from residences and road users of adjoining properties along the Proposed Activity alignment.

The Proposed Activity would introduce new infrastructure into a landscape which is currently dominated by open pastoral fields or recreational areas, remnant vegetation, with few dwellings and ancillary structures. However, the design of the proposed activity is not considered to be overly prominent and there is existing infrastructure of similar nature within the Proposed Activity Area. As such, it is considered that the introduction of the Proposed Activity would constitute a low visual impact.

Short-Term Visual Impact

The construction phase of the Proposed Activity would have a visual impact on local views due to the presence of plant and equipment and the removal of some vegetation. The extent of these temporary impacts would vary throughout construction, with the pole installation and construction stage likely to be most visually prominent. As construction impacts would be short-term and the adjoining stakeholders would be consulted about the works, the overall impact during construction is not expected to be significant. Disturbed areas would be reinstated as soon as practicable to further ameliorate short-term visual impact.

Long-Term Visual Impact

Long-term visual impact on local views would occur as a result of the 16 m to 20 m high poles and associated lines. The associated visual impact would be limited due to the large rural allotments and level of existing development and infrastructure.

The Proposed Activity is designed to be complementary to the local area by ensuring the height of the poles is within 20m to avoid dominating the landscape. The poles will also be designed to be coloured complimentary to the surrounding landscape.

Once constructed, the Proposed Activity would require minimal maintenance, reducing the need for plant and equipment to access the site. Maintenance work would form part of Ausgrid's existing maintenance program.

5.14.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity in relation to visual impacts are summarised in **Table 5-18**.

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Table 5-18: Visual Mitigation Measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Consult with affected stakeholders about the Proposed Activity and the timing of construction commencement and duration.	✓	✓	-
Clear the minimum amount of vegetation necessary and undertake replacement planting in consultation with the Council.	-	✓	-
Maximise pole separation distances.	✓	-	-
Use coloured poles conducive to the rural landscape to reduce visual impact by allowing integration with existing vegetation.	✓	✓	✓

5.14.4 Conclusion

The potential visual impacts associated with the Proposed Activity will be limited by minimising the amount of vegetation clearing as far as practicable and replacement planting would be undertaken in consultation with Council. Additionally, mitigation measures outlined in **Section 5.14.3** would readily manage potential impacts.

5.15 Traffic and Access

5.15.1 Existing Environment

The Proposed Activity Area would only be accessed directly from local roads including Cliftlands Road, Nandowra Road and Moobi Road (**Figure 5-11**). These local roads offer existing access to the Proposed Activity Area and no new permanent access tracks are required to be established for the Proposed Activity. The New England Highway provides a bypass around the township of Scone with access provided via two (2) intersections (both via Kelly Street) to the north and south of Scone. Construction traffic will utilise these intersections to access the identified local roads; however, no direct access to the Proposed Activity Area from the New England Highway is proposed.

The proposed overhead line does cross the New England Highway; however, works in the vicinity of the New England Highway will be undertaken outside the road reserve and within the Proposed Activity Area and no vehicle access directly to the New England Highway will be required. The existing Scone substation is accessed directly from Kelly Street, via the New England Highway on the southern side of Scone.

The local transport network in the area of the Proposed Activity Area is predominantly used by local residents and some rural industry for transport to access residences and businesses. Transport in the Proposed Activity Area is heavily reliant on the local road network for private vehicle usage.

Overall, traffic surrounding the Proposed Activity Area is dominated by residential vehicle movements and a low number of pedestrians.

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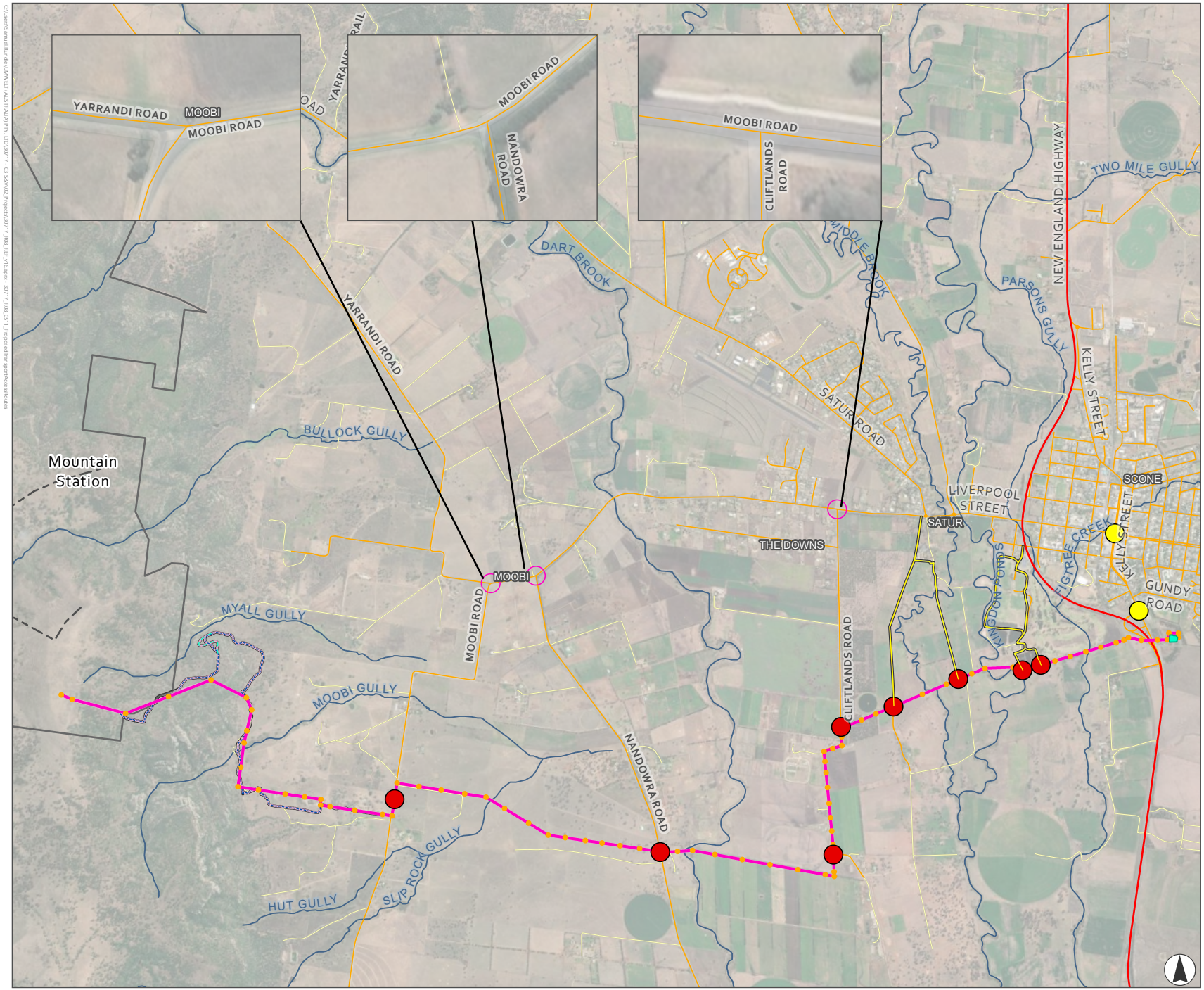
FIGURE 5.11

Proposed Transport Access Routes



Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Substation
- Watercourse
- Proposed Pole locations

Traffic Management

- Moobi Road Intersection
- Overhead Line Access Point
- Local Intersection

Proposed Access Track – New

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

Roads

- Highway/State Roads
- Main Roads
- Local Roads
- Tracks

0 0.5 1

Kilometres

Scale 1:50,000 at A4
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5.15.2 Potential Impacts

The Proposed overhead line crosses the New England Highway, which is a Classified Road. The line also crosses the Northern Railway Line. Transport for NSW (TfNSW) and the Australian Rail Track Corporation are being consulted in relation to the Proposed Activity and any necessary approvals would be obtained prior to construction commencing. A cross-section of the proposed overhead line with the New England Highway and the Northern Railway Line is provided in **Figure 5-12**. As shown in this figure, the Proposed Activity including pole locations does not require any disturbance within the road reserve of the New England Highway.

Per **Figure 5-12**, the overhead clearance above the New England Highway is 8.18 m. This is above the 4.6 m maximum of Oversized and Overmass (OSOM) vehicles under the *Heavy Vehicle (Mass, Dimension and Loading) National Regulation (NSW) (2013 SI 247a)*. A Traffic Management Plan (TMP) is required for high-risk OSOM movements which includes OSOM vehicles with a height greater than 5.2 m and within 200 millimetres of an overhead structure. Additionally, Ausgrid's minimum clearance over the carriageway of roads under the NS220 Overhead Design Manual[18] is 7.5 m which also exceeds those provided for in the Australian Standard AS/NZS7000:2016 Overhead Line Design. Therefore, the Proposed Activity has been designed to have a minimum clearance above the New England Highway which exceeds the predicted height of OSOM vehicles which may use this transport route and exceeds minimum design parameters.

The Proposed Activity will not be accessed directly from the New England Highway. The local roads servicing the construction of the proposed activity will be accessed via the New England Highway; however, this would only be from the existing intersections which have sufficient capacity to accommodate the relatively low traffic volumes associated with the construction phase. The proposed overhead line does cross the New England Highway; however, works in the vicinity of the New England Highway will be undertaken outside the road reserve and within the Proposed Activity Area and no vehicle access directly to the New England Highway will be required. The existing Scone substation is accessed directly from Kelly Street, via the New England Highway on the southern side of Scone. Per **Section 1.8.3**, aerial stringing will be undertaken to construct the Proposed Activity over the New England Highway.

During construction, up to 30 vehicles would be required at any one time. Vehicles associated with the Proposed Activity would include light vehicles and up to four (heavy vehicles), such as cranes and boring equipment. Traffic movements along the Proposed Activity Area are expected to cause some minor disruption to local roads. Construction would also result in temporary changes to traffic arrangements on local roads. Portions of some roads would need to be temporarily blocked and access may change or be reduced to some locations for short periods of time. No new permanent access tracks are required to be established for the Proposed Activity Area. Upgrading of an existing access track and a new access track will be required to provide access during construction in steep terrain of Moobi ridge however, will only require the clearance of vegetation for a corridor and will not require major works. Access to the Proposed Activity Area via the local road network and existing internal access tracks along the easement is feasible elsewhere along the alignment.

A traffic management plan (TMP) would be prepared in consultation with the Upper Hunter Shire Council and in accordance with the Traffic Control at Worksites (TfNSW, 2022) and AS1743.3 Traffic Control Devices for Projects on Road (2019)[19] and would be implemented during construction. The TMP would also include allocated areas for staff parking. The measures implemented through the TMP would minimise the potential temporary traffic disruption resulting from the proposed activity.

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There may be some localised disruption to the community around the immediate construction area (during delivery of construction equipment and materials) in terms of a reduction in pedestrian access and disruption to vehicular traffic and parking during construction works. Any inconvenience to pedestrians during construction or maintenance would be minimised by ensuring that there is an alternative route. Additionally, residents, public authorities and commercial organisations would be notified via a letterbox drop of upcoming works and any associated disruption.

During operation, no traffic-related impacts are expected, and maintenance-related traffic will utilise existing transport routes.

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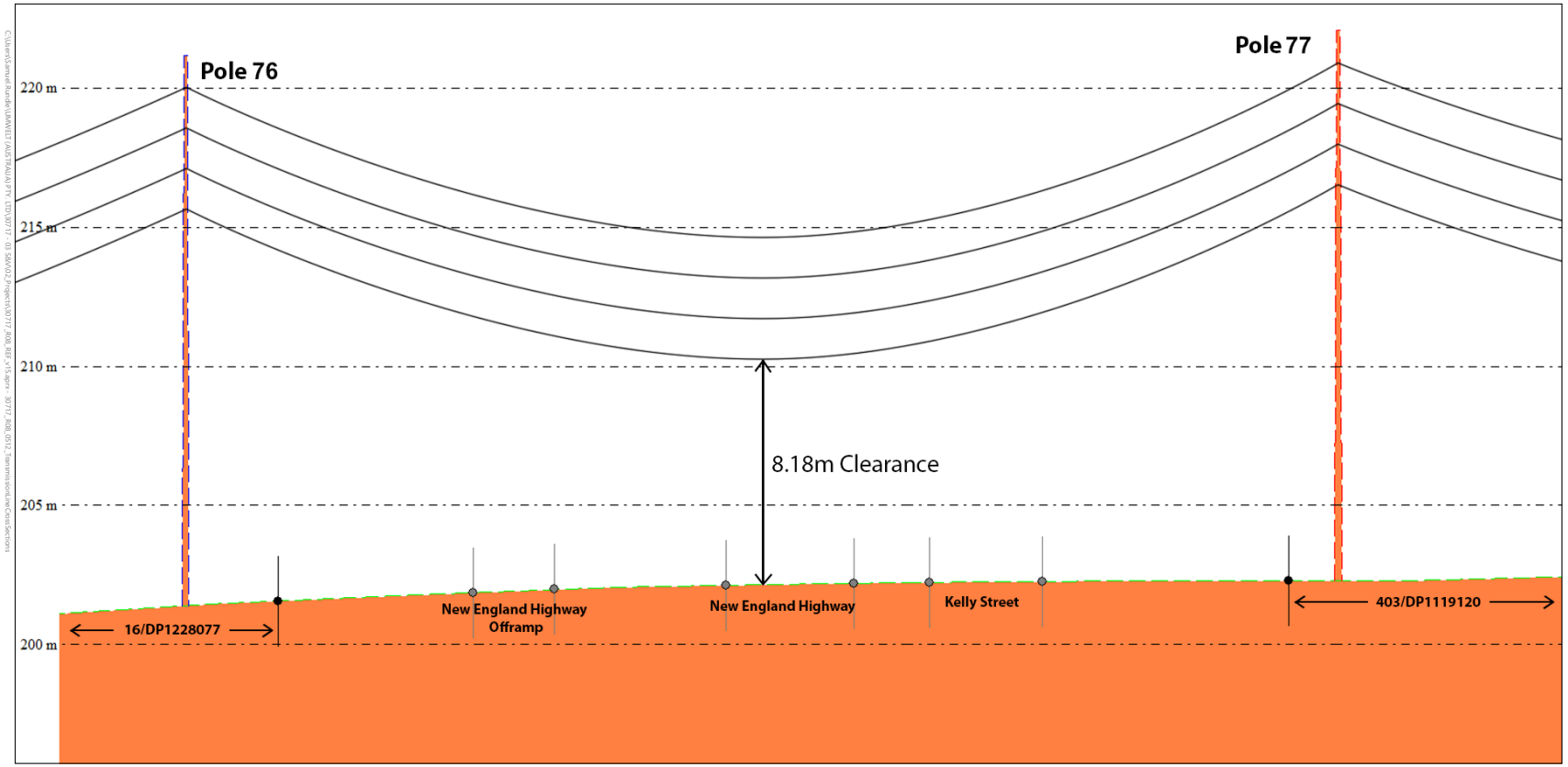
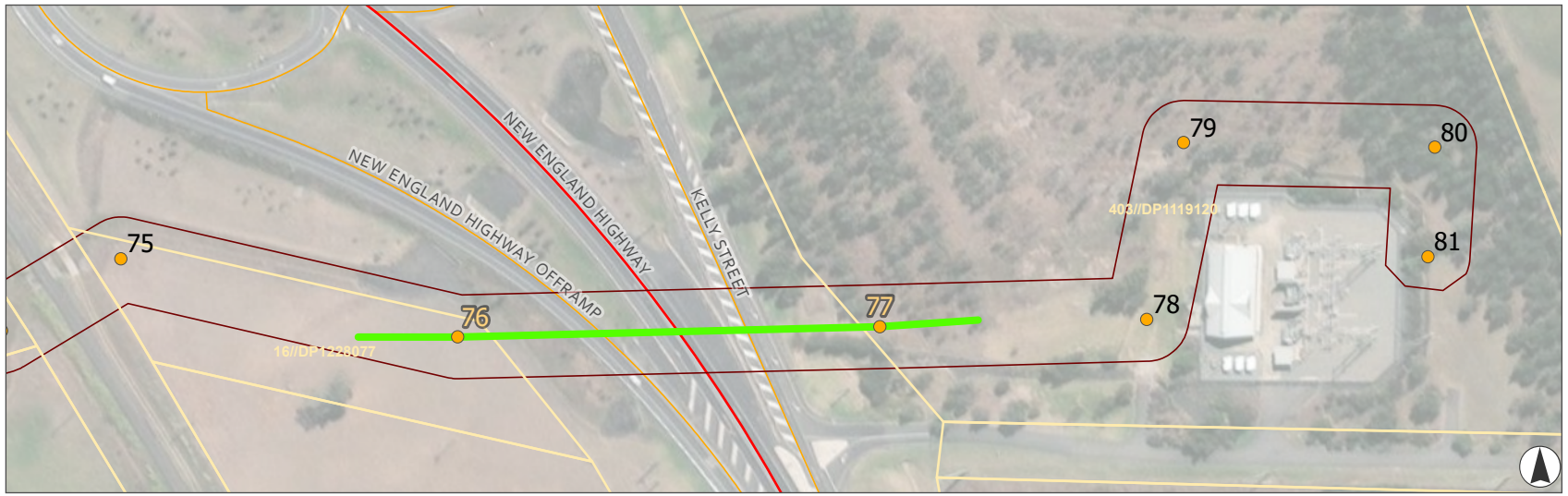
FIGURE 5.12
Transmission Line Cross Sections





Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Proposed 66kV Power Line Route
- Profile
- Watercourse

Roads

- Highway/State Roads
- Main Roads
- Local Roads

0 50 100

Metres

Scale 1:2,500 at A4
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5.15.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity are summarised in **Table 5-19**.

Table 5-19: Traffic and access mitigation measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Where works are proposed on a classified road, consent is required under section 138(1) of the *Roads Act 1993*. To apply for a section 138 consent, write to TfNSW for classified state roads or the relevant local council for classified regional roads to request approval, providing a description of the work and including a plan showing the extent of the works.	-	✓	-
A Traffic Management Plan will be prepared in consultation with Council and TfNSW and implemented as part of the CEMP to comply with TfNSW and Council requirements. The Traffic Management Plan will be prepared in accordance with the Traffic Control at Worksites (TfNSW, 2022) and AS1743.3 Traffic Control Devices for Projects on Road (2019). The Traffic Management Plan will include the following: • Confirmation of haulage routes • Site specific traffic control measures (including signage) to manage and regulate traffic movement, including pedestrians and cyclists Construction contractor Timing Pre-construction and construction • Requirements and methods to consult and inform the local community of impacts on the local road network • A response plan for any construction traffic incident • Measures to minimise potential cumulative impacts on traffic and access. • Any cumulative impact of construction traffic movements from other Ausgrid and non-Ausgrid works • Communication plan - all potentially affected residents and businesses are to be provided with 48- hours' notice of any access changes to properties. Where residents and businesses are directly affected by the work (e.g. their access will be restricted), one week's notice must be given.	-	✓	-

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5.15.4 Conclusion

In relation to traffic and access, as the construction period is temporary, localised and short-term in nature, the Proposed Activity is unlikely to impact the environment. Once in operation, the Proposed Activity would have minimal impact on the local traffic network. Mitigation measures outlined in **Section 5.15.3** would readily manage any potential impact and a TMP will be included in the CEMP.

5.16 Social and Economic

5.16.1 Existing Environment

The Proposed Activity is located within the suburbs of Scone, Moobi and Owens Gap within the Upper Hunter Shire LGA. Land use within the area is characterised by a mix of residential and rural primary industry.

From the UHEP Project Area, the Proposed Activity alignment begins in Owens Gap, in which there are 42 private dwellings and a population of 80 (ABS, 2021). The alignment then passes through Moobi, in which there are 61 private dwellings and a population of 168 (ABS, 2021) and finishes at the existing scone substation on the edge of Scone (pop. 5,824) (ABS, 2021).

The Proposed Activity is proximal to several rural localities with low recorded populations (<600 people) at the time of the 2021 Census, including Wingen to the north (pop. 277), Gundy to the east (pop. 165), Dartbrook to the south (pop. 110) and Bunnan to the west (pop. 94).

Key industries within the Upper Hunter Shire include coal mining, horse farming, beef cattle farming, meat processing and aged care residential services. Owens Gap shares the top industry of mining, but is largely occupied by agriculture, forest and fishing, construction, and education and training. Moobi shared more industries with Owens Gap, as well as public administration and safety, and healthcare and social assistance.

There are various proximal State Significant Development (SSDs) projects in the region, which is relevant to the Proposed Activity relating to workforce availability/capacity, access to local services and infrastructure, housing, transportation and site access. Additionally, the public sentiment and perceptions, and the level of community / regional support attributed to the Proposed Activity given its link to the larger UHEP Project. SSDs within the Upper Hunter region include the Upper Hunter Battery Energy Storage System (BESS) in Aberdeen (not approved yet), the Upper Hunter South Solar Farm in Denman (not approved yet), and the Hunter Transmission Project between Bayswater and Olney (not approved yet).

5.16.2 Potential Impact

The Proposed Activity would allow the UHEP Project to connect to the existing electricity grid and, therefore, contribute to an increase in the reliability of electrical supply, resulting in a positive impact on the community.

Construction projects such as this Proposed Activity also create opportunities for suppliers, contractors and consultants which creates flow-on benefits for local communities. Discretionary spending by civil contractors during the construction period would benefit the local region.

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Short-term impacts on the community during the construction phase of the Proposed Activity include increased traffic intensity, altered traffic conditions, maintaining access to properties and noise. Interruption to local traffic movements as well as agricultural movements of livestock and general property access were identified as the key community impacts gathered from local engagement undertaken as described as **Section 2.**

During the consultative process, as detailed in **Section 2**, the community expressed concern over the social consequences resulting from the selection of an alignment that passed through the properties used for agricultural business. These concerns included impacts from traffic interruptions and interruptions to livestock movements. The issues associated with noise, visual aesthetics and traffic have been assessed in detail in this REF. The CEMP to be prepared will include considerations of the impacts assessed in this REF and be developed to address any potential impacts during construction.

Due to the small scale of the works, the socio-economic impacts of the Proposed Activity would be localised.

5.16.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity to manage social and economic impacts are summarised in **Table 5-20**.

Table 5-20: Social and Economic Mitigation Measures

Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
EMF, noise, visual and traffic mitigation measures (**Sections 5.3.3, 5.4.3, 5.14.3** and **5.15.3**) would reduce potential impacts on the surrounding community.	✓	✓	✓
A CEMP will be prepared which will include safeguards and management measures included in this REF to reduce potential impacts on the surrounding community. The CEMP will include the required workforce and considerations for where this workforce would be sourced.	✓	✓	-
The local community would be notified when construction work is to begin. The notifications will provide indicative timing for planned construction works to allow the local community to plan and organise around the Proposed Activity's impacts on the local road network where possible.	✓	✓	-
Keep a register of any complaints, including details of the complaint such as date, time, person receiving complaint, complainant's contact number, person referred to, description of the complaint, time of verbal response and timeframe for written response where appropriate. Notify Ausgrid Environmental Services of complaints received and method of response required immediately after action complaint in register.	-	✓	-

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5.16.4 Conclusion

Due to the isolated nature of the Proposed Activity and the short duration of construction works, the Proposed Activity is unlikely to result in significant social or economic impact. Additionally, given the short nature of the proposed construction phase, there is limited potential for cumulative environmental impacts. Mitigation measures outlined in **Section 5.16.3** would readily manage potential impacts.

5.17 Cumulative Impact

5.17.1 Existing Environment

Cumulative impacts may be experienced due to the interaction of elements within the Proposed Activity, or with other existing or proposed developments within the locality. Where required, the cumulative impact associated with the Proposed Activity has been incorporated into the assessments within this REF.

As described in **Section 5.16**, there are various proximal developments in the region, which is relevant to the Proposed Activity relating to workforce availability/capacity, access to local services and infrastructure, housing, transportation and site access, the public sentiment and perceptions, and the level of community / regional support attributed to the Proposed Activity.

5.17.2 Potential Impact

The potential impact due to the interaction of elements within the Proposed Activity, or with other existing or proposed developments within the locality is summarised in **Table 5-21**.

Table 5-21: Summary of Cumulative Impacts

Potential impact	Other activities with cumulative impacts	Contribution to overall impact	REF section
Noise	Construction and operational noise from activities listed in **Section 5.4.2**.	Council was consulted in relation to other developments in the area. Council submissions have been given due consideration (see **Section 2.2**). There were no projects raised by Council which required consideration for cumulative noise impacts. Noise impacts during the construction phase would be localised, short term and staged along the separate sections of the Proposed Activity.	5.4
EMF	Existing 66 kV, 33 kV, and 11 kV overhead lines. Existing Scone substation.	The EMF assessment considered the cumulative impact of the construction of an additional overhead line. Cumulative impact considerations do not change the conclusions that the Proposed Activity will comply with relevant guidelines and the principles of prudent avoidance. Council was consulted in relation to other developments in the area. Council submissions have been given due consideration (see **Section 2.2**). The Council's request to relocate the existing 11kV overhead line to be underslung with the	5.3

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Potential impact	Other activities with cumulative impacts	Contribution to overall impact	REF section
		proposed 66kV line was considered in the EMF cumulative impact considerations. It is predicted where the 11kV line will be underslung the 66kV line, that EMF levels will increase cumulatively due to this arrangement. The closest residence to where this occurs along the alignment of the Proposed Activity is 300 m south. The locality of the 11kV line underslung the 66 kV will also not be accessible by the public.	
Traffic	Traffic from activities listed in **Section 5.15.2.**	Council was consulted in relation to other developments in the area. Council and community submissions have been given due consideration (see **Section 2**). There were no projects raised by Council which required consideration for cumulative traffic impacts. The TMP would consider the cumulative impact of construction traffic movements.	5.15
Flora and fauna	Flora and fauna impact from activities listed in **Section 5.10.2**.	The specialist flora and fauna assessment considered the cumulative impact of the construction and operation of the Proposed Activity. Council was consulted in relation to other developments in the area. Council submissions have been given due consideration (see **Section 2**). There were no projects raised by Council which required consideration for cumulative flora and fauna impacts; however cumulative impacts on affected flora and fauna were considered and it is unlikely that the Proposed Activity would increase fragmentation and fauna are likely to utilise the remaining vegetation.	5.10
Visual	Visual impacts from activities listed in **Section 5.14.**	Council was consulted in relation to other development in the area. Council submissions have been given due consideration (see **Section 2**). There were no projects raised by Council which required consideration for cumulative visual impacts. The Proposed Activity is unlikely to significantly alter the current landscape character of the Proposed Activity Area.	5.14
Resources	Materials required for the construction of the Proposed Activity as described in **Section 1.6.**	Given the location of the Proposed Activity Area is within proximity of major transport routes and the current extractive industry which supplies the region, materials required for the construction of the Proposed Activity are not considered to be in short supply. It is not anticipated that the Proposed Activity would substantially increase the demand on these resources. The Proposed Activity would not have a major impact on the demand on resources.	5.9

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5.17.3 Environmental Mitigation Measures

Through implementing the required mitigation measures (as outlined throughout this REF) any associated cumulative impact would be appropriately mitigated.

5.17.4 Conclusion

Due to the isolated nature of the Proposed Activity, and short-term nature of the proposed construction phase, the construction and operation of the Proposed Activity would not result in any cumulative environmental impacts. Through implementing the required mitigation measures (as outlined throughout this REF) any associated cumulative impact would be appropriately mitigated.

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6 Consideration of Environmental Factors

6.1 Clause 171 Factors

In accordance with clause 171 of the EP&A Regulations, the following factors were considered for the Proposed Activity.

Table 6-1: Consideration of clause 171 factors

Clause 171 factors	REF section giving consideration to the factors
Impact on a community	**Section 2** **Section 5**
Transformation of a locality	**Section 5**
Impact on the ecosystem of the locality	**Section 5.10** **Section 5.11**
Reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality	**Section 5**
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	**Section 5**
Impact on the habitat of protected fauna	**Section 5.10**
Endangering any species of animal, plant or other form of life, whether living on land, in water or in the air	**Section 5.10**
Long-term effects on the environment	**Section 5**
Degradation of the quality of the environment	**Section 5.7**
Risk to the safety of the environment	**Section 5.8**
Reduction in the range of beneficial uses of the environment	**Section 5.1**
Pollution of the environment	**Section 5.6** **Section 5.8**
Environmental problems associated with the disposal of waste	**Section 5.9**
Increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply	**Section 5.17**
Cumulative environmental effect with other existing or likely future activities	**Section 5.17**
Impact on coastal processes and coastal hazards, including those under projected climate change conditions	**Section 5.2**

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6.2 Matters of National Environmental Significance

In accordance with the EPBC Act, the following MNES were considered for the Proposed Activity[20].

Table 6-2: Consideration of Matters of NES

Matters of NES	Comment	Likely Impact
World Heritage Properties	No world heritage properties would be potentially affected by the Proposed Activity.	Nil
National Heritage Places	No national heritage places would be potentially affected by the Proposed Activity.	Nil
Wetlands of International Importance	No wetlands of international importance would be potentially affected by the Proposed Activity.	Nil
Commonwealth listed Threatened Species and Ecological Communities	The impact on threatened species, populations or ecological communities listed within Commonwealth (or State) legislation was summarised in **Section 5.10**. The assessment concluded that there would not be a significant impact on threatened species or ecological communities.	**Minor**
Commonwealth listed Migratory Species	No migratory species would be potentially affected by the Proposed Activity, per the assessment summaries in **Section 5.10**.	Nil
Nuclear Action	The Proposed Activity would not result in any nuclear action nor would it require any nuclear action to be undertaken.	Nil
Commonwealth Marine Areas	No Commonwealth marine areas would be potentially affected by the Proposed Activity.	Nil
Great Barrier Reef Marine Park	The Great Barrier Reef Marine Park would not be affected by the Proposed Activity as it is not located within Ausgrid's network area.	Nil
Water resources in relation to coal seam gas development and large coal mining development	Water resources would not be affected by the Proposed Activity as it does not involve coal seam gas or coal mining development.	Nil

6.3 Ecologically Sustainable Development

The Proposed Activity has been assessed against the following four principles of ESD as listed in the *Protection of the Environment Administration Act 1991* (NSW) adopted by the EP&A Act.

6.3.1 Precautionary Principle

The precautionary principles 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'.

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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".[21]

When the precautionary principle applies, measures taken must be proportionate to the level of threat. Evaluation and assessment of alternative options have aimed to reduce the risk of serious and irreversible impacts on the environment. A range of specialist studies were carried out for key issues to provide accurate and impartial information to assist in the assessment process. The assessment of the potential impacts of the Proposed Activity is considered to be consistent with the precautionary principle.

A number of management and mitigation measures have been proposed to minimise potential environmental and social impacts. These measures would be implemented during construction and operation of the Proposed Activity to mitigate any significant environmental impacts occurring as a result of the Proposed Activity.

A CEMP would be prepared prior to construction commencing which will outline all required management and mitigation measures applicable to the Proposed Activity. No management measures or mechanisms would be postponed as a result of a lack of information.

6.3.2 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.'

The key objective of the Proposed Activity is to connect the UHEP Project to the electricity grid to assist with improving electricity supply and reliability, catering for future demand for the benefit of future generations. The Proposed Activity would not result in any impacts that are likely to impact the health, diversity or productivity of the environment for future generations.

The Proposed Activity is considered to be consistent with the principle of inter-generational equity.

6.3.3 Biodiversity

The principle of biological diversity and ecological integrity states that:

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

A flora and fauna assessment was undertaken (summarised in **Section 5.10** and provided in **Appendix 2**) to give due consideration to the Proposed Activity's potential impact on the biological diversity and ecological integrity of the study area.

The Proposed Activity is considered to be consistent with the principle of biological diversity.

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6.3.4 Improved Valuation of Resources

The principle of improved valuation of environmental resources states that:

'Environmental factors should be included in the valuation of assets and services.'

This principle explains that 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; and environmental goals should be pursued in the most cost-effective way.

Consideration of waste generation has been considered in this REF and the Proposed Activity is considered to be consistent with the principle of improved valuation of environmental resources.

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7 Summary of Impacts

A summary of the individual impacts of the Proposed Activity is presented in **Table 7-1.**

Table 7-1: Summary of Impacts

Issue	Comment	Likely Impact
Land use	Land use would be temporarily affected during construction of the Proposed Activity; however, construction-related impacts would be minor, localised and short-term.	**Minor**
Climate change	The Proposed Activity considers sea level rise and flood-prone land and the siting of infrastructure complies with all relevant Network Standards.	Nil
Electric and magnetic fields	EMF levels are within the ICNIRP 2010 Public Reference Levels and there are no further ways to reduce exposure consistent with prudent avoidance.	**Minor**
Noise and vibration	The construction work required for this Proposed Activity would be highly transitory in nature. It is unlikely that construction works would occur for greater than a three-week period in any given location. The Proposed Activity would not involve out of hours work without meeting the notification/respite requirements as outlined in this assessment. Potential impacts would be appropriately managed with the specific construction controls.	**Minor**
Air quality	The Proposed Activity would manage construction activities to minimise dust leaving the worksite and would not generate offensive odours/fumes.	**Minor**
Hydrology	Water quality in the Proposed Activity Area may be affected by spills of hydraulic oil and fuels from equipment or vehicles. Quantities of these products would be kept to a minimum and would be stored in a suitably bunded and covered area. Adequate storage and refuelling controls would be installed to mitigate impacts. Plant and equipment would also be maintained to minimise the potential for leakages. The Proposed Activity may involve discharges of accumulated water; however, potential impacts would be appropriately managed with the specific construction controls. There would be no groundwater extraction.	**Minor**
Geology and soil	The Proposed Activity would manage construction activities to minimise sediment leaving the worksite. Potential impacts would be appropriately managed with the proposed specific construction controls.	**Minor**
Contamination	There is no known contamination sources that may be disturbed during construction of the Proposed Activity. Through the implementation of appropriate construction controls the Proposed Activity would not result in the contamination of soil, surface or groundwater.	Nil
Waste	Waste generated by the Proposed Activity would be classified, handled, transported, stored, tracked and disposed of in accordance with relevant guidelines, procedures and existing licences.	Nil

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Issue	Comment	Likely Impact
Flora and fauna	The plant community types identified within the Proposed Activity Area provide habitat for 34 threatened species that have a at least a moderate likelihood of occurring within the Proposed Activity Area. Assessments of the significance of impacts from the Proposed Activity on the above listed threatened entities were carried out as a Test of Significance under the BC Act and Assessment of Significance under the EPBC Act. It was concluded that the Proposed Activity is not considered likely to significantly impact any TECs, threatened species or their habitats listed under the BC Act or EPBC Act.	**Minor**
Bushfire	The Proposed Activity is within bushfire-prone land and would comply with: • Design requirements in relevant Network Standards such as NS187 Passive fire mitigation design of substations. • Hot works requirements in DG 33 Hotworks and total fire bans. Potential impacts would be appropriately managed with the specific construction controls.	**Minor**
Aboriginal heritage	There are no known Aboriginal heritage sites within the Proposed Activity Area. Control measures have been proposed to manage sentive areas.	**Minor**
Non-Aboriginal heritage	There is one non-aboriginal heritage item (identified as the 'Invermein' Property) mapped as within the Proposed Activity Area; however, the Proposed Activity is not located within the property Lot associated with this heritage item.	Nil
Visual and aesthetics	The Proposed Activity has considered all high aesthetic, scenic, natural or recreational values and there is no unreasonable impact on these areas. All reasonable ways to further reduce visual impacts have been considered.	**Minor**
Traffic and access	Works on a classified road would comply with the relevant approval and road occupancy licence (ROL) requirements. No other significant access corridors would be restricted. Affected residences and businesses would be consulted about the schedule of work. The Proposed Activity would not prevent access or mobility for people with disabilities.	**Minor**
Social and economic	The Proposed Activity is unlikely to significantly affect the environment in relation to social or economic impact and due to the isolated nature of the Proposed Activity, and short nature of the proposed construction phase, no cumulative environmental impacts have been predicted in preparation of the REF.	**Minor**

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Issue	Comment	Likely Impact
Cumulative impact	Due to the isolated nature of the Proposed Activity and the short nature of the proposed construction phase, no cumulative environmental impacts have been predicted in preparation of the REF. Cumulative impacts from other projects/Proposed Activities within the area would be effectively managed with the specific construction controls.	**Minor**

Several of the potential environmental impacts from the Proposed Activity have been avoided or reduced during the design development and options assessment.

The Proposed Activity, as described in this REF, best meets the project objectives with minor impacts on flora and fauna, local traffic, and impacts to nearby residents during construction relating to noise and visual impacts.

Mitigation measures, as detailed in this REF, would avoid or minimise these expected impacts. On balance, the Proposed Activity is considered justified.

On this basis, it is concluded that the Proposed Activity and adopted mitigation measures will result in an overall minor environmental impact.

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8 Environmental Management Plan

8.1 Construction Environmental Management Plan

A construction environmental management plan (CEMP) outlines the environmental objectives of a Proposed Activity, the environmental construction 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.

Once the construction methodology is known, the principal construction contractor would be responsible for developing a CEMP that addresses the scope of works to be undertaken, including site-specific, measurable and achievable actions to the CEMP and the preparation of any appropriate work methods or sub plans.

The CEMP documents all the procedures and processes necessary to ensure that all personnel comply with:

- legislative requirements and relevant non-statutory policies
- specific environmental construction mitigation measures described in **Section 5** of this REF
- requirements outlined in any relevant approvals, permits or licences
- NS174C Environmental Handbook.

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 construction 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 system
- detail emergency procedures, including contact names and corrective actions
- detail process surveillance and auditing procedures
- list complaint-handling procedures
- detail quality assurance procedures.

The CEMP would be submitted to Ausgrid to be reviewed by an Environmental Officer prior to the commencement of any site works for an adequacy review to determine that the CEMP effectively addresses the scope of works to be undertaken addresses the objectives described above and generally meets the requirements outlined in the *Guideline for the Preparation of Environmental Management Plans*[22].

No works covered by this REF would be permitted to commence until a suitable CEMP is prepared and reviewed as adequate by Ausgrid.

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It is also noted that the CEMP would be a working document and would be amended and continually improved over time. This would occur when there is a change in scope, during the review process or when processes or strategies are found to be inadequate to mitigate potential environmental harm.

If an activity falls outside the scope of the REF (as defined by **Section 1.6**) or if the mitigation measures outlined in **Section 5** cannot be implemented, then an additional approval would be required. The activity is not permitted to continue without an appropriate environmental assessment under the EP&A Act.

8.1.1 Implementation

The principal construction contractor would be responsible for implementing these controls during construction.

All personnel working on the Proposed Activity must be aware of their environmental obligations and, responsibilities and have received the necessary training to meet the environmental obligations associated with their duties, as specified in the CEMP. Site induction training would be undertaken for all personnel to highlight sensitive work areas, explain the requirements of the CEMP, outline an individual's responsibilities and inform all personnel of emergency response procedures. Documented evidence of such training would be available before commencing work on-site.

Prior to work commencing:

- emergency procedures would be displayed in a prominent position within the site working area
- a person would be allocated for the dissemination of general information on the site operations. A contact person and contact numbers would be identified for receiving comments or complaints from the community
- a register for complaints would be established and maintained for the full duration of the work. The register would record details of complaints; complainant contact information and action taken to address complaints.

Auditing of the construction would be undertaken in accordance with the relevant international and Australian standards[23] to establish whether the Contractor is conducting activities in accordance with their current CEMP and whether the CEMP is an effective tool to control adverse environmental impacts. Recommendations regarding improvements to the CEMP must be incorporated as soon as practicable.

An Environmental Officer would be appointed to the Proposed Activity. The Environmental Officer has the authority to stop works if it is deemed necessary to mitigate potential environmental harm.

8.1.2 Compliance

The contractor is required to have an auditing and inspection schedule. Ausgrid may undertake audits to ensure the CEMP is being implemented appropriately.

At the conclusion of the construction phase of the Proposed Activity, the Contractor must record how and whether the conditions and measures in the REF and CEMP were observed. The documentation must be sufficient to enable a reasonable person who reads the documentation to understand, without reference to any extrinsic material, whether the conditions and measures in question were observed, and the nature of and reasons for any non-compliance.

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8.2 Operation Environmental Management Plan

An operation environmental management plan (OEMP) may be required to minimise the potential environmental impacts from operational and maintenance activities conducted as a result of the Proposed Activity.

Usually, it will be the case that Ausgrid network standards, operating procedures and environmental guidelines will be sufficient to fulfil the requirements of an OEMP

However, where current Ausgrid network standards, operating procedures and environmental guidelines do not address specific requirements of the REF or a licence, permit or approval of a regulatory authority, a specific OEMP may be required to be prepared. The specific OEMP would allow for operational and maintenance procedures and activities post construction to be consistent with the environmental outcomes stipulated in the REF.

The requirement of an OEMP would generate a "Hold Point" in the REF and would be required to be released prior to operation of the asset commencing. The need for OEMP has been assessed as part of this REF and a specific OEMP is not required.

If an activity falls outside the scope of the REF (as defined by **Section 1.6**) or if the operation mitigation measures outlined in **Section 4.9** cannot be implemented, then an additional approval would be required. The activity is not permitted to continue without an appropriate environmental assessment under the EP&A Act.

8.3 Environmental Mitigation Measures

Mitigation measures for all phases of the Proposed Activity as presented in **Section 5** are summarised in **Table 8-1**.

Table 8-1: Implementation Mitigation Measures

Mitigation measures	**Implementation of mitigation measures**		
	Design	**Construction**	**Operation**
The Principal Construction Contractor will consult with potentially affected landholders before and during construction to minimise the potential for impacts on land use.	✓	✓	-
The Principal Construction Contractor will consult with relevant service providers prior to the commencement of construction to develop procedures to be implemented to minimise the potential for service interruptions.	✓	✓	-
Comply with section 7 of NS174C Environmental Handbook.	-	✓	-
The climatic conditions to which the plant and equipment shall be exposed are detailed in: • AS/NZS 1170 Structural design actions • AS 2067 Substations and high voltage installations exceeding 1kV A.C. • Bureau of Meteorology Climate maps for the “Annual Rainfall”, “Minimum Temperatures” and “Maximum Temperatures” in New South Wales	✓	-	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
• Engineers Australia “Australian Rainfall and Runoff – A Guide to Flood Estimation” • NS185 Major Substations Building Design Standard • NS186 Major Substations Civil Works Design Standard			
Materials are recommended to be sourced from local suppliers where cost-effective and no impact on engineering properties.	✓	✓	-
Recycled materials are recommended to be considered and used where cost-effective and no impact on engineering properties.	✓	✓	-
All plant and equipment are to be turned off when not in use.		✓	✓
All infrastructure associated with the Proposed Activity will be designed, installed and maintained in accordance with relevant industry standards.	✓	✓	-
All relevant procedures in relation to a high voltage installation will be adhered to throughout the life of the Proposed Activity.	✓	✓	✓
All employees, contractors and subcontractors will receive a site induction which explains the Proposed Activity’s specific noise mitigation measures, hours of work, delivery and site opening times, any noise limitations, workers’ parking areas and lay down areas.	✓	✓	-
Any associated construction equipment and/or machinery will be maintained (including noise reduction fittings where feasible) and will be turned off when not in use.	✓	✓	-
Provide at least four clear business days’ notice to affected receivers prior to starting work unless it is emergency works, or it is discussed with the affected receivers face-to-face. Include the following information in notification letters: • a description of the works and why they are being undertaken • details of the works that will be noisy • work hours and expected duration • what is being done to minimise the impacts (e.g., respite periods) • 24-hour contact number.	-	✓	-
All construction activities, where feasible, will be carried out in alignment with the standard daytime working hours.	-	✓	-
No high-impact activities outside of standard construction hours unless in an emergency situation.	-	✓	-
Plan the site layout to minimise movements that would activate audible reversing and movement alarms.	-	✓	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Provide respite periods for affected receivers: • one hour respite after every three consecutive hours of high-impact activities • one day respite after every three consecutive days of high-impact activities.	-	✓	-
The Standard noise mitigation and management measures described in the *Interim Construction Noise Guideline* (DECC, 2009) will be implemented for all activities. As well as the principles of 'best practice management' from the EPA's *Assessing Vibration technical guideline* (DEC, 2006). Specific measures will be detailed in the Construction Environmental Management Plan (CEMP) to be developed prior to construction.	✓	✓	-

Works would be undertaken between 7am and 6pm Monday to Friday and 8am and 1pm on Saturday. Between 7am and 8am on Saturdays, works that are inaudible to the nearest residential premises are allowed. Audible works may be undertaken outside of these hours if:
• the works are emergency works AND the affected residents have been notified as far as reasonably practicable, OR
• the works fall into one of the following categories AND the affected residents are provided with a notification letter at least four clear business days prior to the works:
  • the delivery of oversized plant or structures that require special approval
  • maintenance and repair of essential public infrastructure that is unable to occur during standard hours
  • public infrastructure works that shorten the length of the work and are supported by the affected community (this would require community consultation).
	-	✓	-

For out-of-hours work, Upper Hunter Shire Council are to be notified.	-	✓	-
Provide information via a free call 1800 number, email address and Ausgrid's website for people wanting more information.	✓	✓	-
Provide signage outside the worksite detailing who is undertaking the works and a 24-hour contact number.	-	✓	-
Have a documented complaints process, including an escalation procedure so that if a complainant is not satisfied, there is a clear path to follow	-	✓	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Keep a register of any complaints, including details of the complaint such as date, time, person receiving complaint, complainant's contact number, person referred to, description of the complaint, time of verbal response and timeframe for written response where appropriate. Notify Ausgrid Environmental Services of complaints received, and method of response required immediately after action complaint in register.	-	✓	-
Refer operational noise enquiries to Ausgrid Environmental Services.	-	-	✓
All workers are to be made aware of the presence of sensitive receivers in the area and the need to avoid impacts.	-	✓	-
Use water sprays to dampen (but not saturate) disturbed surfaces and stockpiles, at material transfer points during construction.	-	✓	-
Visually monitor dust levels during works. If dust is leaving site, causing a safety issue, or complaints are received, suspend works and consider mitigation options and/or substitute with an alternate process.	-	✓	-
Restrict traffic movement and vehicle speeds over disturbed areas and unsealed roads.	-	✓	-
Use dust collection devices (such as vacuum) on construction and rock-breaking equipment where available.	-	✓	-
If stockpiles are required for imported fill, they must be located away from roadways, gutters, drains, slopes, concentrated flow paths and channels.	-	✓	-
Position vehicles and equipment where the fumes will least affect receivers, where practicable.	-	✓	✓
Do not leave vehicles or equipment idling when they are not needed.	-	✓	✓
All workers are to be made aware of the presence of sensitive areas and waterfront land and the need to avoid impacts.	-	✓	-
Prepare and comply with a site-specific CEMP, which will include management measures in accordance with Managing Urban Stormwater – Soils and Construction (NSW Landcom, 2004), the 'Blue Book'.	-	✓	-
Maintain sediment controls, especially during periods of rainfall.	-	✓	-
Remove temporary erosion and sediment controls as the site is stabilised or rehabilitation is complete	-	✓	-
If stockpiles are required, they must be located away from roadways, gutters, drains, slopes, concentrated flow paths and channels.	-	✓	-
Stabilise disturbed areas promptly, this may include progressive rehabilitation	-	✓	✓

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Non-domestic discharges to sewer must be in accordance with a permit from the relevant water supply authority.	-	✓	✓
The CEMP will outline the location of access routes, compound sites, construction boundaries, and exclusion zones on detailed designs, clearly staked and marked onsite.	-	✓	-
Prior to construction, prepare and implement a riparian corridor re-vegetation plan to be included in the CEMP.	-	✓	-
If dewatering of groundwater is required during construction, works would cease and additional testing would be undertaken to develop a Water Quality Management Plan.	-	✓	-
Ensure a spill kit is readily available and workers and know how to use it.	-	✓	✓
The site-specific CEMP will be prepared in accordance with Managing Urban Stormwater – Soils and Construction (NSW Landcom, 2004), the 'Blue Book'. The CEMP will include measures for erosion and sediment control in accordance with *Managing Urban Stormwater – Soils and Construction*.	✓	✓	-
The CEMP will include the access track requirements and existing tracks maintenance in accordance with *Managing Urban Stormwater Volume 2C Unsealed Roads and Erosion and sediment control on unsealed roads – A field guide for erosion and sediment control maintenance practices*.	✓	-	✓
Undertake testing to determine the waste classification and subsequent storage, transport, tracking, licensing and disposal requirements.	-	✓	-
Provide a secure and bunded area for the storage of fuel, oil or chemicals. This area would be imperviously bunded with a capacity to contain not less than 110% of the volume of the largest container.	-	✓	✓
Temporarily store excavated known or suspected contaminated spoil in a covered, lined/ sealed skip or bulk storage bag or sealed container on-site for classification prior to disposal off-site. Where there are site restrictions for on-site storage, store offsite. If storing more than 5 tonnes of spoil, use a licensed storage facility. There may also be a requirement for having a licence to transport the spoil (there are exemptions for Ausgrid staff).	-	✓	-
Implement an unexpected finds procedure. If potential, is found, stop immediately, restrict access and notify: • Site supervisor • Ausgrid's Environmental Services • relevant safety advisor for WHS requirements.	-	✓	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
Any person handling the waste is trained in handling Scheduled Chemicals and methods of containing Scheduled Chemical spills and wears Personal Protective Equipment (PPE).	✓	✓	✓
All packages / storage containers are clearly labelled and maintained in good order.	✓	✓	✓
Provide a secure, lockable, and floored area for the storage of fuel, oil, or chemicals. This area would be imperviously bunded with a capacity to contain not less than 110% of the volume of the largest container.	-	✓	✓
Prior to construction, nominate and sign-post a plant refuelling area.	-	✓	-
When transporting soil where the concentration of Aldrin or Dieldrin in the soil is 5-mg/kg or greater, or the presence has not been ruled out, the following additional controls apply: • The transport vehicle must carry personnel trained in containing spills of OCP-contaminated spoil. • Appropriate PPE, clean-up material and equipment must be carried on the transport vehicle.	-	✓	✓
Prior to construction, the CEMP would be prepared to contain a list of expected waste, volume and planned reuse, disposal or recycling.	✓	✓	
Classify waste to determine licensing, waste tracking and disposal requirements.	-	✓	
Segregate and label waste to improve recycling opportunities, avoid cross-contamination and reduce disposal costs.	-	✓	
Where possible, reuse or recycle or return to the supplier wastes including metal components, transformer oil, spoil and packaging.	-	✓	✓
Reuse VENM and ENM where options are available. Ensure that: • a valid waste classification certificate is available and • the reuse meets the conditions of the planning approval for that site.	-	✓	-
If liquid or hazardous waste will be transported, the transportation must be undertaken by licensed vehicles and/or contractors. The waste oil must be disposed of at a facility licensed to accept Liquid and, or hazardous waste.	-	✓	-
Ensure a spill kit is readily available, and workers know how to use it.	-	✓	-
Comply with section 5 Ecology of NS174C Environmental Handbook.	-	✓	-
Ensure removal of vegetation is minimised through detailed design.	✓	-	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
It is recommended to minimise vegetation clearing by utilising pre-existing access tracks and exotic grasslands, as proposed.	✓	-	-
Access for construction is recommended to utilise existing tracks where possible. Trimming or clearing vegetation for access is only permitted within the area identified as the proposed access on Moobi Ridge. Disturbance is recommended to be minimised where required through the use of geotextile fabric and/or ground protection matts.	-	✓	-
Ensure all River red gum (Eucalyptus camaldulensis) are avoided during the detailed design phase for the Proposed Activity.	✓	-	-
It is recommended to minimise vegetation clearing by utilising smaller plant and equipment	-	✓	✓
The removal of hollow-bearing trees may be avoided with minor design changes. However, if it is required it would be performed in the presence of a qualified ecologist to assist in the detection and translocation of potentially displaced fauna and implemented via a tree felling protocol to protect fauna to be included in the CEMP. The CEMP will include protocols for tree felling, including actions to: 1. Identify all hollow-bearing trees in the vicinity of the works with high visibility flag or similar prior to commencement of vegetation clearing. 2. Undertake pre-clearance surveys for fauna immediately prior to clearing. 3. Where fauna is identified in a tree to be felled, the tree must not be cleared until the fauna has relocated itself. 4. Remove understorey vegetation and other trees in the vicinity. 5. Check the tree each morning until the fauna moves into adjacent vegetation (normally the following day). 6. Ensure an ecologist is present during the felling of hollow-bearing trees to relocate fauna or provide care as necessary.	-	✓	-
Ensure hygiene controls are in place for all plant and people working in the Proposed Activity Area.	-	✓	✓
Ensure machinery will be washed following best practice hygiene protocols prior to being brought to site to prevent the spread of weeds, seeds, pathogens and fungi.	-	✓	✓
To manage the spread of weeds and exotic species, edge effects and erosion, clearing limits and exclusion zones will be established in the construction phase.	-	✓	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
All weed material removed will be disposed of in a suitable waste facility and not mulched on site. This is to avoid the reintroduction and further spread of weeds in the area.	-	✓	-
No storing equipment, parking vehicles or accessing the site through undisturbed areas.	-	✓	-
Suitable erosion controls would be implemented across the site to avoid any additional runoff to leech into the existing drainage lines.	-	✓	✓
Vegetation clearing and pruning to comply with Ausgrid's NEG-OH21 Vegetation Safety Clearances / ISSC3 Guideline for Managing Vegetation Near Powerlines.	✓	✓	✓
During a total fire ban, no open fires or hot works are to be undertaken unless in accordance with an exemption granted by the NSW RFS.	-	✓	✓
Any hot works during a total fire ban must be in accordance with an approved exemption in accordance with DG33. This includes grinding, welding, brazing, oxy-cutting, heat treatment or processes that generate heat or continuous streams of sparks. The Contractor or ASP must obtain their own exemption.	-	✓	✓
Hot work activities to be clear of combustible matter by at least 3 metres. Keep adequate firefighting equipment immediately at hand. Avoid driving a vehicle through long grass or operating motors and equipment in proximity to vegetation.	-	✓	✓
Undertake consultation with the local fire authority prior to commencing hot works to advise of works in bushfire-prone areas and of any access restrictions to fire trails.	✓	-	-
Schedule hot work activities during the more favourable period of the day and week.	-	✓	-
All workers are to be made aware of sensitive areas and the need to avoid impacts.	-	✓	-
The assessment provided in **Appendix 3** concludes that within Archaeologically Sensitive Areas 3 and 4 no earthworks should occur for the proposed access track. Access within the Sensitive Areas is only permitted via existing tracks and cleared areas managed through the use of geotextile fabric and/or ground protection matts, where required. Should more substantial ground disturbance works be required for the access track within these areas further assessment may be required. This would take the form of an Aboriginal Cultural Heritage Assessment (ACHA). This ACHA would be required to further investigate the archaeological potential and/or Aboriginal cultural heritage values of the	-	✓	-

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
aforementioned areas of sensitivity. Aboriginal cultural heritage investigation works must be undertaken by a suitably qualified heritage consultant in accordance with Requirement 11 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b) and include the preparation of an Aboriginal Cultural Heritage Assessment Report (ACHAR), compiled in accordance with Section 3 of the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW. A process of Aboriginal community consultation carried out in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a) must also be demonstrated.			
The assessment provided in **Appendix 3** concludes that the works proposed to occur within the extent of Archaeologically Sensitive Area 1, 2 and 4 (being a single transmission line pole) are unlikely to impact subsurface Aboriginal objects, or sites, should they be present. This is due to the minor and isolated nature (a singular inclusion of a pole for the overhead line) of the works. Should more substantial ground disturbance works be required, outside of the bounds of the discussed pole installation, further assessment will be required.	-	✓	-
If additional archaeological assessment is required as Aboriginal objects and/or sites are identified during the archaeological investigation, and Aboriginal sites/objects cannot be avoided by the Proposed Activity, the Proposed Activity would an application for an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the *National Parks and Wildlife Act 1974*. The recommended approach for an ACHAR identified above would be used to support the application.	-	✓	✓
All relevant contractors and personnel should be made aware of the nature and location of previously recorded Aboriginal sites that lie within and near the Proposed Activity Area. All relevant contractors and personnel should also be made aware of their legal responsibilities under the NP&W Act and the need to avoid impacts to Aboriginal sites.	-	✓	✓
If, in the unlikely event that Aboriginal objects/sites are identified during the Proposed Activity, all works in the area must cease immediately and the Unexpected Heritage Finds Procedure presented in **Appendix 3** must be implemented.	-	✓	✓

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
In the event that the proposed design and/or location of the proposed works is altered for any reason, impacting areas or land that have not been assessed in this report, further Aboriginal heritage assessment will be required. Any proposed alteration must be evaluated by a qualified heritage consultant to determine if the location represents a risk to Aboriginal cultural heritage.	-	✓	✓
All workers are to be made aware of sensitive historic heritage-listed areas and the need to avoid impacts.	-	✓	-
Construction activities within the curtilage of the 'Invermein' (I24) local heritage item should be avoided as far as practicable. Where pole installation is required within the mapped curtilage of the item, reasonable measures should be taken to reduce disturbance as far as reasonably practicable. We note that there is currently no construction activity proposed to take place within Lot 912 DP1152423 associated with the 'Invermein' property.	-	✓	-
All on-site personnel are to be made aware of their obligations under *Heritage Act 1977* (NSW).	-	✓	-
In the unlikely event that unexpected historical archaeological material is discovered during works, work must cease, and an appropriately qualified archaeologist must be consulted. If appropriate, the Heritage Council should be notified in accordance with Section 146 of the *Heritage Act 1977*.	-	✓	-
Consult with affected stakeholders about the Proposed Activity and the timing of construction commencement and duration.	✓	✓	-
Clear the minimum amount of vegetation necessary and undertake replacement planting in consultation with the Council.	-	✓	-
Maximise pole separation distances.	✓	-	-
Use coloured poles conducive to the rural landscape to reduce visual impact by allowing integration with existing vegetation.	✓	✓	✓
Where works are proposed on a classified road, consent is required under section 138(1) of the *Roads Act 1993*. To apply for a section 138 consent, write to TfNSW for classified state roads or the relevant local council for classified regional roads to request approval, providing a description of the work and including a plan showing the extent of the works.	-	✓	-
EMF, noise, visual and traffic mitigation measures (**Sections 5.3.3, 5.4.3, 5.14.3 and 5.15.3**) would reduce potential impacts on the surrounding community.	✓	✓	✓

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Mitigation measures	Implementation of mitigation measures		
	Design	Construction	Operation
A Traffic Management Plan will be prepared in consultation with Council and TfNSW and implemented as part of the CEMP to comply with TfNSW and Council requirements. The Traffic Management Plan will be prepared in accordance with the Traffic Control at Worksites (TfNSW, 2022) and AS1743.3 Traffic Control Devices for Projects on Road (2019). The Traffic Management Plan will include the following: • Confirmation of haulage routes • Site-specific traffic control measures (including signage) to manage and regulate traffic movement, including pedestrians and cyclists Construction contractor Timing Pre-construction and construction • Requirements and methods to consult and inform the local community of impacts on the local road network • A response plan for any construction traffic incident • Measures to minimise potential cumulative impacts on traffic and access. • Any cumulative impact of construction traffic movements from other Ausgrid and non-Ausgrid works • Communication plan – all potentially affected residents and businesses are to be provided with 48- hours' notice of any access changes to properties. Where residents and businesses are directly affected by the work (e.g. their access will be restricted), one week's notice must be given.	-	✓	-
A CEMP will be prepared which will include safeguards and management measures included in this REF to reduce potential impacts on the surrounding community. The CEMP will include the required workforce and considerations for where this workforce would be sourced.	✓	✓	-
The local community would be notified when construction work is to begin. The notifications will provide indicative timing for planned construction works to allow the local community to plan and organise around the Proposed Activity's impacts on the local road network where possible.	✓	✓	-
Keep a register of any complaints, including details of the complaint such as date, time, person receiving complaint, complainant's contact number, person referred to, description of the complaint, time of verbal response and timeframe for written response where appropriate. Notify Ausgrid Environmental Services of complaints received and method of response required immediately after action complaint in register.	-	✓	-

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9 Certification

This REF assesses the potential impacts of the Proposed Activity to construct, operate and maintain a 66 kV overhead line from the UHEP Project Area to the existing Scone substation.

Ausgrid is a statutory State-Owned Corporation and is a determining public authority as defined in the EP&A Act. The Proposed Activity satisfies the definition of an activity under the EP&A Act, and as such, Ausgrid as a determining authority, must assess and consider the environmental impacts of the Proposed Activity before determining whether to proceed.

This REF examines and takes into account to the fullest extent possible all matters affecting or likely to affect the environment as a result of the proposed activities outlined in **Section 1.6**. This REF fulfils the requirements of section 5 of the EP&A Act and clause 171 of the EP&A Regulation, which sets out environmental factors to be considered in making the assessment.

On the basis of this REF, it is concluded that the Proposed Activity:

- is unlikely to significantly affect the environment (including critical habitat) or threatened species, populations or ecological communities, or their habitats
- is not located on land that is part of critical habitat
- is unlikely to have a significant impact on matters of MNES, or a significant impact on the environment (for actions on Commonwealth land) or a significant impact on the environment on Commonwealth land (for actions outside Commonwealth land).

In making these conclusions, consideration of environmental significance was made with regard to clause 171 of the EP&A Regulations and the *Code of Practice for Authorised Network Operators*[1].

REF Preparer:

I certify that I have prepared the contents of this REF and, to the best of my knowledge, it is in accordance with the Code approved under clause 198 of the Environmental Planning and Assessment Regulation 2021, and the information it contains is neither false nor misleading.

Signature:	
Name:	Nadia Aurisch
Title:	Environmental Consultant
Company:	Umwelt (Australia) Pty Ltd
Date:	30 January 2026

1. UHEP 66kV Powerline_REF_20260313

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REF Reviewer:

I certify that I have reviewed the contents of this REF and, to the best of my knowledge, it is in accordance with the Code approved under clause 198 of the Environmental Planning and Assessment Regulation 2021, and the information it contains is neither false nor misleading.

Signature:	
Name:	Nathan Baker
Title:	Principal Environmental Consultant
Company:	Umwelt (Australia) Pty Ltd
Date:	30 January 2026

Project Manager Acceptance:

I accept the description of the Proposed Activity outlined in **Section 1.6** as true and accurate and I commit to the implementation of the mitigation measures outlined in **Section 8.3**.

Signature:	
Name:	Penelope Williams
Title:	Principal Environmental Consultant
Company:	Umwelt (Australia) Pty Ltd
Date:	30 January 2026

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Hunter Energy Park
66 kV Overhead Line

Biodiversity Assessment Report

Final

February 2026

umwelt

Hunter Energy Park 66 kV Overhead Line

Biodiversity Assessment Report

Final

Prepared by
Umwelt (Australia) Pty Limited

On behalf of
YZ Consulting c/o Maven Renewables

Project Director:	Nathan Baker
Project Manager:	Penelope Williams
Report No.:	30717 / R06
Date:	February 2026

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Rev No.	Reviewer Name	Date	Approved for Issue Name	Date
V4	Adam Cavallaro	9/01/2026	Nathan Baker	15/01/2026
V5	Adam Cavallaro	28/01/2026	Nathan Baker	28/01/2026

Executive Summary

1.1 Overview

This Biodiversity Assessment Report (BAR) has been prepared to support the Review of Environmental Factors (REF) for a proposed 66 kilovolt (kV) overhead line (Proposed Activity) associated with the Upper Hunter Energy Park.

The Proposed Activity Area is the maximum extent of native vegetation disturbance proposed to construct the overhead line. The Proposed Activity Area includes a 30 m buffer of the easement, being up to 15 m on either side of the overhead line except for 520 m on steeper terrain on Moobi Ridge where the easement buffer is proposed to be 36.18 m (18.09 m either side) to accommodate the terrain. Disturbance will be required associated with the installation of the poles and line to establish the easement; vegetation clearing and pruning would also be required. Upgrading of an existing access track will be required on Moobi Ridge to allow construction access in steeper terrain. The access track proposed includes a new access track off of the existing access track to be upgraded for larger vehicles which will be established if required.

This BAR assesses the ecological significance of threatened flora and fauna, and vegetation communities that occur, or have the potential to occur, within the area to be impacted by the Proposed Activity, in accordance with the requirements of the NSW *Environmental Planning & Assessment Act*, NSW *Biodiversity Conservation Act* (BC Act) and the Commonwealth *Environmental Protection Biodiversity Conservation Act* (EPBC Act).

1.2 Results

During high-level field surveys, the following threatened entities were confirmed within the Proposed Activity Area:

- NSW Biodiversity Conservation Act
    - 1.62 ha of Central Hunter Grey Box – Ironbark Woodland in the NSW North Coast and Sydney Basin Bioregions – Endangered Ecological Community (EEC)
    - 1.3 ha of Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions EEC
    - One (1) individual of *Eucalyptus camaldulensis* (river red gum) that are a part of the endangered population in the Hunter Catchment
    - Thirteen (13) grey-crowned babbler (eastern subspecies) (*Pomatostomus temporalis temporalis*) individuals – Vulnerable
    - Four (4) Speckled warbler (*Pyrrholaemus sagittatus*) individuals – Vulnerable

Commonwealth Environment Protection and Biodiversity Conservation Act

- 1.62 ha of Central Hunter Valley eucalypt forest and woodland – Critically Endangered Ecological Community (CEEC)

The Proposed Activity will result in the direct impact to 15.84 ha of native vegetation in addition to a further 2.78 ha of planted native vegetation.

Table ES.1 below provides a summary of the direct impacts to native vegetation.

Table ES.1.1

PCT#	PCT Name	Threatened Ecological Community BC Act	Threatened Ecological Community EPBC Act	Proposed Activity Area Maximum Extent of Impacts (ha)
393	White Box shrubby woodland of the western Liverpool Range	NA	NA	**5.11**
3431	Central Hunter Ironbark Grassy Woodland – woodland variant	Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions - Endangered Ecological Community (EEC)	Central Hunter Valley eucalypt forest and woodland Critically Endangered Ecological Community (CEEC)	**1.62**
	Central Hunter Ironbark Grassy Woodland – grassland variant	NA	NA	**1.7**
3767	Upper Hunter Escarpment Colluvial Ironbark Forest	NA	NA	**5.66**
4089	Namoi-Upper Hunter River Red Gum Forest - Inland Riverine Forests – woodland variant.	Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions (EEC)	NA	**1.3**
	Namoi-Upper Hunter River Red Gum Forest - Inland Riverine Forests – grassland variant	NA	NA	**0.45**
NA	Planted Native Vegetation	NA	NA	**2.78**
Total				**18.62**

In addition to the confirmed threatened entities, the native vegetation identified within the Proposed Activity Area provides habitat for 32 threatened species that have at least a moderate likelihood of occurring within the Proposed Activity Area. None of these species (listed below) were recorded within the Proposed Activity Area during field surveys.

The 18.62 ha of native vegetation is considered to be potential habitat for:

- Two (2) threatened flora species: *Cymbidium canaliculatum* (tiger orchid), and *Prasophyllum* sp. Wybong (a leek-orchid).
- 14 threatened avifauna species: regent honeyeater (*Anthochaera phrygia*), swift parrot (*Lathamus discolor*),southern whiteface (*Aphelocephala leucopsis*), dusky woodswallow (*Artamus cyanopterus cyanopterus*), south-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*), brown treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*), little lorikeet (*Glossopsitta pusilla*), scarlet robin (*Petroica boodang*), diamond firetail (*Stagonopleura guttata*), varied sittella (*Daphoensitta chrysoptera*), masked owl (*Tyto novaehollandiae*), little eagle (*Hieraaetus morphnoides*), black falcon (*Falco subniger*), and spotted harrier (*Circus assimilis*).
- 13 threatened mammals: brush-tailed phascogale (*Phascogale tapoatafa*), squirrel glider (*Petaurus norfolcensis*), koala (*Phascolarctos cinereus*), spotted-tailed quoll (*Dasyurus maculatus*), brush-tailed rock-wallaby (*Petrogale penicillata*), Corben's long-eared bat (*Nyctophilus corbeni*), eastern cave bat (*Vespadelus troughtoni*), large-eared pied bat (*Chalinolobus dwyeri*), large bent-winged bat (*Miniopterus orianae oceanensis*), southern myotis (*Myotis macropus*), yellow-bellied sheathtail bat (*Saccolaimus flaviventris*), greater broad-nosed bat (*Scoteanax rueppellii*), and grey-headed flying-fox (*Pteropus poliocephalus*).
- Two (2) threatened reptiles: pink-tailed legless lizard (*Aprasia parapulchella*), and Hunter Valley delma (*Delma vescolineata*).

1.3 Key Findings

Assessments of the significance of impacts from the Proposed Activity on the above listed threatened entities were carried out for 32 Test of Significance under the BC Act and 16 Assessment of Significance under the EPBC Act.

Due to the narrow nature of the Proposed Activity, relatively low-quality native vegetation that is fragmented by large areas of agricultural lands, the Proposed Activity is unlikely to have a significant impact on threatened biodiversity and their habitats.

The Proposed Activity is unlikely to have a significant impact on threatened communities and/or species and their habitats listed under the BC Act. A Species Impact Statement (NSW) is not considered necessary for any threatened biodiversity as a result of impacts relating to the Proposed Activity.

The significance of the impact of a proposed action on MNES can be determined through self-assessment using Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (DoE, 2013). A 'Referral' under the EPBC Act is required for proposed actions that may affect nationally listed threatened species, threatened ecological communities and migratory species.

Assessments of significance have been completed for the threatened entities listed under the EPBC Act (refer to **Table 6.1**) that are considered to have a moderate or greater likelihood of occurrence within the Proposed Activity Area. The assessments have been provided in **Appendix C**.

The Proposed Activity is not considered likely to significantly impact any TECs, threatened species or their habitats listed under the EPBC Act.

Contents

Executive Summary i

1.1 Overview i

1.2 Results i

1.3 Key Findings iv

1.0 Introduction 10

1.1 Project Background 10

1.2 Proposed Activity 10

1.3 Study Area 11

2.0 Legislative Context 14

2.1 NSW Biodiversity Conservation Act 2016 14

2.2 NSW Fisheries Management Act 1994 14

2.3 Environment Protection and Biodiversity Conservation Act 1999 15

2.4 NSW Biosecurity Act 2015 15

2.5 Transport and Infrastructure SEPP 16

3.0 Methods 17

3.1 Personnel 17

3.2 Desktop Assessment 17

3.3 Database Search 18

3.4 Threatened Flora and Fauna Likelihood of Occurrence 19

3.5 Field Survey Methods 19

3.5.1 Vegetation and Threatened Flora 20

3.5.2 Fauna and Fauna Habitats 20

3.6 Limitations 20

4.0 Existing Environment 23

4.1 Landscape Context 23

4.2 Biodiversity Values 24

4.2.1 Plant Community Types 24

4.2.2 Threatened Ecological Communities 33

4.2.3 Threatened Flora 36

4.3 Non-native Vegetation 38

4.4 Terrestrial Fauna and Fauna Habitat 38
4.4.1 Threatened Fauna 38
4.4.2 Fauna Habitat 38
4.5 Wildlife Connectivity Corridors 40
4.6 Matters of National Environmental Significance 40
4.7 Groundwater Dependent Ecosystems 41
5.0 Impact Assessment 42
5.1 Direct Impacts 42
5.1.1 Removal of Native Vegetation 42
5.1.2 Removal of Threatened Flora Habitat 44
5.1.3 Removal of Threatened Fauna Habitat 44
5.2 Indirect Impacts 46
5.3 Key Threatening Processes 47
6.0 Assessment of Significance 50
6.1 Biodiversity Conservation Act 2016 – Test of Significance 52
6.2 Environment Protection and Biodiversity Conservation Act 1999 – Assessment of Significance 52
7.0 Mitigation Measures 53
8.0 Conclusion 54
9.0 References 57

Figures

Figure 1.1 Location Map 12
Figure 1.2 Site Map 13
Figure 3.1 Survey Effort 22
Figure 4.1 Plant Community Types 32
Figure 4.2 Threatened Ecological Communities 37

Tables

Table ES.1.1		3
Table 3.1	Contributing Personnel	17
Table 3.2	Databases Reviewed for the Desktop Assessment	18
Table 3.3	Criteria Used for Assessing the Likelihood of Occurrence of Species within the Proposed Activity Area	19
Table 4.1	Landscape context of the Proposed Activity Area	23
Table 4.2	Plant Community Types (PCTs)	25
Table 4.3	Comparison of PCT 3431 with the BC Act Listed -Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions – EEC	34
Table 4.4	Comparison of PCT 4089 with the BC Act Listed – Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions – EEC	35
Table 4.5	Comparison of PCT 3431 with the EPBC Act Listed – Central Hunter Valley Eucalypt Forest and Woodland - CEEC	36
Table 5.1	Direct Impacts to Native Vegetation	43
Table 5.1	Impacts on Threatened Flora and their Habitat	44
Table 5.2	Impacts on Threatened Fauna and their Habitat	44
Table 5.3	Indirect Impacts	46
Table 5.4	Key Threatening Processes	48
Table 6.1	Threatened Entities Requiring Assessments of Significance	50
Table 7.1	Mitigation Measures	53
Table 8.1	Direct Impacts to Native Vegetation	55

Photos

Photo 4.1	Riparian area along Parsons Gulley	39
Photo 4.2	Vegetation within PCT 393 White Box shrubby woodland	39
Photo 4.3	Riparian area along Dart Brook	40
Photo 4.4	Stag tree with hollows near Middle Brook	40

Appendices

Appendix A Likelihood of Occurrence Assessment

Appendix B Test of Significance NSW Biodiversity Conservation Act 2016

Appendix C Assessment of Significance Commonwealth Environment Protection Biodiversity Conservation Act 1999

Appendix D Protected Matters Search Tool Results

1.0 Introduction

Umwelt was commissioned to prepare a Biodiversity Assessment Report (BAR) for a proposed 66 kilovolt (kV) overhead line by YZ Consulting Pty Ltd on behalf of Maven Renewable Energy Pty Ltd (Maven) (the Proponent). The BAR has been prepared to support the Review of Environmental Factors (REF) for the proposed overhead line associated with the Upper Hunter Energy Park (UHEP) (hereafter 'the Proposed Activity'), located in Scone, New South Wales.

1.1 Project Background

The UHEP was approved by the NSW Minister for Planning in 2010 under Project Approval 06_0055. The approval provided for the construction and operation of a renewable energy generation facility and associated infrastructure with a maximum generation capacity of up to 113 megawatts (MW) at two (2) sites (Middlebrook and Mountain Stations) in the Upper Hunter Shire local government area (LGA).

The original approval included the following:

- Up to 34 (up to 3 MW) wind turbines
- 3-10 MW solar photovoltaic arrays
- One (1) MW closed loop hydro plant
- Electricity substation, switch yard and control room
- 33 kV internal (underground) transmission cabling and overhead connection between the two (2) sites
- Internal access roads
- Managers residence, visitors and education centre and maintenance shed
- Temporary construction compound(s).

The Project also includes two (2) options for overhead transmission line connection to the existing electricity grid:

- 66 kV option to the existing Scone substation located in the Upper Hunter Shire local government area; or
- 132 kV option to the existing substation at Muswellbrook located in the Upper Hunter Shire and Muswellbrook Shire local government areas.

Since approval of the Project, ongoing investigations have identified a need to amend the approved overhead transmission line route.

1.2 Proposed Activity

The proponent proposes to construct, operate and maintain a 66 kV overhead line connecting from the UHEP to the existing Scone substation located in Lot 403 DP1119120.

The Proposed Activity includes an easement. The easement is proposed to have a width of up to 30 m, being 15 m on either side of the overhead line, except for520 m on steeper terrain on Moobi Ridge where the easement is proposed to be 36.18 m (18.09 m either side) to accommodate the terrain. Disturbance will be required associated with the installation of the poles and line to establish the easement; vegetation clearing and pruning would also be required.

The 66 kV overhead line would be attached to approximately 20 m to 55 m high steel poles. Each pole would be spaced at a distance ranging from approximately 40 m to 520m. All poles would be installed on direct embedment foundations around 950 mm to 1,500 mm in diameter and of varying lengths to an average depth of 3 m. The steel poles would be anchored using embedded bolts or base plates, depending on site-specific conditions. The overhead line will have a total length of approximately 13 km, spanning a linear east-west distance of 10 km.

Access will be provided via existing tracks and cleared areas managed through the use of geotextile fabric and/or ground protection matts, where required. Upgrading of an existing farm track will be required within Lot 76 and 71 DP750950 on Moobi Ridge to allow construction access in steeper terrain. The access track proposed includes a new access track off of the existing farm access track to be upgraded for larger vehicles which will be established if required. Otherwise, access to the Proposed Activity for construction and operational maintenance will utilise existing agricultural lands that are regularly accessed by landowners for farming operations, equipment transport, and livestock management, providing established pathways.

Work pads required for construction activities will be located within the easement and within cleared agricultural land, and will meet Ausgrid's safety and clearance requirements, ensuring that construction and maintenance crews can access poles without risk to personnel or equipment. The construction work pads will form a cleared, level surface, gravel will be used to level the surface where required.

1.3 Study Area

The Study Area (herein referred to as the Proposed Activity Area) is the environment that could be directly or indirectly affected by the Proposed Activity. The Proposed Activity will connect the UHEP located approximately 10 km west of Scone on "Mountain Station" located in Moobi and Owens Gap to the existing Scone Sub-station (Refer to **Figure 1.1**). The proposed activity is predominantly located within a highly disturbed landscape consisting of a mix of land uses that includes cropping and livestock farming, local infrastructure (roads) and highly fragmented patches of native vegetation across the landscape.

For this assessment, the Proposed Activity Area is defined as the land within the easement between the UHEP and Scone and includes the proposed upgrades to existing access tracks. The easement is proposed to have a width of 30 m, being 15 m either side of the overhead line except for 520 m on steeper terrain on Moobi Ridge where the easement is proposed to be 36.18 m (18.09 m either side) to accommodate the terrain and is shown in **Figure 1.1** and **Figure 1.2.** The alignment runs from Lot 31 DP750939 (within the UHEP Project Area) and continues for a length of 13 km east towards Scone Substation (located within Lot 403 DP1119120). All proposed infrastructure will be contained within the associated easement and construction activities will be conducted within the proposed access tracks and associated easement.

FIGURE 1.1

Location Map

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Local Government Area
- Reserve
- Waterbody
- Watercourse
- Highway
- Main / Local Roads
- Railway

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

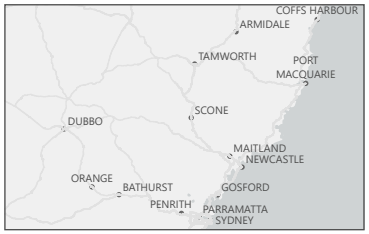

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FIGURE 1.2

Proposed Activity Area

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Reserve
- Watercourse
- Highway
- Main / Local Roads
- Railway

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

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Kilometres

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2.0 Legislative Context

The approval pathway for the Project is Part 5, Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The biodiversity assessment has considered the impact of the Proposed Activity on threatened species, communities and their habitat as listed under the *NSW Biodiversity Conservation Act 2016* (BC Act) in keeping with the requirements of Section 7.8 of the BC Act and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Other relevant legislation has been considered in the following sections of the BAR.

2.1 NSW Biodiversity Conservation Act 2016

The *Biodiversity and Conservation Act 2016* (BC Act) establishes mechanisms for the management and protection of listed threatened species of native flora and fauna (excluding fish and marine vegetation and the consideration and assessment of threatened species impacts in the development assessment process amongst other controls.

If an activity potentially affects any flora or fauna species, populations or ecological communities listed by the BC Act, a test of significance is required. The Test of Significance (ToS), referred to in Section 7.3 of the BC Act, determines whether the Proposed Activity is likely to have a significant impact. It is applied as part of the Biodiversity Offsets Scheme entry requirements and for Part 5 activities under the EP&A Act. If the activity is likely to have a significant impact or will be carried out in a declared area of outstanding biodiversity value, a proponent must either apply the Biodiversity Offsets Scheme (Division 4) or prepare a species impact statement (SIS) (Division 5).

This Biodiversity Assessment was carried out to determine if the Proposed Activity would have a significant impact on threatened species or ecological communities, or their habitats.

A NSW BioNet Atlas search was undertaken on 10 March 2025 for the Proposed Activity Area with a 10 km search. The results are provided in Section 3.4, with relevant ToS completed in Appendix B.

2.2 NSW Fisheries Management Act 1994

NSW Fisheries, a division within the Department of Primary Industries and Regional Development (DPIRD) (formerly Department of Primary Industries (DPI)), assesses applications for dredging and reclamation works, harm to marine vegetation and obstruction of fish passage in accordance with Part 7 of the *Fisheries Management Act 1994* (FM Act) and the Policy and Guidelines for Fish Habitat Conservation and Management (2013 Update). One of the key objectives of the FM Act is to conserve 'key fish habitat'. Under Part 7 of the FM Act, a permit is required for:

- Activities involving dredging and reclamation work.
- Activities temporarily or permanently obstructing fish passage.
- Harming marine vegetation.

The Proposed Activity Area does not include any areas of key fish habitat and will not be considered further (Refer to **Table 3.2**).

2.3 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is a Commonwealth Act for the protection of nationally significant natural or cultural values or the regulation of certain nationally significant activities. These values are known as Matters of National Environmental Significance (MNES) and the regulated activities are known as 'controlled actions' and include activities which may impact on:

- World Heritage properties
- National Heritage places
- Wetlands of international importance (including Ramsar wetlands)
- Commonwealth listed threatened species and ecological communities
- Commonwealth listed Migratory species
- Commonwealth marine or land areas
- Nuclear actions (including uranium mining)
- The Great Barrier Reef Marine Park
- A water resource in relation to coal seam gas development and large coal mining development.

Before any changes in land use or new developments can be approved, any potential negative impacts on MNES must be carefully considered. Under the EPBC Act an action will require approval from the minister if the action has, will have, or is likely to have a significant impact on a MNES.

The EPBC Act search tool was searched on 10 December 2024 for the survey area with a 10 km buffer and detailed in **Section 3.4** with relevant assessment of significances (AoS) completed as documented in **Appendix C**.

2.4 NSW Biosecurity Act 2015

The broad objectives for biosecurity in NSW under the *Biosecurity Act 2015* are to manage biosecurity risks from animal and plant pests and diseases, weeds and contaminants by:

- Preventing their entry into NSW.
- Quickly finding, containing and eradicating any new entries.
- Effectively minimising the impacts of those pests, diseases, weeds and contaminants that cannot be eradicated through robust management arrangements.

Under the *Biosecurity Act 2015*, priority weeds are defined in the following categories:

- Weeds of National Significance.
- National environmental Alert List Weeds.
- Water weeds.
- Native plants considered weeds.

In NSW, all plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable. If weeds were recorded during the site assessment, weeds identified under the *Biosecurity Act 2015* have been listed in **Section 4.3**.

2.5 Transport and Infrastructure SEPP

Subject to certain exemptions, the Transport and Infrastructure (T&I) State Environmental Planning Policy (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 development consent on any land.

Exclusions to the application of the T&I SEPP include some developments under the State Environmental Planning Policy (Resilience and Hazards) 2021 referring to land that is identified as "coastal wetlands" or "littoral rainforest". There are no coastal wetlands or littoral rainforests located near the Proposed Activity Area.

Therefore, this Proposed Activity falls within the scope of the T&I SEPP as an activity permissible without development consent.

3.0 Methods

3.1 Personnel

Key contributors to this assessment, including project role and qualifications are outlined in **Table 3.1**.

Table 3.1 Contributing Personnel

Name	Role	Qualifications and Experience
Adam Cavallaro	Report preparation and technical review	Principal Ecologist Accredited BAM Assessor Bachelor of Environmental Science (Conservation Ecology)
James Garnham	Field surveys (Vegetation mapping, ground-truthing and threatened species surveys) and report preparation	Principal Ecologist Accredited BAM Assessor PhD Conservation Biology, B. Environmental Science and Management (Hons)
Sarah Hart	Field surveys (Vegetation Mapping, ground-truthing and threatened species surveys)	Senior Ecologist, Accredited BAM Assessor Master of Science (Ecology and Zoology), Bachelor of Science (Zoology)
Maddie Sanders	Report preparation	Senior Ecologist Bachelor of Environmental Science and Management (Hons I)
Alex Cottle	Report preparation	Senior Ecologist Bachelor of Environmental Science and Management
Tim Cusack	Field surveys (Vegetation mapping, ground-truthing and threatened species surveys) and report preparation	Ecologist Bachelor of Science (Zoology)
Dayna Mitchell	Report preparation	Senior Ecologist Accredited BAM Assessor Bachelor of Environmental Science and Management

3.2 Desktop Assessment

A desktop assessment was conducted prior to the field surveys. The desktop assessment was conducted to help inform the field survey methodology and gain an understanding of the presence or likelihood of occurrence of threatened species, populations, ecological communities and migratory species in the Proposed Activity Area.

3.3 Database Search

A search of relevant databases was undertaken to obtain records on all threatened species, endangered populations, and TECs previously recorded within a 10 km buffer around the Proposed Activity Area (the locality). Database searches were also completed to obtain information on additional listed areas of ecological importance, key habitat features, vegetation communities and aquatic habitats. All current and preliminary listings under the BC Act, FM Act, and EPBC Act were considered. A list of all databases, access dates and search areas are outlined in **Table 3.2**.

Table 3.2 Databases Reviewed for the Desktop Assessment

Database	Date Accessed	Search Area	Comment
NSW Datasets			
BioNet- the website for the Atlas of NSW Wildlife and Threatened Biodiversity Data Collection (TBDC) http://www.BioNet.nsw.gov.au/ (NSW DCCEEW 2024a)	23 September 2024 and 10 March 2025	10 km x 10 km	Threatened species records formed the basis of the habitat assessment. Threatened species habitat requirements, spatial constraints and associated vegetation types recorded in the TBDC were used to inform habitat assessment in the Proposed Activity Area.
Vegetation information system (VIS) database http://www.environment.nsw.gov.au/NSWVCA20PRapp/LoginPR.aspx	23 September 2024	N/A	VIS system data, including PCT profiles and the PCT identification tool, reviewed to assist in identification PCTs and threatened ecological communities (TECs).
Register of Declared Areas of Outstanding Biodiversity Value (AOBV)	23 September 2024	10-kilometre buffer of the Proposed Activity Area	Non identified in the Proposed Activity Area.
NSW DPI Fisheries Fish Records Viewer https://www.dpi.nsw.gov.au/about-us/science-and-research/spatial-data-portal	22 November 2024	10 km x 10 km	Consideration of fish distribution data No key fish habitat was recorded within a 10km search of the database.
DPI's database for threatened aquatic species and communities https://www.dpi.nsw.gov.au/fishing/threatened-species/what-current	22 November 2024	10 km x 10 km	Consideration of fish distribution and habitat requirements.
Commonwealth Datasets			
The DCCEEW's Protected Matters Search Tool (PMST): http://environment.gov.au/erin/ert/epbc/index.html	29 January 2026	10 km x 10 km	A search for all threatened species, ecological communities and migratory species listed under the EPBC Act that may occur in the locality. The results are provided in **Appendix D**.

3.4 Threatened Flora and Fauna Likelihood of Occurrence

A likelihood of occurrence assessment was completed to determine the potential of the threatened species, populations and ecological communities identified in the literature review and database searches of occurring in the Proposed Activity Area. The likelihood of occurrence assessment was conducted against the criteria outlined in **Table 3.3**.

Table 3.3 Criteria Used for Assessing the Likelihood of Occurrence of Species within the Proposed Activity Area

Likelihood	Criteria
Recorded	The species or TEC was observed in the Proposed Activity Area during the current field surveys.
High	It is highly likely that a species inhabits the Proposed Activity Area and is dependent on identified suitable habitat (i.e., for breeding or important life cycle periods such as winter flowering resources), has been recorded recently in the locality (10km) and is known or likely to maintain resident populations in the Proposed Activity Area. Also includes species known or likely to visit the Proposed Activity Area during regular seasonal movements or migration.
Moderate	Potential habitat is present in the Proposed Activity Area. Species unlikely to maintain sedentary populations, however, may seasonally use resources within the Proposed Activity Area opportunistically or during migration. The species is unlikely to be dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitat within the Proposed Activity Area, or habitat is in a modified or degraded state. Includes cryptic flowering flora species that were not seasonally targeted by surveys and that have not been recorded.
Low	It is unlikely that the species inhabits the Proposed Activity Area and has not been recorded recently in the locality (10 km). It may be an occasional visitor but habitat similar to the Proposed Activity Area is widely distributed in the local area, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on available habitat. Specific habitat is not present in the Proposed Activity Area, or the species are a non-cryptic perennial flora species that were specifically targeted by surveys and not recorded.
None	Suitable habitat is absent from the Proposed Activity Area. Based on a field assessment of the habitat constraints or microhabitats on the Proposed Activity Area, the habitat is identified as being substantially degraded such that the species is unlikely to utilise the Proposed Activity Area (or specific vegetation zones), or an expert report that is prepared that states the species is unlikely to be present on the Proposed Activity Area or specific vegetation zones.

3.5 Field Survey Methods

The Proposed Activity Area was investigated over six days by Umwelt Ecologists on the 15 to 16 October 2024, 1 November 2024 and 1 to 2 December 2025. The survey involved walking throughout the Proposed Activity Area.

The biodiversity assessment of the Proposed Activity Area included the following methods:

- Rapid data point collection (RDP) focusing on vegetation points to confirm regional vegetation mapping
- Habitat feature search of the Proposed Activity Area for key habitat constraints
- Opportunistic threatened flora species surveys
- The biodiversity survey effort is displayed in **Figure 3.1**.

3.5.1 Vegetation and Threatened Flora

Vegetation communities within the Proposed Activity Area were determined using the most recent available vegetation mapping across the locality NSW State Vegetation Type Map: Release C2.0.M2.1 (November 2024) (NSW CRSEED 2024b). Vegetation communities within the Proposed Activity Area were then aligned to the State-wide system of Plant community Types (PCTs) using PCT descriptions provided by DPE. Rapid data points were taken across the Proposed Activity Area to inform the dominating species and assist in assigning to PCT.

There were targeted threatened flora surveys conducted as part of this assessment. Threatened flora surveys were limited to opportunistic surveys during the vegetation assessment.

3.5.2 Fauna and Fauna Habitats

A habitat assessment for fauna was conducted within the Proposed Activity Area. Habitat characteristics and parameters that were assessed included:

- Physical aspects such as climate (desktop), geology, soils, slope, elevation, drainage and aspect
- Presence and relative abundance of key habitat features
- Hollow-bearing trees (HBTs)
- Aquatic habitats
- Large hollow logs
- Rocky outcrops
- Termite mounds
- Nests
- Scats.

Whilst no formal threatened fauna surveys were conducted, opportunistic observations were recorded upon detection.

3.6 Limitations

This biodiversity assessment was designed as a habitat-based level of assessment, with the methodology developed for the purposes of conducting an assessment in accordance with Section 1.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and Part 7 of the *Biodiversity Conservation Act 2016* (BC Act). There were no targeted surveys undertaken and have been assessed in the likelihood table for suitable habitat and a 'Test of Significance' completed if considered moderate or high. Similarly, there were no formal vegetation plot sampling techniques used and

mapping of the extent of the vegetation community was limited to the Proposed Activity Area and not mapped throughout the broader area.

The timing of the field surveys for the majority of the threatened species (flora and fauna) were in breeding or flowering seasons and although the results of these surveys could not conclusively exclude any species presence or absence, many species were assessed in the likelihood table for suitable habitat and a 'Test of Significance' completed if considered moderate or high based on the availability of suitable habitat within the Proposed Activity Area.

FIGURE 3.1

Survey Effort

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Reserve
- Watercourse
- Highway
- Main / Local Roads
- Railway
- Hollow Bearing Tree
- Habitat Feature

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

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Kilometres

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4.0 Existing Environment

4.1 Landscape Context

The landscape context which describes attributes that are potentially relevant to the biodiversity occurring in the Proposed Activity Area is outlined in **Table 4.1** below.

Table 4.1 Landscape context of the Proposed Activity Area

Landscape Features	Landscape Context
IBRA region	Sydney Basin Interim Biogeographic Regionalisation for Australia (IBRA) Region in the east Brigalow Belt South Interim Biogeographic Regionalisation for Australia (IBRA) Region in the west
IBRA subregion	Hunter IBRA Sub-region of Sydney Basin IBRA Liverpool Range IBRA Sub-region of Brigalow Belt South IBRA
NSW (Mitchell) Landscapes	Scone-Gloucester Foothills, Upper Hunter Channels and Floodplain, Central Hunter Foothills, Lees Pinch Foothills, Liverpool Ranges Valleys and Foot slopes
Biodiversity Values Map	The proposed activity crosses or is adjacent to five features listed as 'Biodiverse riparian land' on the NSW Biodiversity Values Map. These areas are where the proposed activity intersects with creeks and streams
National parks and reserves	There are no National Parks or reserves within the Proposed Activity Area
Rivers, stream and estuaries	The proposed activity will intersect with waterways along its path including: • Two instances of 6th order streams, 'Dart Brook' and 'Kingdom Ponds' • One instance of 5th order streams, 'Parson's Gully' • One instance of 4th order streams, 'Middle Brook' • Two instances of 3rd order streams, 'Slip Rock Gully, and 'Moobi Gully' • Two instances of 2nd order streams (unnamed) • Six instances of 1st order streams (unnamed) These waterways converge downstream and flow into the Hunter River south of Aberdeen NSW
Wetlands (within, adjacent to and downstream) and Ground Dependent Ecosystems	The DCCEEW's PMST has identified one wetland of international importance 100-150 km downstream of the Project site. This area is listed as 'Ramsar Site Number 24 – Hunter Estuary'. The proposed activity will cross Groundwater Dependent Ecosystems, which are defined as 'ecosystems that need access to groundwater to meet all or some of their water requirements to maintain their communities of plants and animals, ecological processes and ecosystem services' (DPIE 2025)
Areas of geological significance or soil hazard features	No soil hazard features present in the proposed activity area
Connectivity	The proposed activity will have a minimal effect on the connectivity of vegetation and other habitats along its route. While some tree clearing is necessary in the western section, the existing vegetation is moderately sparse, and the impact will be limited to a maximum width of 5 m

4.2 Biodiversity Values

4.2.1 Plant Community Types

The Proposed Activity Area is located in a highly disturbed landscape with large areas of exotic grasslands used for agricultural purposes. In amongst the grasslands are small, disturbed patches of native vegetation that vary from dry sclerophyll forest on rocky substrates in the west to grassy woodlands with a highly modified understorey and a scattered canopy.

The rapid vegetation assessment has confirmed the presence of four PCTs, areas of exotic grassland and planted native vegetation and two areas of plantation within the Proposed Activity Area. The total extent of PCTs recorded in the Proposed Activity Area and the Proposed Activity Area are shown in **Table 4.2** and **Figure 4.1**.

Table 4.2 Plant Community Types (PCTs)

PCT #	PCT Name	Threatened Ecological Community BC Act	Threatened Ecological Community EPBC Act Listing	Proposed Activity Area Maximum Extent of Impact (ha)
0	Exotic Grassland	NA	NA	**31.01**
393	White Box shrubby woodland of the western Liverpool Range	NA	NA	**5.11**
3431	Central Hunter Ironbark Grassy Woodland – woodland variant	Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions - Endangered Ecological Community (EEC)	Central Hunter Valley eucalypt forest and woodland Critically Endangered Ecological Community (CEEC)	**1.62**
	Central Hunter Ironbark Grassy Woodland – grassland variant	NA	NA	**1.7**
3767	Upper Hunter Escarpment Colluvial Ironbark Forest	NA	NA	**5.66**
4089	Namoi-Upper Hunter River Red Gum Forest – Inland Riverine Forests – woodland variant	Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions (EEC)	NA	**1.3**
	Namoi-Upper Hunter River Red Gum Forest – Inland Riverine Forests – grassland variant	NA	NA	**0.45**
NA	Planted Native Vegetation	NA	NA	**2.78**
NA	Roads, infrastructure, dams	NA	NA	**0.33**
Total		**49.96**		

4.2.1.1 PCT 393: White Box Shrubby Woodland of the Western Liverpool Range

PCT 393	White Box shrubby woodland of the western Liverpool Range	
Vegetation Formation	Dry Sclerophyll Forests (Shrub/grass sub-formation)	
Vegetation Class	North-west Slopes Dry Sclerophyll Woodlands	
PCT Percent cleared	33%	
Proposed Activity Area (ha)	5.11	
General Description	PCT 393 was identified as occurring as a dry sclerophyll forest in moderate condition. The PCT was characterised by the dominance of white box (*Eucalyptus albens*) and an abundance of native shrub species, including *Olearia elliptica* and *Notelaea microcarpa*. PCT 393 in moderate condition typically contained a high cover of native forbs & vines occurring in the western portion of the Proposed Activity Area above the escarpment. This community occurs on loam to clay soils derived from sedimentary rocks such as fine sandstone, shale, mudstone or colluvium or volcanic basalt on hillslopes and hillcrests in the southern half of the NSW section of the Brigalow Belt South Bioregion, including on the western Liverpool Range.	
Structure and Characteristic Species (*denotes introduced species)	Upper Stratum	*Eucalyptus albens, Callitris* sp., *Angophora floribunda, Brachychiton populneus* subsp. *populneus*.
	Mid Stratum	*Olearia elliptica* subsp. *elliptica, Notelaea microcarpa* var. *microcarpa and Acacia implexa*
	Ground Stratum	*Austrostipa verticillata, Aristida vagans, Dichondra repens, Austrodanthonia recemosa*
BC Act Status	N/A	
EPBC Act Status	N/A	

4.2.1.2 PCT 3767: Upper Hunter Escarpment Colluvial Ironbark Forest – Western Slopes Dry Sclerophyll Forests (Shrubby sub-formation)

PCT 3767	Upper Hunter Escarpment Colluvial Ironbark Forest		
Vegetation Formation	Dry Sclerophyll Forests (Shrubby sub-formation)		
Vegetation Class	Western Slopes Dry Sclerophyll Forests		
PCT Percent cleared	47%		
Proposed Activity Area (ha)	5.66		
General Description	This vegetation community grows on the colluvial benches and flats in the drier sandstone ranges of the Upper Hunter region. This PCT has a legacy PCT 1654, which has been split into both PCT 3767 and PCT 3768. In the Proposed Activity Area, this PCT occurs in the west, occupying the skeletal soils associated with the escarpment that borders the UHEP. The vegetation is often uniform with a scattered cover of narrow-leaved ironbark (*Eucalyptus crebra*) in the canopy and the native olive (*Notelaea microcarpa*) throughout the midstorey. Species composition and structure were generally influenced by the extent of rocky exposed substrate. This community grades into PCT 393 on the ridge of the escarpment and PCT 3431 on the lower slopes and flats.		
Structure and Characteristic Species (*denotes introduced species)	Upper Stratum	*Eucalyptus crebra* *Callitris sp.* *Notelaea microcarpa var. microcarpa,* *Brachychiton populneus*	
	Mid Stratum	*Gaudium trinervium* *Acacia crassa subsp. crassa*	
	Ground stratum	*Aristida ramosa, Cymbopogon refractus, Lomandra longifolia, Panicum effusum*	
BC Act Status	N/A		
EPBC Act Status	N/A		

4.2.1.3 PCT 3431: Central Hunter Ironbark Grassy Woodland – Hunter-Macleay Dry Sclerophyll Forests (Shrub/grass sub-formation)

PCT 3431	Central Hunter Ironbark Grassy Woodland - Hunter-Macleay Dry Sclerophyll Forests (Shrub/grass sub-formation)	
Vegetation Formation	Dry Sclerophyll Forests (Shrub/grass sub-formation)	
Vegetation Class	Hunter-Macleay Dry Sclerophyll Forests	
PCT Percent cleared	86%	
Proposed Activity Area (ha)	Woodland variant: 1.62	
	Grassland variant: 1.7	
General Description	A tall sclerophyll open forest or woodland with a sparse cover of dry shrubs and a mid-dense grassy ground layer that occurs mainly on the undulating floor of the central Hunter Valley with scattered areas on adjoining ranges. The canopy very frequently includes *Eucalyptus crebra* with a high foliage cover, either exclusively or occasionally in association with *Eucalyptus moluccana* (and or its hybrid with *Eucalyptus albens*). *Allocasuarina luehmannii* is common, either in the mid-stratum or as a member of the canopy where eucalypt species are regenerating. The mid-stratum very frequently includes only a sparse cover, with occasional *Notelaea microcarpa* or *Maireana microphylla* and rarely the lower-growing chenopod shrub *Enchylaena tomentosa*. Taller species of Acacia, such as *Acacia salicina* and *Acacia falcata*, are rare. The mid-dense ground layer is mainly comprised of a high diversity of grasses and forbs with some graminoids, twiners, hardy ferns, low-growing shrubs and sedges. This PCT is present in the Proposed Activity Area as small, isolated remnants with a highly modified groundlayer that is a mix of native grasses such as spear grass and three-awn grass with a persistent cover of pasture improvement species (*Lolium* and *Bromus* species (Exotics)); the shrub layer is generally absent. The canopy is almost always narrow-leaved ironbark (*Eucalyptus crebra*).	
Structure and Characteristic Species **(*denotes introduced species)**	Upper Stratum	*Eucalyptus crebra* *Eucalyptus melliodora* *Brachychiton populneus*
	Mid Stratum	*Notelaea macrocarpa*
	Ground stratum	*Austrostipa verticillata* *Einadia sp.* *Dichondra repens*

PCT 3431	Central Hunter Ironbark Grassy Woodland - Hunter-Macleay Dry Sclerophyll Forests (Shrub/grass sub-formation)
Vegetations Zones	Woodland variant: The woodland variant is considered areas where a canopy of eucalypt persists. Grassland variant: The grassland variant are areas where the canopy has been and a mixed native groundcovers
BC Act Status	Only the woodland variant conforms to the Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions - Endangered Ecological Community (EEC)
EPBC Act Status	Only the woodland variant conforms to the Central Hunter Valley eucalypt forest and woodland Critically Endangered Ecological Community (CEEC)

4.2.1.4 PCT 4089: Namoi-Upper Hunter River Red Gum Forest – Inland Riverine Forests

PCT 4089	Namoi-Upper Hunter River Red Gum Forest - Inland Riverine Forests	
Vegetation Formation	Forested Wetlands	
Vegetation Class	Inland Riverine Forests	
PCT Percent cleared	94%	
Proposed Activity Area (ha)	Woodland variant: 1.3	
	Grassland variant: 0.45	
General Description	A very tall sclerophyll and Casuarina forest to open forest or woodland with a mid-stratum that is absent or sparse and a grassy ground layer, found on alluvial floodplains of the upper Hunter and Namoi river catchments. The canopy almost always includes *Eucalyptus camaldulensis*, rarely with *Casuarina cunninghamiana* subsp. *cunninghamiana*. There is usually no mid-stratum in this PCT. The dense ground layer is mainly comprised of grasses and forbs, almost always including *Cynodon dactylon* with high cover, and occasionally *Rumex brownii, Alternanthera denticulata, Austrostipa verticillata, Urtica incisa and Paspalidium constrictum*. This PCT primarily occurs along the Hunter River and its tributaries between Singleton and Scone. This PCT occurs in hot, dry climates receiving less than 650 mm mean annual rainfall. This PCT is present in the Proposed Activity Area as small, disturbed remnants with a highly modified groundlayer more commonly containing exotic species from adjacent pasture improvement areas. The groundlayer also contains natives such as *Cynodon dactylon* (couch grass). The shrub layer is absent, and the canopy is only present as scattered individuals mainly regrowth of *Casuarina cunninghamiana* (river oak) and the very occasional *Eucalyptus camaldulensis* (river red gum), *E. melliodora* (yellow box) or *Angophora floribunda* (rough-barked apple).	
Structure and Characteristic Species (*denotes introduced species)	Upper Stratum	*Eucalyptus camaldulensis* *Casuarina cunninghamiana* subsp. *cunninghamiana* *Angophora floribunda*
	Mid Stratum	*Notelaea macrocarpa*
	Ground stratum	*Cynodon dactylon* *Paspalidium* sp *Einadia nutans* *Austrostipa verticillata*
Vegetation Zones	Woodland variant: The woodland variant is considered areas where a canopy of eucalypt persists. Grassland variant: The grassland variant are areas where the canopy has been and a mixed native groundcovers	

PCT 4089	Namoi-Upper Hunter River Red Gum Forest - Inland Riverine Forests
BC Act Status	Only the woodland variant conforms to the Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions (EEC)
EPBC Act Status	N/A

Planted Native Vegetation

PCT Nil	Planted Native Vegetation
Vegetation Formation	N/A
Vegetation Class	N/A
PCT Percent cleared	N/A
Proposed Activity Area (ha)	2.78

General Description	The Proposed Activity Area intersects two areas of planted native vegetation. The first area of planted native vegetation is situated between Cliftlands and Invermien Roads. This patch is dominated by blue gums, with potentially both *Eucalyptus saligna and Eucalyptus globulus* occurring. The second area of planted native vegetation occurs to the east of Kelly Street (Scone), this planting acts as a screening from the substation. The dominant species within this planted zone include *Casuarina glauca* (swamp oak), *Eucalyptus blakelyi,*(Blakely's red gum).
BC Act Status	N/A
EPBC Act Status	N/A

FIGURE 4.1

Vegetation Communities Within the Proposed Activity Area

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Watercourse
- Highway
- Main / Local Roads
- Railway

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

Plant Community Types

- -1 - Planted
- 0 - Dam
- 0 - Exotic Grassland
- 0 - Infrastructure
- 0 - Road
- 3431 - Central Hunter Ironbark Grassy Woodland
- 3767 - Upper Hunter Escarpment Colluvial Ironbark Forest
- 393 - White Box shrubby woodland of the western Liverpool Range, Warrumbungle Range and south-west Pilliga forests, Brigalow Belt South Bioregion
- 4089 - Namoi-Upper Hunter River Red Gum Forest

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Kilometres

Scale 1:50,000 at A4
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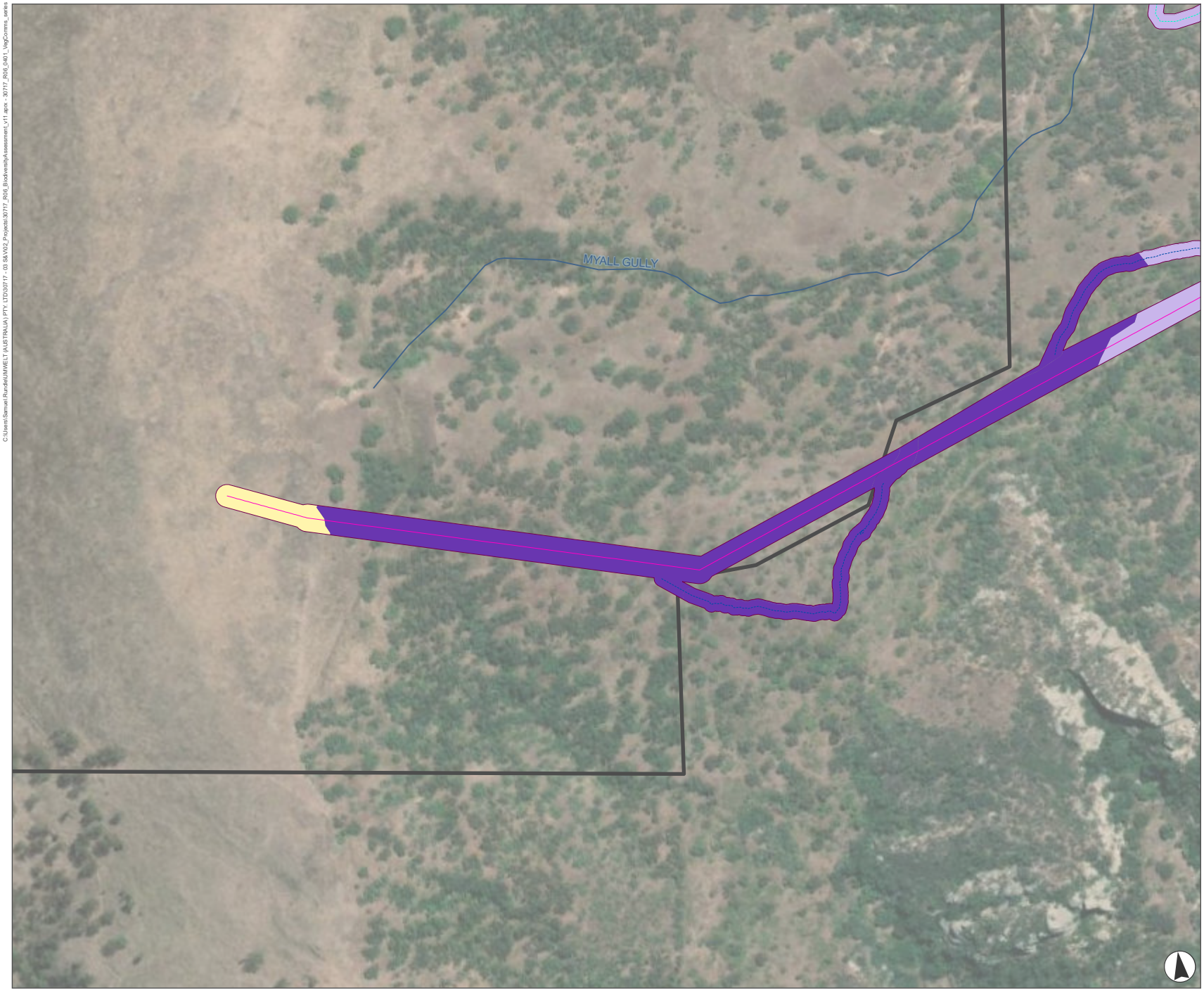


FIGURE 4.1.1

Vegetation Communities Within the Proposed Activity Area

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Watercourse

Proposed 66kV Power Line Route

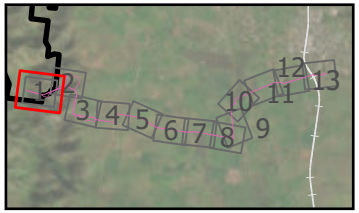
- Proposed 66kV Power Line Route

Access Route

- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

Plant Community Types

- 0 - Exotic Grassland
- 3767 - Upper Hunter Escarpment Colluvial Ironbark Forest
- 393 - White Box shrubby woodland of the western Liverpool Range, Warrumbungle Range and south-west Pilliga forests, Brigalow Belt South Bioregion



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Metres

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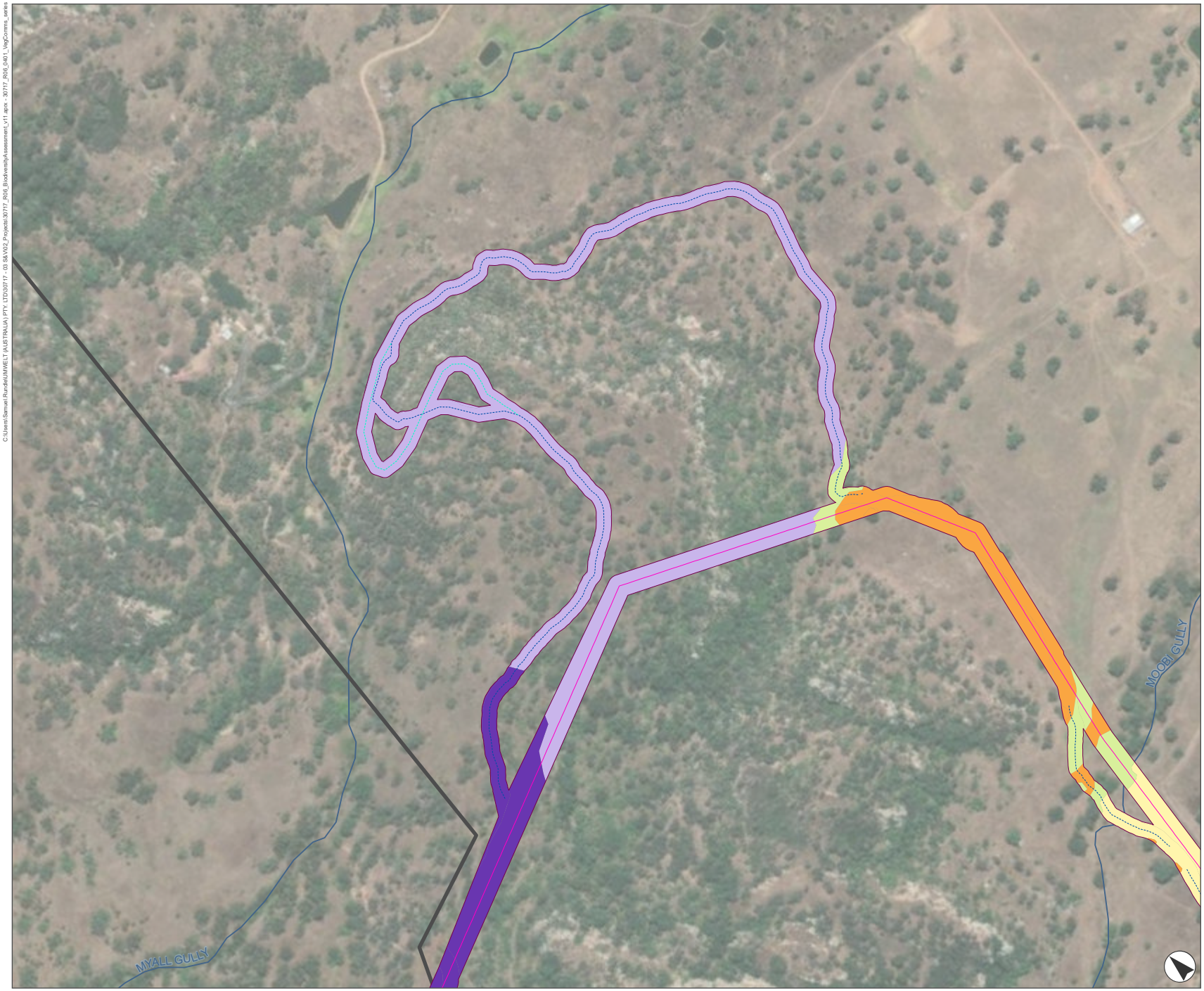

FIGURE 4.1.2

Vegetation Communities Within the Proposed Activity Area

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Watercourse

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

Plant Community Types

- 0 - Exotic Grassland
- 3431 - Central Hunter Ironbark Grassy Woodland
- 3767 - Upper Hunter Escarpment Colluvial Ironbark Forest
- 393 - White Box shrubby woodland of the western Liverpool Range, Warrumbungle Range and south-west Pilliga forests, Brigalow Belt South Bioregion
- 4089 - Namoi-Upper Hunter River Red Gum Forest

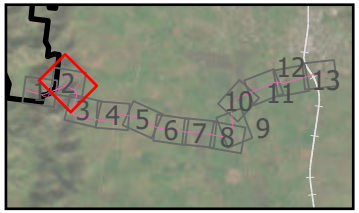

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FIGURE 4.1.3

Vegetation Communities Within the Proposed Activity Area

Legend

- Proposed Activity Area
- Watercourse

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Proposed Access Track – Upgrade of Existing Track

Plant Community Types

- 0 - Dam
- 0 - Exotic Grassland
- 3431 - Central Hunter Ironbark Grassy Woodland
- 3767 - Upper Hunter Escarpment Colluvial Ironbark Forest
- 4089 - Namoi-Upper Hunter River Red Gum Forest

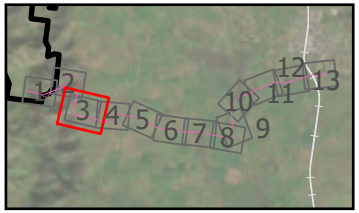

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FIGURE 4.1.4

Vegetation Communities Within the Proposed Activity Area

Legend

- Proposed Activity Area
- Watercourse
- Main / Local Roads

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Proposed Access Track – Upgrade of Existing Track

Plant Community Types

- -1 - Planted
- 0 - Exotic Grassland
- 3431 - Central Hunter Ironbark Grassy Woodland

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FIGURE 4.1.5

Vegetation Communities Within the Proposed Activity Area

Legend

- Proposed Activity Area
- Watercourse

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Plant Community Types

- -1 - Planted
- 0 - Exotic Grassland
- 3431 - Central Hunter Ironbark Grassy Woodland

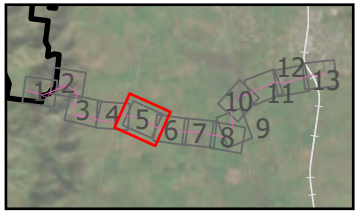

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FIGURE 4.1.6

Vegetation Communities Within the Proposed Activity Area

Legend

- Proposed Activity Area
- Watercourse
- Main / Local Roads

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Plant Community Types

- 0 - Exotic Grassland
- 3431 - Central Hunter Ironbark Grassy Woodland
- 4089 - Namoi-Upper Hunter River Red Gum Forest

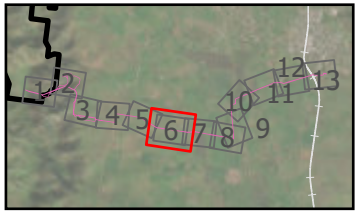

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FIGURE 4.1.7

Vegetation Communities Within the Proposed Activity Area

Legend

- Proposed Activity Area
- Watercourse
- Main / Local Roads

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Plant Community Types

- -1 - Planted
- 0 - Exotic Grassland
- 3431 - Central Hunter Ironbark Grassy Woodland
- 4089 - Namoi-Upper Hunter River Red Gum Forest

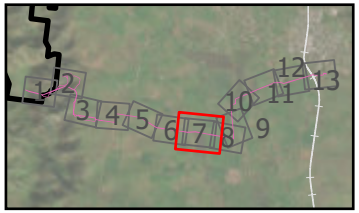

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FIGURE 4.1.8

Vegetation Communities Within the Proposed Activity Area

Legend

- Proposed Activity Area
- Watercourse
- Main / Local Roads

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Plant Community Types

- -1 - Planted
- 0 - Exotic Grassland

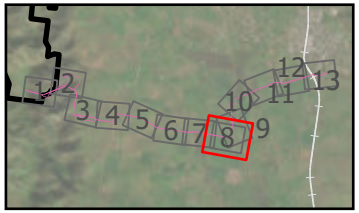

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FIGURE 4.1.9

Vegetation Communities Within the Proposed Activity Area

Legend

- Proposed Activity Area
- Watercourse
- Main / Local Roads

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Plant Community Types

- -1 - Planted
- 0 - Exotic Grassland
- 3431 - Central Hunter Ironbark Grassy Woodland

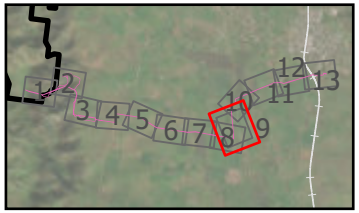

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FIGURE 4.1.10

Vegetation Communities Within the Proposed Activity Area

Legend

- Proposed Activity Area
- Watercourse
- Main / Local Roads

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Existing Access Routes

Plant Community Types

- -1 - Planted
- 0 - Exotic Grassland
- 3431 - Central Hunter Ironbark Grassy Woodland
- 4089 - Namoi-Upper Hunter River Red Gum Forest

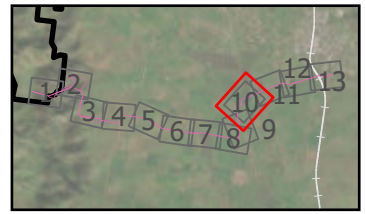

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FIGURE 4.1.11

Vegetation Communities Within the Proposed Activity Area

Legend

- Proposed Activity Area
- Watercourse
- Main / Local Roads

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Existing Access Routes

Plant Community Types

- -1 - Planted
- 0 - Exotic Grassland
- 4089 - Namoi-Upper Hunter River Red Gum Forest

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FIGURE 4.1.12

Vegetation Communities Within the Proposed Activity Area

Legend

- Proposed Activity Area
- Watercourse
- Highway
- Main / Local Roads
- Railway

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Existing Access Routes

Plant Community Types

- 0 - Exotic Grassland
- 0 - Road
- 4089 - Namoi-Upper Hunter River Red Gum Forest

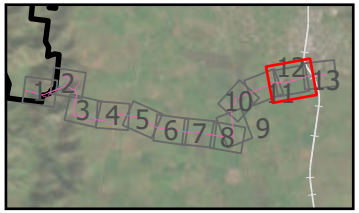

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FIGURE 4.1.13

Vegetation Communities Within the Proposed Activity Area

Legend

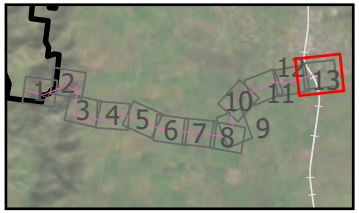
- Proposed Activity Area
- Watercourse
- Highway
- Main / Local Roads
- Railway

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Plant Community Types

- -1 - Planted
- 0 - Exotic Grassland
- 0 - Infrastructure
- 0 - Road
- 4089 - Namoi-Upper Hunter River Red Gum Forest



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4.2.2 Threatened Ecological Communities

A total of two BC Act listed threatened ecological communities (TECs) have been identified within the Proposed Activity Area and a single EPBC Act listed TEC. A precautionary approach has been taken when identifying these communities due to the high-level field validation works undertaken to inform the BAR. The listed TECs are shown in **Table 4.3** and in **Figure 4.2** and a detailed description has been provided in in **Sections 4.2.2.1** to **Section 4.2.2.3**.

Table 4.3 Extent of Threatened Ecological Communities

Threatened Ecological Community	Listing Status	Proposed Activity Area (ha)
EPBC Act		
Central Hunter Valley eucalypt forest and woodland ecological community	Critically Endangered Ecological Community	1.62
BC Act		
Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions	Endangered Ecological Community	1.62
Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions	Endangered Ecological Community	1.3

Analysis of field descriptions against the scientific determinations for TECs was undertaken, with consideration of the advice provided by the NSW scientific Committee and/or the Commonwealth Threatened Species Scientific Committee guidelines for interpreting listings for species, populations and ecological communities under the BC Act and EPBC Act, respectively. In particular, comparison was made for floristic structure and composition, geographical location, biophysical attributes (soil types, location in the landscape, etc.) and other specifically relevant attributes, such as key diagnostics features (in the case of the EPBC Act CEEC.

4.2.2.1 BC Act Listed Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions – EEC

PCT 3431 has the potential to conform to the Central Hunter Grey Box-Ironbark Woodland EEC. Within the Proposed Activity Area, this PCT occurs as two vegetation variants being woodland and a grassland variant. The woodland variant is considered areas where a canopy of eucalypt persists, whereas the grassland variant are areas where the canopy has been and a mixed native groundcovers. As the Central Hunter Grey Box-Ironbark Woodland EEC does not apply to grasslands, only the woodland variant has been assessed as conforming to this EEC. **Table 4.3** provides the analysis of the BC Act EEC -Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions against the Final Determination.

Table 4.3 Comparison of PCT 3431 with the BC Act Listed -Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions – EEC

Final Determination Central Hunter Grey Box-Ironbark Woodland EEC	PCT 3431 Central Hunter Ironbark Grassy Woodland
Location – on NSW North Coast and Sydney Basin Bioregion	NSW North Coast Bioregion.
Location – recorded in the LGAs of Cessnock, Singleton and Muswellbrook	Does not occur in one of the LGAs. The Proposed Activity Area is approximately 11km from the Muswellbrook LGA northern boundary.
Generally, occurs on Permian sediments	Occurs on soils characterised by carboniferous sediments and Permian sediments. The use of the term generally suggests the EEC does not explicitly occur on Permian sediments, therefore, could occur on carboniferous sediments.
Community structure is typically Woodland	Occurs as an Open Woodland, depending on land use and disturbance history.
Characteristic flora species assemblage	The small number of species recorded are all part of the floristic assemblage of the community.
Canopy is dominated by *Eucalyptus crebra, Brachychiton populneus subsp. populneus and Eucalyptus moluccana*. Other trees species present occasionally dominant or co-dominant include *Angophora floribunda* and *Callitris endlicheri*	Canopy is dominated by *Eucalyptus crebra*. Due to the historic clearing, it was not possible to determine if the other characteristic species had been present.
A shrub layer may be present with a number of common species listed including *Notelaea microcarpa var. microcarpa, Dodonaea viscosa, Breynia oblongifolia*	The shrub layer, where present, consists of *Notelaea macrocarpa*.
A moderately dense ground cover occurs, with a diversity of forbs and grasses. Also present at small numbers are ferns, sedges and twiners	The ground cover is moderately dense, with a grass-dominant cover that is a mix of native and exotic species.
CONCLUSION	Vegetation mapped as the woodland variant of PCT 3431 has all been conservatively assigned to the Central Hunter Grey Box-Ironbark Woodland EEC listed under the BC Act based on meeting the Final Determination characteristics listed above

4.2.2.2 BC Act Listed Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions ECC

PCT 4089 has the potential to conform to the Hunter Floodplain Red Gum Woodland EEC. Within the Proposed Activity Area, this PCT occurs as two vegetation variants being woodland and a grassland variant. The woodland variant is considered areas where a canopy of eucalypt persists, whereas the grassland variant are areas where the canopy has been and a mixed native groundcovers. As the Hunter Floodplain Red Gum Woodland EEC does not apply to grasslands, only the woodland variant has been assessed as conforming to this EEC. **Table 4.4** provides the analysis of the BC Act Listed Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions EEC against the Final Determination.

Table 4.4 Comparison of PCT 4089 with the BC Act Listed – Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions – EEC

Final Determination Hunter Floodplain Red Gum Woodland EEC	PCT 4089 Namoi-Upper Hunter River Red Gum Forest - Inland Riverine Forests
Location – on NSW North Coast and Sydney Basin Bioregion	NSW North Coast Bioregion.
Location – recorded in the LGAs of Maitland, Mid-Western, Muswellbrook, Singleton, and Upper Hunter	Does occur in the Upper Hunter LGAs.
Generally, occurs on floodplains and associated floodplain rises along the Hunter River and tributaries	All occurrences of this community within the Proposed Activity Area occur on the floodplains of tributaries leading to the Hunter River.
Community structure is typically a tall Woodland	The disturbed nature of the vegetation within the Proposed Activity Area does not represent a tall woodland currently a disturbed open woodland.
Characteristic flora species assemblage	The small number of species recorded are all part of the floristic assemblage of the community.
Dominated by *Eucalyptus camaldulensis* (river red gum) in combinations with *Eucalyptus tereticornis* (forest red gum), *Eucalyptus melliodora* (yellow box) and *Angophora floribunda* (rough-barked apple). Within the community stands of *Casuarina cunninghamiana subsp. cunninghamiana* (river oak) and *Casuarina glauca* (swamp oak) can form a part of this community	Canopy is sparse in areas mapped as 4089 *Eucalyptus camaldulensis* (river red gum), *Eucalyptus melliodora* (yellow box) and *Angophora floribunda* (rough-barked apple and Casuarina *cunninghamiana subsp. cunninghamiana* (river oak) were all observed within the Proposed Activity Area on floodplains.
CONCLUSION	Vegetation mapped as the woodland variant of PCT 4089 has all been conservatively assigned to the Hunter Floodplain Red Gum Woodland EEC listed under the BC Act based on meeting most of the Final Determination characteristics listed above

4.2.2.3 EPBC Act Listed Central Hunter Valley Eucalypt Forest and Woodland CEEC

PCT 3431 has the potential to conform to the Central Hunter Valley Eucalypt Forest and Woodland CEEC. Within the Proposed Activity Area, this PCT occurs as two vegetation variants being woodland and a grassland variant. The woodland variant is considered areas where a canopy of eucalypt persists, whereas the grassland variant are areas where the canopy has been and a mixed native groundcovers. As the Central Hunter Valley Eucalypt Forest and Woodland CEEC does not apply to grasslands, only the woodland variant has been assessed as conforming to this CEEC. Table 4.6 provides the analysis of the EPBC Act Listed- Central Hunter Valley Eucalypt Forest and Woodland CEEC against the Commonwealth Conservation Advice.

Table 4.5 Comparison of PCT 3431 with the EPBC Act Listed – Central Hunter Valley Eucalypt Forest and Woodland - CEEC

Key Diagnostic Characteristic of CEEC	PCT 3431 Central Hunter Ironbark Grassy Woodland – Hunter-Macleay Dry Sclerophyll Forests (Shrub/grass sub-formation)
Occurs in the Hunter river catchment	Occurs within the Hunter catchment.
Typically occurs on lower hillslopes and lower ridges, or valley floors in undulating country, on soils derived from Permian sedimentary rocks	Occurs on hillslopes, low ridges, and valley flats on carboniferous and Permian sediments.
Does not occur on alluvial flats, river terraces, Aeolian sands, Triassic sediments or escarpments	The PCT 3431 does not occur in alluvial flats, river terraces, Aeolian sands, Triassic sediments or escarpments within the Proposed Activity Area.
Is a woodland or forest, with projected canopy cover of trees of 10% or more, or with a native tree density of at least 10 native tree stems per 0.5 ha (at least 20 native stems/ha) that are at least 1 m in height	It is estimated that the projected canopy cover and/or native tree density (>1 m high) complied with these requirements.
The canopy is dominated by *Eucalyptus crebra, Corymbia maculata, Eucalyptus dawsonii and/or Eucalyptus moluccana*; Or *Allocasuarina luehmannii* dominates in combination with one of these species	Canopy is dominated by *Eucalyptus crebra*. Due to the historic clearing, it was not possible to determine if the other characteristic species had been present.
Allocasuarina torulosa, Eucalyptus acmenoides and Eucalyptus fibrosa are largely absent from the canopy of a patch	These species are absent in the mapped areas of PCT3431 within the Proposed Activity Area.
A ground layer is present as a sparse to thick layer of native grasses and other native herbs and/or native shrubs	The ground cover is moderately dense, with a grass-dominant cover that is a mix of native and exotic species.
CONCLUSION	The woodland variant of PCT 3431 is considered to be consistent with the *Central Hunter Valley Eucalypt Forest and Woodland* CEEC. listed under the EPBC Act

4.2.3 Threatened Flora

There were no formal targeted surveys for threatened flora. Opportunistic surveys were carried out for threatened flora detectable during the survey period.

A total of 20 subject threatened flora, as listed under the BC Act and/or EPBC Act, were considered in this assessment (Refer to **Appendix A**). This list was derived from the database searches outlined in **Section 3.3.** Threatened flora species that were opportunistically surveyed included:

- *Acacia pendula* (weeping myall)
- *Cymbidium canaliculatum* (tiger orchard)
- *Eucalyptus camaldulensis* (river red gum).

During the preliminary field surveys, *Eucalyptus camaldulensis* (river red gum) were recorded in the Proposed Activity Area. The Hunter catchment population of this species is listed as Endangered under the BC Act. No other threatened flora species were recorded during the field survey.

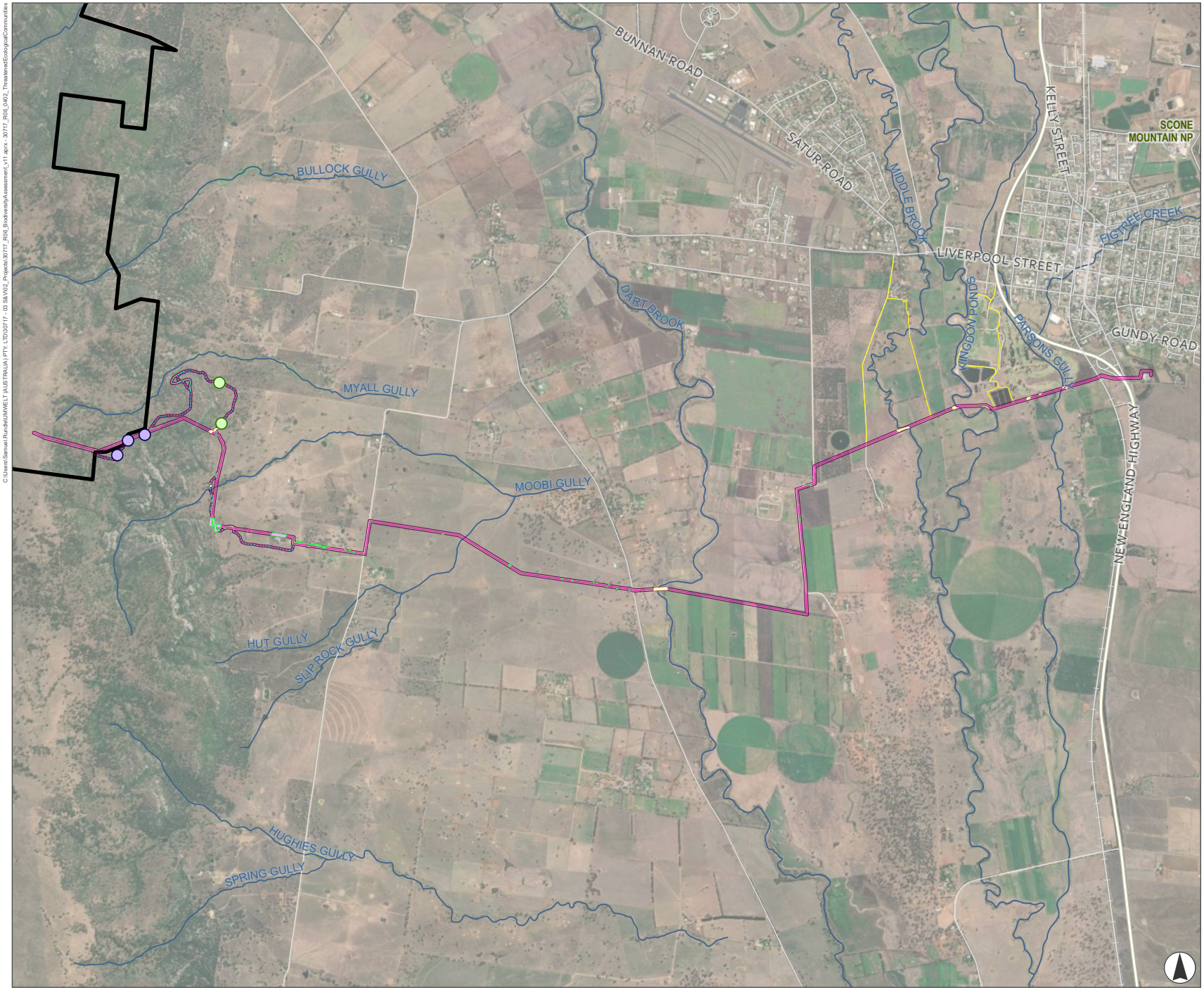

FIGURE 4.2

Threatened Species and Ecological Communities

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Reserve
- Watercourse
- Highway
- Main / Local Roads
- Railway

Threatened Species

- Grey-crowned babbler
- Speckled warbler

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

Access Route

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

BC Act

- Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions
- Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions

EPBC Act

- Central Hunter Valley eucalypt forest and woodland

0 1 2

Kilometres

Scale 1:50,000 at A4
GDA2020 MGA Zone 56

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Image Source: ESRI Basemap (2025) | **Data Source:** NSW DFSI (2024), YZ Consulting (2025)

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4.3 Non-native Vegetation

Under the general biosecurity duty, all plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

During the field survey there were three species listed as priority weeds under the NSW *Biosecurity Act 2015* for the Hunter LGA region recorded within the Proposed Activity Area: prickly pear (*Opuntia* spp.), fireweed (*Senecio madagascariensis*) and Patterson's curse (*Echium plantagineum*).

4.4 Terrestrial Fauna and Fauna Habitat

4.4.1 Threatened Fauna

A total of 46 threatened fauna species have previously been recorded (BioNet Atlas) or are predicted to have habitat (EPBC Act) within the locality. This list was derived from the database searches outlined in **Section 3.3**. There were 25 birds, two amphibians, three reptiles and 16 mammal species considered. Of these, there were 32 threatened fauna that were considered to have a moderate or greater likelihood of occurrence in the Proposed Activity Area due to the potential suitable habitat features and/or nearby records. Many threatened species may have the potential to utilise and forage in the Proposed Activity Area, although due to the connectivity, there are areas of higher quality and less disturbed areas nearby that would be more likely to contain the necessary habitat features for many of the threatened species.

No formal surveys were conducted for threatened fauna, opportunistic surveys were carried out such as bird watching during vegetation surveys. During the field survey, two threatened fauna species were recorded, including thirteen grey-crowned babblers (eastern subspecies) (*Pomatostomus temporalis temporalis*) and four speckled warblers (*Pyrrholaemus sagittatus*). Both species are listed as Vulnerable under the BC Act and use woodland habitats within the Proposed Activity Area. Threatened species locations are shown in Figure 4.2.

A likelihood of occurrence assessment has been undertaken against each of the threatened fauna species that are predicted to occur in the locality. The full likelihood of occurrence assessment can be found in **Appendix A** with a summary of threatened fauna species that were recorded during surveys or are considered to have a moderate likelihood of occurrence and be impacted by the Proposed Activity is provided in Table 5.3.

4.4.2 Fauna Habitat

4.4.2.1 Woodland Habitat and Hollow Bearing Trees

Woodland habitat provides a wide range of food and shelter for vertebrate fauna. Trees from the family Myrtaceae (mostly *Eucalyptus* spp.) generally dominate the upper canopy in these areas and supply direct (foliage, nectar, exudates) and indirect food (arthropods) for a range of vertebrates, particularly birds and arboreal mammals.

Tree hollows (formed in dead trees (stags) and mature trees) provide nesting and roosting habitats for hollow-dwelling fauna and are important habitat components of native forests. There were several tree hollows seen throughout the Proposed Activity Area and have been mapped, of which there are 27 that would be impacted by the Proposed Activity. Any hollow dependent threatened species has been reviewed and has been assessed in the likelihood table for suitable habitat and a 'Test of Significance' completed if considered moderate or high. Hollow bearing tree locations are displayed on **Figure 4.1**.

4.4.2.2 Riparian Habitat

Riparian habitats generally support a high diversity of plant and animal species, providing critical habitat for many, including threatened species. The vegetation in these areas helps to filter pollutants from runoff before they enter waterways, improving water quality by reducing sediment, nutrient loads, and contaminants. Additionally, the roots of riparian vegetation stabilise stream banks, reducing erosion and preventing the loss of valuable land and habitat. During floods, riparian zones act as natural buffers, absorbing excess water and mitigating the impact on surrounding areas. Furthermore, these zones help to moderate local climates by providing shade and reducing temperatures in and around waterways.

The riparian habitat within the Proposed Activity Area includes areas that intersect waterways in the east, such as Parsons Gulley and a small unnamed creek east of the golf course. It also includes Kingdon Creek, Middle Brook, and Dart Brook. Off the escarpment, Moobi Gully, a non-perennial watercourse, features a lower quality riparian habitat.

The riparian zones through the Proposed Activity Area were habitat for common bird species (for example Pacific black ducks were observed), and no signs of frogs or fish were observed. The highly disturbed nature of the riparian habitat coupled with the fragmentation of the remnant vegetation in the wider landscape would restrict the utilisation of these areas other than by highly mobile species moving across the landscape.

4.4.2.3 Photographs of Fauna Habitats

Below are several photos representing the quality of habitat throughout the Proposed Activity Area.

Photo 4.1 Riparian area along Parsons Gulley

Photo 4.2 Vegetation within PCT 393 White Box shrubby woodland

Photo 4.3 Riparian area along Dart Brook

Photo 4.4 Stag tree with hollows near Middle Brook

Photo 4.5 Surface rocks in the west of the Proposed activity Area

Photo 3.6 Hollow bearing tree in the west of the Proposed activity Area

4.5 Wildlife Connectivity Corridors

A wildlife corridor is a link of habitat, generally native vegetation, which joins two or more areas of similar wildlife habitat (DEC 2004). Corridors are critical for the maintenance of ecological processes, including facilitating the movement of genes, individuals, species and populations and enabling the continuation of viable populations (DEC 2004).

The Proposed Activity Area does not affect corridors between State Forests nor National Parks in the region. It is unlikely that the Proposed Activity will affect exchange of genes between individuals or populations of species that occur in the general area, given the relatively narrow Proposed Activity Area.

4.6 Matters of National Environmental Significance

The Commonwealth Department of Climate Change Energy, Environment and Water (Cth DCCEEW) Protected Matters Search Tool (PMST) (**Appendix D**) has identified one wetland of international importance 100 – 150 km downstream of the Proposed Activity Area. This wetland is listed as 'Ramsar

Site Number 24 – Hunter Estuary'. All activity relating to the Proposed Activity should be managed appropriately for spills of liquid or dry chemicals.

Other Matters of National Environmental Significance are addressed elsewhere in the report, including Threatened Ecological Communities (**Section 4.2.2**, listed threatened flora species (**Section 4.2.3**), and listed threatened fauna and listed migratory species (**Section 4.4.1**).

4.7 Groundwater Dependent Ecosystems

Groundwater dependent ecosystems (GDEs) are classed into three groups by the Australian Bureau of Meteorology: aquatic GDEs, terrestrial GDEs and subterranean GDEs.

The Proposed Activity will cross Groundwater Dependent Ecosystems, which are defined as 'ecosystems that need access to groundwater to meet all or some of their water requirements to maintain their communities of plants and animals, ecological processes and ecosystem services' (DPIE 2025).

5.0 Impact Assessment

An assessment of the potential impacts of the Proposed Activity on biodiversity with impacts categorised as direct or indirect as described in DPE (2018). The following is the description of each impact type:

Direct impacts are those that directly affect habitat and individuals. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat. When applying each factor, consideration must be given to all of the likely direct impacts of the proposed activity or development.

Indirect impacts occur when project-related activities affect species, populations or ecological communities in a manner other than direct loss. 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, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas. As with direct impacts, consideration must be given, when applying each factor, to all of the likely indirect impacts of the proposed activity or development."

5.1 Direct Impacts

5.1.1 Removal of Native Vegetation

The direct impacts to native vegetation will be restricted to the Proposed Activity Area. The Proposed Activity Area would result in up to 49.96 ha unavoidable direct impacts.

The unavoidable impacts include the removal of vegetation that was not assigned to a native vegetation type; these include:

- Exotic Grassland: 31.34 ha.

The unavoidable impacts to native vegetation within the Proposed Activity Area totals 18.62 ha and have been summarised in **Table 5.1** below.

Table 5.1 Direct Impacts to Native Vegetation

PCT #	PCT Name	Threatened Ecological Community BC Act	Threatened Ecological Community EPBC Act Listing	Proposed Activity Area Maximum Extent of Impacts (ha)
393	White Box shrubby woodland of the western Liverpool Range	NA	NA	**5.11**
3431	Central Hunter Ironbark Grassy Woodland – woodland variant	Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions – Endangered Ecological Community (EEC)	Central Hunter Valley eucalypt forest and woodland Critically Endangered Ecological Community (CEEC)	**1.62**
	Central Hunter Ironbark Grassy Woodland – grassland variant	NA	NA	**1.7**
3767	Upper Hunter Escarpment Colluvial Ironbark Forest	NA	NA	**5.66**
4089	Namoi-Upper Hunter River Red Gum Forest – Inland Riverine Forests – woodland variant	Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions (EEC)	NA	**1.3**
	Namoi-Upper Hunter River Red Gum Forest – Inland Riverine Forests – grassland variant	NA	NA	**0.45**
NA	Planted Native Vegetation	NA	NA	**2.78**
Total				**18.62**

5.1.2 Removal of Threatened Flora Habitat

Of the threatened flora identified in **Section 4.2.3** and assessed for their likelihood of occurrence in **Appendix A**, three are considered to have potential habitat within the Proposed Activity Area and have a moderate or high likelihood of occurrence, or known presence. **Table 5.2** provides a summary of these three species and the extent of direct impact on suitable habitat for each species.

Table 5.2 Impacts on Threatened Flora and their Habitat

Threatened Entity	BC Act Status	EPBC Act Status	Potential Occurrence	Impact by Proposed Activity	Maximum area of Impact (ha)
Eucalyptus camaldulensis (river red gum) population in the Hunter Catchment	Endangered		Recorded	Yes	1.30
Cymbidium canaliculatum (tiger orchid) population in the Hunter Catchment	Endangered		Moderate	Yes (Assumed habitat	13.69
Prasophyllum sp. Wybong/ *Prasophyllum petilum*	Endangered	Critically Endangered	Moderate	Yes (Assumed habitat)	14.08

5.1.3 Removal of Threatened Fauna Habitat

Of the threatened fauna identified in **Section 4.4.1** and assessed for their likelihood of occurrence **in Appendix A**, 32 are considered to have potential habitat within the Proposed Activity Area and have a moderate or high likelihood of occurrence, or known presence. **Table 5.3** provides a summary of these 32 species and the extent of direct impact on suitable habitat for each species.

Table 5.3 Impacts on Threatened Fauna and their Habitat

Threatened Entity	BC Act Status	EPBC Act Status	Potential Occurrence	Impact by Proposed Activity	Impact (ha)
Regent honeyeater (*Anthochaera phrygia*)	Critically Endangered	Critically Endangered	Moderate	Yes (Assumed habitat)	16.47
Southern whiteface (*Aphelocephala leucopsis*)	Vulnerable	Vulnerable	Moderate	Yes (Assumed habitat)	18.62
Dusky woodswallow (*Artamus cyanopterus cyanopterus*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	18.62
South-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*)	Vulnerable	Vulnerable	Moderate	Yes (Assumed habitat)	1.3
Brown treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*)	Vulnerable	Vulnerable	Moderate	Yes (Assumed habitat)	8.43
Little lorikeet (*Glossopsitta pusilla*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	16.47
Swift parrot (*Lathamus discolor*)	Endangered	Critically Endangered	Moderate	Yes (Assumed habitat)	16.47

Threatened Entity	BC Act Status	EPBC Act Status	Potential Occurrence	Impact by Proposed Activity	Impact (ha)
Scarlet robin (*Petroica boodang*	Endangered	-	Moderate	Yes (Assumed habitat)	15.83
Grey-crowned babbler (eastern subspecies)(*Pomatostomus temporalis temporalis*)	Vulnerable	-	Recorded	Yes	15.83
Speckled warbler (*Pyrrholaemus sagittatus*)	Vulnerable	-	Recorded	Yes	18.62
Diamond firetail (*Stagonopleura guttata*)	Vulnerable	Vulnerable	Moderate	Yes (Assumed habitat)	18.62
Varied sittella (*Daphoensitta chrysoptera*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	18.62
Masked owl (*Tyto novaehollandiae*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	18.62
Black falcon (*Falco subniger*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	10.72
Little eagle (*Hieraaetus morphnoides*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	18.62
Spotted harrier (*Circus assimilis*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	49.62
Brush-tailed phascogale (*Phascogale tapoatafa*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	12.39
Squirrel glider (*Petaurus norfolcensis*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	8.03
Koala (*Phascolarctos cinereus*)	Endangered	Endangered	Moderate	Yes (Assumed habitat)	6.41
Spotted-tailed quoll (*Dasyurus maculatus*)	Vulnerable	Endangered	Moderate	Yes (Assumed habitat)	18.62
Brush-tailed rock-wallaby (*Petrogale penicillata*)	Vulnerable	Vulnerable	Moderate	Yes (Assumed habitat)	14.08
Corben's long-eared bat (*Nyctophilus corbeni*)	Vulnerable	Vulnerable	Moderate	Yes (Assumed habitat)	5.11
Eastern cave bat (*Vespadelus troughtoni*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	14.08
Large-eared pied bat (*Chalinolobus dwyeri*)	Endangered	Endangered	Moderate	Yes (Assumed habitat)	14.08
Large bent-winged bat (*Miniopterus orianae oceanensis*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	8.43
Eastern false pipistrelle (*Falsistrellus tasmaniensis*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	3.32
Southern myotis (*Myotis macropus*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	15.83
Yellow-bellied sheathtail bat (*Saccolaimus flaviventris)*	Vulnerable	-	Moderate	Yes (Assumed habitat)	8.43

Threatened Entity	BC Act Status	EPBC Act Status	Potential Occurrence	Impact by Proposed Activity	Impact (ha)
Greater broad-nosed bat (*Scoteanax rueppellii*)	Vulnerable	-	Moderate	Yes (Assumed habitat)	3.32
Grey-headed flying-fox (*Pteropus poliocephalus*)	Vulnerable	Vulnerable	Moderate	Yes (Assumed habitat)	16.47
Pink-tailed legless lizard (*Aprasia parapulchella*)	Vulnerable	Vulnerable	Moderate	Yes (Assumed habitat)	10.77
Hunter Valley delma (*Delma vescolineata*)	Endangered	Endangered	Moderate	Yes (Assumed habitat)	41.18

5.2 Indirect Impacts

It is anticipated that the Proposed Activity will have minimal indirect impacts during the construction and operation of the overhead line. **Table 5.4** provides a list of potential indirect impacts associated with the Proposed Activity and the likelihood of the indirect impact occurring.

Table 5.4 Indirect Impacts

Potential Indirect Impact	Species Class	Likelihood	Justification
Loss of individuals through starvation	All species	Low	There is a low likelihood that the proposed works would remove foraging habitat critical to the survival of these species.
Loss of individuals through exposure	All species	Low	There is a low likelihood that the proposed works would remove habitat critical to the survival of these species. The impact area of the proposed works contains habitat which is continuous over a large scale. Habitat values contained within the impact area would be found within the broader landscape.
Loss of individuals through predation by domestic and/or feral animals	All species	Low	There is a low likelihood that the proposed works would increase predation by domestic/feral animals. The proposed works would not increase fragmentation/edge effect within the broader landscape.
Loss of breeding opportunities	All species	Low	There is a low likelihood that the proposed works would minimise breeding opportunities for species. No breeding habitat has been identified within the impact area. Any potential breeding habitat present within the Proposed Activity Area is likely to also be found within the continuous habitat adjacent to the Proposed Activity Area.
Loss of shade/shelter	All species	Low	There is a low likelihood that the proposed works would eliminate the shade/shelter within the landscape. Whilst shade/shelter is present within the Proposed Activity Area and would be removed by the proposed work; these habitat features are present within the broader landscape.

Potential Indirect Impact	Species Class	Likelihood	Justification
Deleterious hydrological changes	All species	Low	There is a low likelihood that the proposed works would produce deleterious hydrological changes. None of the proposed works will impact upon the creek lines within the Proposed Activity Area.
Increased soil salinity	All species	Low	There is a low likelihood that the proposed works would increase soil salinity. None of the proposed works would impact soil salinity within the Proposed Activity Area.
Erosion	All species	Low	The proposed works would include the removal of vegetation and potential excavations. No erosion controls have been proposed. There is a low likelihood that the proposed works would create erosion which would impact upon wildlife.
Inhibition of nitrogen fixation	All species	Low	Due to the nature of the proposed works there is a low likelihood of minimising the nitrogen fixation within the Proposed Activity Area and broader landscape.
Weed invasion	All species	Moderate	There is a moderate likelihood that the proposed works would increase weed invasion within the Proposed Activity Area and broader landscape. Weed invasion could be promoted through seed and plant material being transported to site by construction equipment and through the green waste being brought to the site. Although any priority weeds would not be mulched with the native vegetation.
Fertiliser drift	All species	Low	There is a low likelihood that the proposed works would promote fertiliser drift. The proposed works do not include any actions involving fertiliser.
Increased human activity within/adjacent to the sensitive habitat areas	All species	Low	There is a low likelihood that the Proposed Activity would impact species through increased human activity. There is evidence of fauna usage within the landscape surrounding the Proposed Activity Area. This confirms that the level of human activity planed for the Proposed Activity Area upon completion is unlikely to have an exclusionary effect.

5.3 Key Threatening Processes

There are 36 Key Threatening Processes (KTPs), that are listed on the BC Act and/or EPBC Acts as at December 2025 and are applicable to terrestrial environments (**Table 5.5**).

Of the 36 KTPs a total of 10 relate to invasive ecological processes that have the potential to move with works plant and machinery. The proposed Activity would avoid all possible invasive processes by

the quarantining and cleaning of plant and machinery prior to entry to the Proposed Activity Area. Once present within the Proposed Activity Area, machinery would stay on-site until the proposed works are completed.

A further three KTPs would be avoided by the design features of the Project; bushrock removal, loss of hollow bearing trees and the removal of dead wood and trees. Bushrock and hollow bearing trees would be avoided in their entirety where practical, while dead wood and trees would be temporarily moved and then replaced in a nearby suitable location or utilised within the track design upon completion of works. Therefore, there is no net negative impact on these KTPs. The operation of machinery would lead to a negligible increase of greenhouse gas emissions and, therefore, no effect on threatened biodiversity.

There were two KTPs that would occur as a result of the Project; one is the clearing of 18.62 ha of native vegetation and removal of dead wood and dead trees, which would be limited to the Proposed Activity Area.

Table 5.5 Key Threatening Processes

Key Threatening Process	BC Act	EPBC Act Equivalent	Exacerbated Due to Project
Aggressive exclusion of birds by noisy miners (*Manorina melanocephala*)	√	√	No
Alteration of habitat following subsidence due to longwall mining	√	x	NA
Alteration to the natural flow regimes of rivers, streams, floodplains & wetlands	√	x	No, there are waterways that would require erosion control but would not be altered as part of this Project
Bushrock removal	√	x	Bush rock identified in survey. It is recommended that it be left in-situ where practical
Clearing of native vegetation	√	√	Yes – clearing of 10.12 ha
Competition and grazing by the feral European rabbit	√	√	No
Competition and habitat degradation by feral goats	√	√	No
Competition from feral honey bees	√	X	No
Forest Eucalypt dieback associated with over-abundant psyllids and bell miners	√	x	No
Herbivory and environmental degradation caused by feral deer	√	x	No
High frequency fire	√	x	No
Human-caused climate change	√	√	No
Importation of red imported fire ants into NSW	√	√	No
Infection by *Psittacine circoviral* (beak & feather) disease affecting endangered psittacine species	√	√	No
Infection of frogs by amphibian chytrid fungus causing the disease chytridiomycosis	√	√	No

Key Threatening Process	BC Act	EPBC Act Equivalent	Exacerbated Due to Project
Infection of native plants by *Phytophthora cinnamomi*	√	√	No
Introduction and Establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae	√	x	No
Introduction of the large earth bumblebee (*Bombus terrestris*)	√	x	No
Invasion and establishment of exotic vines and scramblers	√	x	No (avoided through mitigation)
Invasion and establishment of Scotch broom	√	x	No, none identified in Proposed Activity Area
Invasion and establishment of the Cane Toad	√	√	No, none identified in Proposed Activity Area
Invasion of native plant communities by bitou bush & boneseed	√	x	No, none identified in Proposed Activity Area
Invasion of native plant communities by exotic perennial grasses	√	(only N. Aust)	No, none identified in Proposed Activity Area
Invasion of the yellow crazy ant (*Anoplolepis gracilipes*)	√	(only Christmas Island)	N/A
Invasion, establishment and spread of Lantana (*Lantana camara)*	√	x	No, none identified in Proposed Activity Area
Invasion by escaped garden plants, including aquatics	√	√	No, none identified in Proposed Activity Area
Invasion of native plant communities by African Olive (*Olea europaea* L. subsp. *cuspidata*)	√	x	No, none identified in Proposed Activity Area
Loss of hollow-bearing trees	√	x	Five identified in Proposed Activity Area, where practical, avoid the removal of these HBTs during the detailed design phase
Loss and/or degradation of sites used for hill-topping by butterflies	√	x	No
Predation and hybridisation of feral dogs	√	√	No
Predation by the European Red Fox	√	√	No
Predation by feral cats	√	√	No
Predation by the Plague Minnow (*Gambusia holbrooki*)	√	x	No
Predation, habitat degradation, competition and disease transmission by Feral Pigs (*Sus scrofa*)	√	√	No
Removal of dead wood and dead trees	√	x	Yes – dead wood and trees would be removed as part of the vegetation clearing

6.0 Assessment of Significance

Appendix A contains an assessment of the likelihood of occurrence for threatened species and TECs listed under the BC Act and/or the EPBC Act that have been recorded or predicted to occur within a 10 km database search from the Proposed Activity Area.

The potential for each entity to occur within the Proposed Activity Area, specifically in the habitats to be impacted by the Proposed Activity, is provided in **Appendix A**. Exclusively marine species such as marine and pelagic and estuarine species have been excluded as these have no potential suitable habitat in the Proposed Activity Area. The likelihood of occurrence provided is based on desktop review and the results of the field survey undertaken across the Proposed Activity Area.

Table 6.1 details the species considered to have a moderate or greater likelihood of utilising the terrestrial habitats to be impacted by the Proposed Activity. The potential impacts to threatened species listed under the BC Act and EPBC Act have been further assessed in **Appendix B** and **Appendix C** respectively and discussed in the following sections.

Table 6.1 Threatened Entities Requiring Assessments of Significance

Threatened Entity	BC Act Status	EPBC Act Status	Potential Occurrence	Impact (ha)
Eucalyptus camaldulensis (river red gum) population in the Hunter Catchment	Endangered	N/A	Recorded	1.3
Cymbidium canaliculatum (tiger orchid) population in the Hunter Catchment	Endangered	N/A	Moderate	13.69
Prasophyllum sp. Wybong/ *Prasophyllum petilum*	Endangered	Critically Endangered	Moderate	14.08
Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions	Endangered Ecological Community	-	Recorded	1.62
Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions	Endangered Ecological Community	-	Recorded	1.3
Central Hunter Valley eucalypt forest and woodland	-	Critically Endangered Ecological Community	Recorded	1.62
Regent honeyeater (*Anthochaera phrygia*)	Critically Endangered	Critically Endangered	Moderate	16.47
Southern whiteface (*Aphelocephala leucopsis*)	Vulnerable	Vulnerable	Moderate	18.62
Dusky woodswallow (*Artamus cyanopterus cyanopterus*)	Vulnerable	-	Moderate	18.62
South-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*)	Vulnerable	Vulnerable	Moderate	1.3

Threatened Entity	BC Act Status	EPBC Act Status	Potential Occurrence	Impact (ha)
Brown treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*)	Vulnerable	Vulnerable	Moderate	8.43
Little lorikeet (*Glossopsitta pusilla*)	Vulnerable	-	Moderate	16.47
Swift parrot (*Lathamus discolor*)	Endangered	Critically Endangered	Moderate	16.47
Scarlet robin (*Petroica boodang*	Endangered	-	Moderate	15.83
Grey-crowned babbler (eastern subspecies) (*Pomatostomus temporalis temporalis*)	Vulnerable	-	Recorded	15.83
Speckled warbler (*Pyrrholaemus sagittatus*)	Vulnerable	-	Recorded	18.62
Diamond firetail (*Stagonopleura guttata*)	Vulnerable	Vulnerable	Moderate	18.62
Varied sittella (*Daphoensitta chrysoptera*)	Vulnerable	-	Moderate	18.62
Masked owl (*Tyto novaehollandiae*)	Vulnerable	-	Moderate	18.62
Black falcon (*Falco subniger*)	Vulnerable	-	Moderate	10.72
Little eagle (*Hieraaetus morphnoides*)	Vulnerable	-	Moderate	18.62
Spotted harrier (*Circus assimilis*)	Vulnerable	-	Moderate	49.62
Brush-tailed phascogale (*Phascogale tapoatafa*)	Vulnerable	-	Moderate	12.39
Squirrel glider (*Petaurus norfolcensis*)	Vulnerable	-	Moderate	8.03
Koala (*Phascolarctos cinereus*)	Endangered	Endangered	Moderate	6.41
Spotted-tailed quoll (*Dasyurus maculatus*)	Vulnerable	Endangered	Moderate	18.62
Brush-tailed rock-wallaby (*Petrogale penicillata*)	Vulnerable	Vulnerable	Moderate	14.08
Corben's long-eared bat (*Nyctophilus corbeni*)	Vulnerable	Vulnerable	Moderate	5.11
Eastern cave bat (*Vespadelus troughtoni*)	Vulnerable	-	Moderate	14.08
Large-eared pied bat (*Chalinolobus dwyeri*)	Endangered	Endangered	Moderate	14.08
Large bent-winged bat (*Miniopterus orianae oceanensis*)	Vulnerable	-	Moderate	8.43
Eastern false pipistrelle (*Falsistrellus tasmaniensis*)	Vulnerable	-	Moderate	3.32

Threatened Entity	BC Act Status	EPBC Act Status	Potential Occurrence	Impact (ha)
Southern myotis (*Myotis macropus*)	Vulnerable	-	Moderate	15.83
Yellow- bellied sheathtail bat	Vulnerable	-	Moderate	8.43
Greater broad-nosed bat (*Scoteanax rueppellii*)	Vulnerable	-	Moderate	3.32
Grey-headed flying-fox (*Pteropus poliocephalus*)	Vulnerable	Vulnerable	Moderate	16.47
Pink-tailed legless lizard (*Aprasia parapulchella*)	Vulnerable	Vulnerable	Moderate	10.77
Hunter Valley delma (*Delma vescolineata*)	Endangered	Endangered	Moderate	41.18

6.1 Biodiversity Conservation Act 2016 – Test of Significance

Under the BC Act, an assessment of whether the Proposed Activity will have a significant impact on threatened species, communities or their habitats must consider the matters as set out in Section 7.3 of the BC Act, known as the 'test of significance.'

A test of significance has been completed for the threatened species listed under the BC Act (refer to Table 6.1) that are considered to have a moderate or greater likelihood of occurrence within the Proposed Activity Area. The test of significance is provided in Appendix B and has concluded that the Proposed Activity is not likely to significantly impact any TECs, threatened species or their habitats listed under the BC Act.

6.2 Environment Protection and Biodiversity Conservation Act 1999 – Assessment of Significance

The significance of the impact of the proposed action on MNES can be determined through self-assessment using Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (DoE, 2013). A 'Referral' under the EPBC Act is required for proposed actions that may affect nationally listed threatened species, threatened ecological communities and migratory species.

Assessments of significance have been completed for the threatened entities listed under the EPBC Act (refer to **Table 6.1**) that are considered to have a moderate or greater likelihood of occurrence within the Proposed Activity Area. The assessments have been provided in Appendix C.

The Proposed Activity is not considered likely to significantly impact any TECs, threatened species or their habitats listed under the EPBC Act.

7.0 Mitigation Measures

Mitigation measures and safeguards to avoid and minimise the impacts of the Proposed Activity on biodiversity values identified in the Proposed Activity Area ae detailed in **Table 7.1**.

Table 7.1 Mitigation Measures

Impact	Mitigation	Timing
Removal of native vegetation	Minimised through detailed design, specifically removing or minimising the need for any access tracks throughout the Proposed Activity Area.	Detailed design
	Minimising vegetation clearing by utilising pre-existing access tracks and exotic grasslands where practicable.	Detailed design
	Ensure all River red gum (*Eucalyptus camaldulensis*) are avoided during the detailed design process for the works.	Detailed design
	Minimising vegetation clearing by utilising smaller plant and equipment.	During construction
Removal of hollow bearing trees	The removal of hollow bearing trees (HBTs) should be avoided with minor design changes. Where possible the tree HBTs currently located on the edge of the Proposed Activity Area should be avoided through refinement of design. The remaining two trees where possible should also be avoided. However, if it is required it would be performed in the presence of a qualified ecologist to assist in detection and translocation of potentially displaced fauna.	Detailed design and during construction
Spread of pathogens and disease	Hygiene controls for all plant and people working in the Proposed Activity Area.	During construction
	Machinery will be washed following best practice hygiene protocols prior to being brought to site to prevent the spread of weeds, seeds, pathogens and fungi.	Prior to construction
Spread of weeds and exotic species	Hygiene controls for all plant and people working in the Proposed Activity Area.	During construction
	Establishment of clearing limits and exclusion zones.	During construction
	All weed material removed will be disposed of in a suitable waste facility and not mulched on site. This is to avoid the reintroduction and further spread of weeds in the area.	During construction
	Machinery will be washed following best practice hygiene protocols prior to being brought to site to prevent the spread of weeds, seeds, pathogens and fungi.	Prior to construction
Edge effects	Establishment of clearing limits and exclusion zones.	During construction
Erosion	Establishment of clearing limits and exclusion zones.	During construction
	Suitable erosion controls would be implemented across the site to avoid any additional runoff to leech into the existing drainage lines.	Post construction

8.0 Conclusion

This BAR has been prepared to support the REF for a proposed 66 kV overhead line associated with the UHEP.

The BAR assesses the ecological significance of threatened flora and fauna, and vegetation communities that occur, or have the potential to occur, within the area to be impacted by the Proposed Activity, in accordance with the requirements of the EP&A, BC Act and EPBC Act.

During high-level field surveys the following threatened entities were confirmed within the Proposed Activity Area:

NSW Biodiversity Conservation Act

- 1.62 ha of Central Hunter Grey Box – Ironbark Woodland in the NSW North Coast and Sydney Basin Bioregions Endangered
- 1.30 ha of Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions Endangered
- One (1) individual of *Eucalyptus camaldulensis* (river red gum) that are a part of the Endangered population in the Hunter Catchment.
- Thirteen (13) grey-crowned babbler (eastern subspecies) (*Pomatostomus temporalis temporalis*) individuals – Vulnerable
- Four (4) Speckled warbler (*Pyrrholaemus sagittatus*) individuals – Vulnerable

Commonwealth Environment Protection and Biodiversity Conservation Act

- 1.62 ha of Central Hunter Valley eucalypt forest and woodland -Critically Endangered.

The Proposed Activity will result in the direct impact on 18.62 ha of Native vegetation.

Table 8.1 provides a summary of the direct impacts to native vegetation.

Table 8.1 Direct Impacts to Native Vegetation

PCT #	PCT Name	Threatened Ecological Community BC Act	Threatened Ecological Community EPBC Act Listing	Proposed Activity Area Extent Impacts (ha)
393	White Box shrubby woodland of the western Liverpool Range	NA	NA	5.11
3431	Central Hunter Ironbark Grassy Woodland – woodland variant	Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions - Endangered Ecological Community (EEC)	Central Hunter Valley eucalypt forest and woodland Critically Endangered Ecological Community (CEEC)	1.62
	Central Hunter Ironbark Grassy Woodland – grassland variant	NA	NA	1.7
3767	Upper Hunter Escarpment Colluvial Ironbark Forest	NA	NA	5.66
4089	Namoi-Upper Hunter River Red Gum Forest – Inland Riverine Forests – woodland variant	Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions (EEC)	NA	1.3
	Namoi-Upper Hunter River Red Gum Forest – Inland Riverine Forests – grassland variant	NA	NA	0.45
NA	Planted Native Vegetation	NA	NA	2.78
Total				18.62

In addition to the confirmed threatened entities, the native vegetation identified within the Proposed Activity Area provides habitat for 32 threatened species that have at least a moderate likelihood of occurring within the Proposed Activity Area. None of these species (listed below) were recorded within the Proposed Activity Area during field surveys.

- Two (2) threatened flora species *Cymbidium canaliculatum* (tiger orchid), and *Prasophyllum* sp. Wybong (a leek-orchid).
- 14 threatened avifauna species regent honeyeater (*Anthochaera phrygia*), swift parrot (*Lathamus discolor*), southern whiteface (*Aphelocephala leucopsis*), dusky woodswallow (*Artamus cyanopterus cyanopterus*), south-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*), brown treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*), little lorikeet (*Glossopsitta pusilla*), scarlet robin (*Petroica boodang*), diamond firetail (*Stagonopleura guttata*), varied Sittella (*Daphoensitta chrysoptera*), masked owl (*Tyto novaehollandiae*), little eagle (*Hieraaetus morphnoides*), black falcon (*Falco subniger*) and spotted harrier (*Circus assimilis*).
- 14 threatened Mammals: brush-tailed phascogale (*Phascogale tapoatafa*), squirrel glider (*Petaurus norfolcensis*), koala (*Phascolarctos cinereus*), spotted-tailed quoll (*Dasyurus maculatus*), brush-tailed rock-wallaby (*Petrogale penicillata*), eastern false pipistrelle (*Falsistrellus tasmaniensis*), Corben's long-eared bat (*Nyctophilus corbeni*), eastern cave bat (*Vespadelus troughtoni*), large-eared pied bat (*Chalinolobus dwyeri*), large bent-winged bat (*Miniopterus orianae oceanensis*), southern myotis (*Myotis macropus*), yellow-bellied sheathtail bat (*Saccolaimus flaviventris*), greater broad-nosed bat (*Scoteanax rueppellii*), grey-headed flying-fox (*Pteropus poliocephalus*),
- Two (2) threatened reptiles pink-tailed legless lizard (*Aprasia parapulchella*), and Hunter Valley delma (*Delma vescolineata*).

Assessments of the significance of impacts from the Proposed Activity on the above listed threatened entities were carried out for (Test of Significance under the BC Act and/or Assessment of Significance under the EPBC Act).

Due to the narrow nature of the Proposed Activity and relatively low-quality native vegetation, the Proposed Activity would not increase fragmentation and fauna are likely to continue to utilise the remaining vegetation in the Proposed Activity Area and wider locality.

The Proposed Activity is unlikely to have a significant impact on threatened communities and/or species and their habitats listed under the BC Act. A Species Impact Statement (NSW) is not considered necessary for any threatened biodiversity as a result of impacts relating to the Proposed Activity.

The significance of the impact of the proposed action on MNES can be determined through self-assessment using Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (DoE, 2013). A 'Referral' under the EPBC Act is required for proposed actions that may affect nationally listed threatened species, threatened ecological communities and migratory species. Assessments of significance have been completed for the threatened entities listed under the EPBC Act (refer to **Table 6.1**) that are considered to have a moderate or greater likelihood of occurrence within the Proposed Activity Area. The assessments have been provided in **Appendix C**. The Proposed Activity is not considered likely to significantly impact any TECs, threatened species or their habitats listed under the EPBC Act.

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Appendix A

Likelihood of Occurrence Assessment

umwelt

Appendix Table A.1 Likelihood of Occurrence

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Flora								
Acacia pendula	*Acacia pendula* population in the Hunter catchment	Endangered population	Not listed	1	BioNet	Within the Hunter catchment the species typically occurs on heavy soils, sometimes on the margins of small floodplains, but also in more undulating locations. This population is known to occur naturally as far east as Warkworth and extends northwest to Muswellbrook and to the west of Muswellbrook at Wybong. There are known patches adjacent the train corridor between Muswellbrook and Scone (OEH 2025).	Low – This species was not recorded during the field surveys undertaken in 2024.	No.
Androcalva procumbens	-	Not listed	Vulnerable	N/A	PMST	This species is endemic to NSW and is known from the Dubbo–Medooran Gilgandra region, the Cobar region, and the upper Hunter Valley. The species occurs in sandy soils, often in disturbed habitats such as road verges, quarry boundaries, gravel stockpiles, and power line easements (Cth DCCEEW 2025d).	Low – no associated vegetation types which provide habitat for the species were recorded (lack of sandy soils).	No
Bertya mollissima		Endangered	Endangered	1	BioNet	*Bertya mollissima* is endemic to north-eastern New South Wales (NSW) and has been known to occur historically from Mount Kaputar, the Warrumbungle and Liverpool Ranges and the Scone and Singleton districts.	Low – No associated vegetation types which provide habitat for the species were recorded. There is a single record	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						This species 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 (OEH 2025).	that is located in the centre of Scone which was collected in 1939.	
Cymbidium canaliculatum	*Cymbidium canaliculatum* population in the Hunter Catchment	Endangered population	Not listed	10	BioNet	This endangered population typically grows in the hollows, fissures, trunks and forks of trees in white box (*Eucalyptus albens*) dominated woodlands, where its host trees typically occur on Permian sediments of the Hunter Valley floor. It usually occurs singly or as a single clump, which can form large colonies on trees, between two and six metres from the ground.	Low – This species was not recorded during the field surveys undertaken in 2024.	No.
Cynanchum elegans	White flowered wax plant	Endangered	Endangered	N/A	PMST	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 (OEH 2025).	Low – No suitable habitat present within the Proposed Activity Area, no nearby records.	No
Dichanthium setosum	bluegrass	Vulnerable	Vulnerable	N/A	PMST	Occurs on the New England Tablelands, North-west Slopes and Plains and the Central-west Slopes. Associated with heavy basaltic black	Low – No associated soil types within Proposed	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						soils and red-brown loams with clay subsoil. Often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. Appears to have wide environmental tolerances (OEH 2025).	Activity Area, no nearby records.	
Eucalyptus camaldulensis	*Eucalyptus camaldulensis* population in the Hunter catchment	Endangered population	Not listed	61	BioNet	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* (OEH 2025).	**Recorded** – This species occurs in high numbers within 10km of the Proposed Activity Area and was observed during field surveys. Suitable habitat found in the form of PCT 4089 along floodplains.	Yes
Eucalyptus glaucina	Slaty Red Gum	Vulnerable	Vulnerable	N/A	PMST	Found in separate districts along the eastern seaboard of NSW, from near Casino, to Taree, south to Broke, and recently discovered on the eastern side of the Blue Mountains National Park near Warragamba Dam. Grows in grassy woodland and dry eucalypt forest (OEH 2025).	Low – This species has not been recorded within 10 km of the Proposed Activity Area.	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Eucalyptus nicholii	Narrow-leaved Peppermint	Vulnerable	Vulnerable	N/A	PMST	This species is sparsely distributed but widespread on the New England Tablelands from Nundle to north of Tenterfield, being most common in central portions of its range. Found largely on private property and roadsides, and occasionally in conservation reserves. Planted as urban trees, windbreaks and corridors (OEH 2025).	Low – No known records in the locality and is unlikely to occur naturally in the area (often planted as street tree)	No
Euphrasia arguta		Critically Endangered	Critically Endangered	N/A	PMST	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 (OEH 2025).	Low – The Proposed Activity Area is located outside the known species distribution area.	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Lepidium aschersonii	Spiny Peppercress	Vulnerable	Vulnerable	N/A	PMST	Not widespread, occurring in the marginal central-western slopes and north-western plains regions of NSW (and potentially the south western plains). In the north of the State recent surveys have recorded a number of new sites including Brigalow Nature Reserve, Brigalow State Conservation Area, Leard State Conservation Area and Bobbiwaa State Conservation Area. Also known from the West Wyalong in the south of the State. Records from Barmedman and Temora areas are likely to be no longer present. Approximately 50% of the total Lepidium aschersonii recorded for Australia occurs in NSW. Found on ridges of gilgai clays dominated by Brigalow (*Acacia harpophylla*), Belah (*Casuarina cristata*), Buloke (*Allocasuarina luehmanii*) and Grey Box (*Eucalyptus microcarpa*). In the south has been recorded growing in Bull Mallee (*Eucalyptus behriana*). Often the understorey is dominated by introduced plants. The species grows as a a component of the ground flora, in grey loamy clays. Vegetation structure varies from open to dense, with sparse grassy understorey and occasional heavy litter (OEH 2025).	Low – No associated Soil or vegetation type present within the Proposed Activity Area. There are no nearby records within 10 km of the Proposed Activity Area.	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Ozothamnus tesselatus		Vulnerable	Vulnerable	N/A	PMST	This species distribution is from Rylstone north to the upper Hunter Valley. Grows in eucalypt woodland and often occurs in White Box Woodlands and Central Hunter Grey Box Ironbark Woodland in the Hunter Valley near Singleton (OEH 2025).	Low – the Proposed Activity Area is located outside the known geographic range of this species.	No
Picris evae	Hawkweed	Vulnerable	Vulnerable	N/A	PMST	Known in NSW north from the Inverell area, in the north-western slopes and plains regions. It has been collected from Elsmore and Myall Creek (both near Inverell) as well as in Inverell, Oxley Park (Tamworth) and also from Dangar Falls in the Oxley Wild Rivers National Park in the northern tablelands of NSW. The species also occurs in the Darling Downs and Moreton regions of south-eastern Queensland. All recent collections appear to come from modified habitats such as weedy roadside vegetation and paddocks. Its main habitat is open Eucalypt forest including a canopy of *Eucalyptus melliodora, E. crebra, E. populnea, E. albens, Angophora subvelutina, Allocasuarina torulosa, and/or Casuarina cunninghamiana* with a *Dichanthium* grassy understory (OEH 2025).	Low – There are tree species present often associated with this species located in the Proposed Activity Area (*Eucalyptus melliodora, E. crebra, E. albens, Casuarina cunninghamiana*), although there is a distinct lack of records within 10 km and the species is often found further north and west of the locality.	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Pomaderris brunnea	Rufous Pomaderris	Endangered	Vulnerable	N/A	PMST	Brown Pomaderris is found in a very limited area around the Colo, Nepean and Hawkesbury Rivers, including the Bargo area and near Camden. It also occurs near Walcha on the New England tablelands and in far eastern Gippsland in Victoria. Brown Pomaderris grows in moist woodland or forest on clay and alluvial soils of flood plains and creek lines (OEH 2025).	Low - The Proposed Activity Area is outside the restricted geographic distribution of this species.	No
Prasophyllum petilum (BC Act) *Prasophyllum sp. Wybong (C.Phelps ORG 5269)*	a leek-orchid	Endangered	Critically Endangered	N/A	PMST	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. Known to occur in open eucalypt woodland and grassland (OEH 2025).	**Moderate** – Potential habitat on site (open eucalypt woodland and grassland), though populations known to grow in restricted areas. Cryptic flowering species.	Yes
Prostanthera cineolifera	Singleton mintbush	Vulnerable	Vulnerable	N/A	PMST	Restricted to only a few localities near Scone, Cessnock and St Albans. Grows in open woodlands on exposed sandstone ridges (OEH 2025).	Low – Potential habitat- Grows in open woodlands on exposed sandstone ridges. Historic record (1991) within 5 km.	

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Prostanthera cryptandroides subsp. cryptandroides	Wollemi Mint-bush	Vulnerable	Vulnerable	N/A	PMST	Range extends from Lithgow to Queensland; however occurrence is disjunct within this range. Habitat is specific at each location, for example: Open forest dominated by *Eucalyptus fibrosa* at Glen Davis; variety of communities along rocky ridgelines on Narrabeen group Sandstones at Denman-Gungal and Widden-Baerami Valley such as rocky heath, Acacia woodland, exposed woodland, open heathland of *Calytrix tetragona, leptospermum parviflorum* and *Isopogon dawsonii* and open scrubland of *Eucalyptus dwyeri, Baeckea densifolia, Dillwynia floribunda, Aotus ericoides* and *Hemigenia cuneifolia* (OEH 2025) .	Low – No preferred habitat was recorded within the Proposed Activity Area coupled with no records within a 10 km search of the locality.	No
Swainsona murrayana	Slender Darling-pea	Vulnerable	Vulnerable	N/A	PMST	The species has been collected from clay-based soils, ranging from grey, red and brown cracking clays to red-brown earths and loams. Grows in a variety of vegetation types including bladder saltbush, black box and grassland communities on level plains, floodplains and depressions and is often found with Maireana species. Plants have been found in remnant native grasslands or grassy woodlands that have been intermittently grazed or cultivated (OEH 2025).	Low – No associated Soil or vegetation present within the Proposed Activity Area. There are no nearby records within 10km of the Proposed Activity Area.	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Swainsona sericea	Silky swainson-pea	Vulnerable	Not listed	1	BioNet	Silky Swainson-pea has been recorded from the Northern Tablelands to the Southern Tablelands and further inland on the slopes and plains. There is one isolated record from the far north-west of NSW. Its stronghold is on the Monaro. Also found in South Australia, Victoria and Queensland. Found in Natural Temperate Grassland and Snow Gum Eucalyptus pauciflora Woodland on the Monaro. Found in Box-Gum Woodland in the Southern Tablelands and South West Slopes (OEH 2025).	Low – There is one record of this species within 10km of the Proposed Activity Area that is a historic record from 1958. A wider search (30 km) did not identify additional records.	No
Thesium australe	Austral Toadflax	Vulnerable	Vulnerable	N/A	PMST	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 (OEH 2025).	Low – No associated vegetation present within10km of the Proposed Activity Area. There are no nearby records within 10 km of the Proposed Activity Area.	No
Amphibians								

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Heleioporus australiacus	Giant Burrowing Frog	Vulnerable	Vulnerable	N/A	PMST	Found in heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based. Spends more than 95% of its time in non-breeding habitat in areas up to 300 m from breeding sites. While in non-breeding habitat it burrows below the soil surface or in the leaf litter. Breeding habitat of this species is generally soaks or pools within first or second order streams. Species is dependent on hanging swamps on the top of sandstone plateaus and deeply dissected gullies that occur as erosion features in the Sydney Basin (OEH 2025).	Low – No suitable habitat within the Proposed Activity Area	No
Litoria booroolongensis	Booroolong Frog	Endangered	Endangered	N/A	PMST	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. Adults occur on or near cobble banks and other rock structures within stream margins (OEH 2025).	Low - No suitable habitat within the Proposed Activity Area	No
Birds								
Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Critically Endangered	N/A	PMST	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	**Moderate** – This species has not been recorded within 10 km of the Proposed Activity Area but is	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						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 (OEH 2025).	considered to have a moderate likelihood of occurrence based on suitable habitat in the locality (Box-Ironbark Woodland). Potential foraging and breeding habitat for this species in the Proposed Activity Area includes woodland and forest areas which make up approximately 9.05 ha	
Aphelocephala leucopsis	Southern Whiteface	Vulnerable	Vulnerable	N/A	PMST	The Southern Whiteface occurs across most of mainland Australia south of the tropics, from the northeastern edge of the Western Australian wheatbelt, east to the Great Dividing Range. Southern Whitefaces live in a wide range of open woodlands and shrublands where there is an understorey of grasses or shrubs, or both. These areas are usually in habitats dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains (OEH 2025).	**Moderate** – This species has not been recorded within 10 km of the Proposed Activity Area but is considered to have a moderate likelihood of occurrence based on suitable habitat in the locality (Woodlands with understorey of grasses and/or shrubs). Potential foraging and	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
							breeding habitat for this species in the Proposed Activity Area includes areas which make up approximately 10.12 ha	
Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not listed	7	BioNet	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. They 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 ground-cover of grasses or sedges and fallen woody debris (OEH 2025).	**Moderate** – There are seven records of this species within 10 km of the Proposed Activity Area. Suitable habitat for this species is found along the escarpment to the east of Moobi. which may provide potential foraging and breeding habitat for this species in the Proposed Activity Area, as well as grassy eucalypt woodlands, box-gum woodlands, riparian areas, and lightly wooded farmland	Yes
Botaurus poiciloptilus	Australasian Bittern	Endangered	Endangered	N/A	PMST	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.	Low – The Proposed Activity Area does not contain any	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (Typha spp.) and spike rushes (Eleocharis spp.). 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 (OEH 2025).	suitable habitat for this species	
Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Endangered	N/A	PMST	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 is rare at the extremities of its range, with isolated records known from as far north as Coffs Harbour and as far west as Mudgee. In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In autumn and winter, the species often moves to lower altitudes in drier more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas (OEH 2025).	Low – There are no records of this species within 10 km of the Proposed Activity Area and only marginal foraging habitat	No
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	Vulnerable	Vulnerable	1	BioNet	The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in	**Moderate** – There is one record of this species within 10 km of the	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						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 (OEH 2025).	Proposed Activity Area. Suitable forage species were present within the Proposed Activity Area (She-oak trees)	
Circus assimilis	Spotted Harrier	Vulnerable	Not listed	1	BioNet	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. Preys on terrestrial mammals (e.g. bandicoots, bettongs, and rodents), birds and reptile, occasionally insects and rarely carrion (OEH 2025).	**Moderate**- There is potential habitat including woodland and open farmland. There is one record of this species within 10 km of the Proposed Activity Area	Yes
Climacteris picumnus victoriae	Brown Treecreeper (south-eastern)	Vulnerable	Vulnerable	14	BioNet	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. Found in eucalypt woodlands (including Box-Gum Woodland) and dry open forest of the inland slopes and plains	**Moderate** – This species is present in the locality and coupled with suitable habitat in the Proposed Activity Area this	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						inland of the Great Dividing Range; mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and River Red Gum (Eucalyptus camaldulensis) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses; usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging; also recorded, though less commonly, in similar woodland habitats on the coastal ranges and plains. Sedentary, considered to be resident in many locations throughout its range; present in all seasons or year-round at many sites; territorial year-round, though some birds may disperse locally after breeding (OEH 2025).	species is likely to occur.	
Daphoenositta chrysoptera	Varied sittella	Vulnerable	Not listed	6	BioNet	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 and mature smooth-barked gums with dead branches, mallee and Acacia woodland (OEH 2025).	**Moderate** – This species is present in the locality and coupled with suitable habitat in the Proposed Activity Area this species is likely to occur	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Erythrotriorchis radiatus	Red Goshawk	Endangered	Endangered	N/A	PMST	This unique Australian endemic raptor is distributed sparsely through northern and eastern Australia, from the western Kimberley Division of northern Western Australia to north-eastern Queensland and south to far north-eastern NSW, and with scattered records in central Australia. The species is very rare in NSW, extending south to about 30°S, with most records north of this, in the Clarence River Catchment, and a few around the lower Richmond and Tweed Rivers. Formerly, it was at least occasionally reported as far south as Port Stephens. Red Goshawks inhabit open woodland and forest, preferring a mosaic of vegetation types, a large population of birds as a source of food, and permanent water, and are often found in riparian habitats along or near watercourses or wetlands. In NSW, preferred habitats include mixed subtropical rainforest, Melaleuca swamp forest and riparian Eucalypt forest of coastal rivers (OEH 2025).	Low – This is a highly mobile species. The Proposed Activity Area outside the geographic distribution of this species and is not associated with vegetation types in the locality	No
Falco hypoleucos	Grey Falcon	Vulnerable	Vulnerable	N/A	PMST	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 5,000 individuals left. Population trends are unclear, though it is believed to be extinct in areas with more than 500 mm rainfall in NSW.	Low – This is a highly mobile species. The Proposed Activity Area outside the geographic distribution of this species and is not associated with vegetation types in the locality	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. Also occurs near wetlands where surface water attracts prey (OEH 2025).		
Falco subniger	Black Falcon	Vulnerable	Not listed	5	BioNet	Widely, but sparsely, distributed in New South Wales, mostly occurring woodland, shrubland and grassland in the arid and semi-arid zones, especially wooded watercourses and agricultural land with scattered remnant trees. It is usually associated with streams or wetlands, visiting them in search of prey and often using standing dead trees as lookout posts. Habitat selection is generally influenced more by prey densities than by specific aspects of habitat floristics or condition, although in agricultural landscapes it tends to nest in healthy, riparian woodland remnants with a diverse avifauna (OEH 2025).	**Moderate** – This species is present in the locality and coupled with suitable habitat in the Proposed Activity Area this species is likely to occur	Yes
Glossopsitta pusilla	Little lorikeet	Vulnerable	Not listed	8	BioNet	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	**Moderate** – This species is present in the locality and coupled with suitable habitat in the Proposed Activity Area this species is likely to occur	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						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. Isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also help sustain viable populations of the species. Feeds mostly on nectar and pollen, occasionally on native fruits such as mistletoe, and only rarely in orchards (OEH 2025).		
Grantiella picta	Painted Honeyeater	Vulnerable	Vulnerable			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 (OEH 2025).	This is a highly mobile species. The Proposed Activity Area outside the geographic distribution of this species and is not associated with vegetation types in the locality	No
Hieraaetus morphnoides	Little Eagle	Vulnerable	Not listed	3	BioNet	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW. Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter. Preys on birds, reptiles	**Moderate –** There are three records of this species within 10 km of the Proposed Activity Area, and there is a moderate likelihood of occurrence based on the presence of potential habitat	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						and mammals, occasionally adding large insects and carrion (OEH 2025).	(open eucalyptus woodland) found in the Proposed Activity Area	
Hirundapus caudacutus	White-throated Needletail	Vulnerable	Vulnerable	N/A	PMST	The White-throated Needletail is widespread in eastern and south-eastern Australia. In eastern Australia, the species is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Dividing Range and occasionally onto the adjacent inland plains. Occur most often over open forest and rainforest, as well as heathland, and remnant vegetation in farmland (OEH 2025).	Low – This species has not been recorded within 10 km of the Proposed Activity Area and is not associated with the vegetation types within Proposed Activity Area	No
Lathamus discolor	Swift Parrot	Endangered	Critically Endangered	2	BioNet	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 southwest slopes. Migrates to the Australian south-east mainland between February and October. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations (OEH 2025).	**Moderate –** There are two records of this species within 10 km of the proposed Activity Area. The Proposed Activity Area contains preferred feed trees including *Eucalyptus albens and Eucalyptus Melliodora*. This species is associated with PCT 393, PCT 3431, PCT 3767, and PCT 4089,	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
							equating to approximately 9.05 ha of suitable habitat for the species within the Proposed Activity Area	
Melanodryas cucullata cucullata	South-eastern Hooded Robin	Endangered	Endangered	N/A	PMST	Found in south-eastern Australia, generally east of the Great Dividing Range. Found in eucalypt woodland, mallee, and acacia shrubland. This is one of a suite of species that has declined in woodland areas in south-eastern Australia. The species appears unable to survive in remnants smaller than 100 – 200 ha (OEH 2025).	Low – There are no records of this species within 10km of the Proposed Activity Area. The Proposed Activity Area is lacking some aspects of habitat requirements including tall native grasses alongside structurally diverse vegetation	No
Neophema chrysostoma	Blue-winged Parrot	Vulnerable	Vulnerable	N/A	PMST	Blue-winged parrots inhabit a range of habitats from coastal, sub-coastal and inland areas, through to semi-arid zones. They tend to favour grasslands and grassy woodlands and are often found near wetlands both near the coast and in semi-arid zones (Cth DEECCW 2025c).	Low – There are no records of this species within 10 km of the Proposed Activity Area. There is no suitable habitat for this species within 10 km of the Proposed Activity Area	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Petroica boodang	Scarlet robin	Vulnerable	Not listed	1	BioNet	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. 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 (OEH 2025).	**Moderate** – This species has been recorded once within 10 km of the proposed Activity Area. This species is associated with PCT 393, PCT 3431, PCT 3767, and PCT 4089, equating to approximately 9.05 ha of suitable habitat within the Proposed Activity Area	Yes
Polytelis swainsonii	Superb Parrot	Vulnerable	Vulnerable	N/A	PMST	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. Inhabit Box-Gum, Box-Cypress-pine and	Low – There are no records of this species within 10 km of the Proposed Activity Area. The proposed Activity Area is outside the species	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						Boree woodlands and River Red Gum forest (OEH 2025).	geographic distribution	
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not listed	30	BioNet	The Grey-crowned Babbler has two distinctive subspecies that intergrade to the south of the Gulf of Carpentaria. West of here the subspecies rubeculus, formerly considered a separate species (Red-breasted Babbler) is still widespread and common. The eastern subspecies (temporalis occurs from Cape York south through Queensland, NSW and Victoria and formerly to the southeast 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 (OEH 2025).	**Recorded** – Thirteen individuals and two nests were recorded during surveys within suitable habitat in the Proposed Activity Area. This species is also present in the locality	Yes
Pyrrholaemus sagittatus	Speckled warbler	Vulnerable	Not listed	31	BioNet	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. There has been a decline in population	**Recorded** – Four individuals were recorded during surveys within suitable habitat in the Proposed Activity Area. This species is also	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						density throughout its range, with the decline exceeding 40% where no vegetation remnants larger than 100 ha survive. The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy (OEH 2025).	present in the locality	
Stagonopleura guttata	Diamond Firetail	Vulnerable	Vulnerable	6	BioNet	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 (OEH 2025).	**Moderate** – This species is present in the locality and coupled with suitable habitat in the Proposed Activity Area this species is likely to occur	Yes
Tyto novaehollandiae	Masked Owl	Vulnerable	Not listed	4	BioNet	This species lives in dry eucalypt forests and woodlands from sea level to 1100 m. The species distribution extends from the coast where it is most abundant to the	**Moderate** – Suitable foraging habitat is present within the	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						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.	Proposed Activity Area coupled with the records within a 10km search. There were no suitable large hollows for breeding or nesting observed	
Mammals								
Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Endangered	5	BioNet	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. The species has been 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. Females occupy home ranges of 200-500 ha, while males occupy very large home ranges from 500 to over 4000 ha. Are known to traverse their home ranges along densely vegetated creeklines (OEH 2025).	**Moderate** – The Proposed Activity Area has potential foraging and denning habitat for this highly mobile species which has been recorded in a 10 km search of the locality	Yes
Chalinolobus dwyeri	Large-eared Pied Bat	Endangered	Endangered	7	BioNet	The Large-eared Pied Bat is 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	**Moderate** – The Proposed Activity Area has potential foraging and roosting habitat for	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						distribution in NSW. There are scattered records from the New England Tablelands and North West Slopes. The species roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (Petrochelidon ariel), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. It is found in well-timbered areas containing gullies.	this highly mobile species which has been recorded in a 10 km search of the locality	
Falsistrellus tasmaniensis	Eastern false pipistrelle	Vulnerable	Not listed	1	BioNet	The Eastern False Pipistrelle is found on the south-east coast and ranges of Australia, from southern Queensland to Victoria and Tasmania. This species prefers moist habitats, with trees taller than 20 m (OEH 2025).	**Moderate** – The Proposed Activity Area has potential foraging and roosting habitat for this highly mobile species which has been recorded in a 10 km search of the locality	Yes
Micronomus norfolkensis	Eastern coastal free-tailed bat	Vulnerable	Not listed	4	BioNet	The Eastern Freetail-bat is found along the east coast from south Queensland to southern NSW. Occur in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range (2025).	Low – This species has been recorded in a 10 km search of the locality. Although there are records, the Proposed Activity Area does not contain vegetation this species is	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
							generally associated	
Miniopterus orianae oceanensis	Large bent-winged bat	Vulnerable	Not listed	4	BioNet	Large bent-winged-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. Hunt in forested areas, catching moths and other flying insects above the treetops (OEH 2025).	**Moderate** – The Proposed Activity Area has potential foraging and roosting habitat for this highly mobile species which has been recorded in a 10 km search of the locality	Yes
Myotis macropus	Southern myotis	Vulnerable	Not listed	2	BioNet	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 (OEH 2025).	**Moderate** – The Proposed Activity Area has potential foraging and roosting habitat for this highly mobile species which has been recorded in a 10 km search of the locality	Yes
Notamacropus parma	Parma Wallaby	Vulnerable	Vulnerable			This species range is now confined to the coast and ranges of central and northern NSW from the Gosford district to south of the Bruxner Highway between Tenterfield and Casino. Preferred habitat is moist eucalypt forest with thick, shrubby understorey, often with nearby grassy areas, rainforest margins and occasionally drier eucalypt forest (OEH 2025).	Low – The Proposed Activity Area lacks suitable habitat (dense understorey) and is located west of this species distribution area	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Nyctophilus corbeni	South-eastern Long-eared Bat (Corben's Long-eared Bat & Greater Long-eared Bat)	Vulnerable	Vulnerable	1	BioNet, PMST	Overall, the distribution of the south eastern form coincides about with the Murray Darling Basin with the Pilliga Scrub region being the distinct stronghold for this species. Inhabits a variety of vegetation types, including mallee, bulloke (*Allocasuarina leuhmanni*) and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of NSW and southern Queensland. Roosts in tree hollows, crevices, and under loose bark (OEH 2025).	**Moderate** – The Proposed Activity Area has potential foraging and roosting habitat for this highly mobile species which has been recorded in a 10 km search of the locality	Yes
Petauroides volans	Greater Glider (southern and central)	Endangered	Endangered	N/A	PMST	The greater glider is restricted to eastern Australia, occurring from the Windsor Tableland in north Queensland through to central Victoria (Wombat State Forest), with an elevational range from sea level to 1200 m above sea level. It prefers taller montane, moist eucalypt forest with relatively old trees and abundant hollows (OEH 2025).	Low – This species has not been recorded within 10 km of the Proposed Activity Area and is not associated with any of the recorded vegetation communities	No
Petaurus australis australis	Yellow-bellied Glider (south-eastern)	Vulnerable	Vulnerable	N/A	PMST	The Yellow-bellied Glider is found along the east 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 (OEH 2025).	Low – This species has not been recorded within 10 km of the Proposed Activity Area and is not associated with any of the recorded vegetation	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
							communities. No hollows >25 cm diameter were recorded	
Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not listed	1	BioNet	The Squirrel Glider is widely though sparsely distributed in eastern Australia, from northern Queensland to western Victoria. The species 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 (OEH 2025).	**Moderate** – Potential habitat in Proposed Activity Area (box-ironbark woodlands & hollows). Single record in last 25 years in 10 km buffer	Yes
Petrogale penicillata	Brush-tailed Rock-wallaby	Endangered	Vulnerable	N/A	PMST	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 (OEH 2025).	**Moderate** – Distinct habitat suitability in the western end of Proposed Activity Area (rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges)	Yes
Phascolarctos cinereus	Koala	Endangered	Endangered	2	BioNet	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	**Moderate –** Two records of this species occur within 10 km of the Proposed Activity	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						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. The species inhabit eucalypt woodlands and forests, and feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species (OEH 2025).	Area. This species is associated with vegetation types mapped within the Proposed Activity Area which includes known feed tree species	
Phascogale tapoatafa	Brush-tailed phascogale	Vulnerable	Not listed	1	BioNet	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 to 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 (OEH 2025).	**Moderate –** One record of this species occurs within 10km of the Proposed Activity Area. This species is associated with vegetation types mapped within the Proposed Activity Area	Yes
Pseudomys novaehollandiae	New Holland Mouse, Pookila	Not listed	Vulnerable	N/A	PMST	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	Low – There is no suitable habitat in the form of heathlands within the Proposed Activity Area	No

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
						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 (OEH 2025).		
Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Vulnerable	16	BioNet	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. The species 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 (OEH 2025).	**Moderate** – There is at least one active GHFF camp within 25 km of the Proposed Activity Area. All vegetation types within the Proposed Activity Area are associated with this species	Yes
Saccolaimus flaviventris	Yellow-bellied sheathtail-bat	Vulnerable	Not listed	1	BioNet	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. It forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory (OEH 2025).	**Moderate** – The Proposed Activity Area has potential foraging and roosting habitat for this highly mobile species which has been recorded in a 10 km search of the locality	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Scoteanax rueppellii	Greater broad-nosed bat	Vulnerable	Not listed	1	BioNet	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 most 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 3–6m (OEH 2025).	**Moderate** – The Proposed Activity Area has potential foraging and roosting habitat for this highly mobile species which has been recorded in a 10 km search of the locality	Yes
Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not listed	6	BioNet	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. This species 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. It is also occasionally found along cliff-lines in wet eucalypt forest and rainforest (OEH 2025).	**Moderate** – The Proposed Activity Area has potential foraging and roosting habitat for this highly mobile species which has been recorded in a 10 km search of the locality	Yes
Reptiles								

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
Aprasia parapulchella	Pink-tailed Legless Lizard	Vulnerable	Vulnerable	N/A	PMST	Populations occur in the Queanbeyan/Canberra district, Cooma, Yass, Bathurst, Albury and West Wyalong areas. Inhabits grassland and open woodland with substantial embedded rock cover in sunny situations. Recorded in both native and non-native grasslands. Usually recorded under small rocks (150 – 600 mm basal area) shallowly embedded in the soil (2 – 5 cm, and use ant burrows under these rocks (OEH 2025).	**Moderate** – Rocky habitat was observed in the western area of the Proposed Activity Area located adjacent to Owens Gap	Yes
Caretta caretta	Loggerhead Turtle	Endangered	Endangered	1	BioNet	Loggerhead Turtles are ocean-dwellers, foraging in deeper water for fish, jellyfish and bottom-dwelling animals. The female comes ashore to lay her eggs in a hole dug on the beach in tropical regions during the warmer months.	Low – There are no large ocean waterbodies that would support this species within the Proposed Activity Area	No
Delma vescolineata	Hunter Valley Delma	Endangered	Endangered	N/A	PMST	*Delma vescolineata* has been recorded in secondary native grassland remaining after the removal or dieback of previous woody canopy vegetation in association with sparse box-gum or ironbark woodland). The primary canopy species consists of *Eucalyptus melliodora and E. crebra*, with a diverse ground cover layer containing multiple grasses including *Austrostipa spp., Bothriochloa spp.,* and *Chloris* spp NSW TSSC 2024).	**Moderate** – This species is associated with a range of vegetation types including exotic dominated non-woody groundcover without enough native species to assign a PCT. The species is often found in sparce or degraded open areas of non-native vegetation. A precautionary approach has	Yes

Scientific Name	Common Name	BC Act	EPBC Act	Number of Records	Source	Habitat Requirements	Likelihood of Occurrence	Significant Impact Assessment
							been taken and all vegetation types associated with this species including exotic dominated grasslands have been considered as habitat for this species	

Appendix B

Test of Significance NSW Biodiversity Conservation Act 2016

The Proposed Activity Area covers an area of approximately 49.96 ha and is expected to result in up to removal of 18.62 ha of native vegetation, including 2.78 of planted native vegetation, to be removed. Twenty-seven hollow bearing trees were recorded within the Proposed Activity Area.

The vegetation to be removed comprises woodland, grassland, and plantation, which may be utilised by threatened species. These are comprised of the plant community types shown in **Table B.1**.

Table B.1 Vegetation Types within the Proposed Activity Area

PCT #	PCT Name	Biodiversity Conservation Act Status	Extent within Proposed Activity Area (ha)
393	White Box shrubby woodland of the western Liverpool Range	N/A	5.11
3431	Central Hunter Ironbark Grassy Woodland – woodland variant	Central Hunter Grey Box-Ironbark Woodland in the NSW North Coast and Sydney Basin Bioregions	1.62
	Central Hunter Ironbark Grassy Woodland – grassland variant	N/A	1.7
3767	Upper Hunter Escarpment Colluvial Ironbark Forest	N/A	5.66
4089	Namoi-Upper Hunter River Red Gum Forest - Inland Riverine Forests – woodland variant	Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions	1.3
	Namoi-Upper Hunter River Red Gum Forest - Inland Riverine Forests – grassland variant	N/A	0.45
NA	NA – Plantation	N/A	2.78
Total Area			18.62

Under the BC Act, an assessment of whether the Proposed Activity will have a significant impact on threatened species, communities or their habitats must consider the matters as set out in Section 7.3 of the BC Act or the 'five-part test'.

The following Five-Part Tests of Significance address threatened populations and flora and fauna species determined to have a moderate, high or known likelihood of occurrence in the 10 km database search of the Proposed Activity Area. These include:

Threatened Ecological Communities

- Central Hunter Grey Box-Ironbark Woodland in the NSW North Coast and Sydney Basin Bioregions – Endangered Ecological Community
- Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions – Endangered Ecological Community

Threatened Populations

- *Eucalyptus camaldulensis* (river red gum) population in the Hunter catchment – Endangered
- *Cymbidium canaliculatum* (tiger orchid) population in the Hunter Catchment – Endangered

Threatened Flora

- *Prasophyllum petilum* (Tarango leek orchid) – Endangered

Threatened Woodland Birds

- Regent honeyeater (*Anthochaera phrygia*) – Critically Endangered
- Swift parrot (*Lathamus discolor*) – Endangered
- Southern whiteface (*Aphelocephala leucopsis*) – Vulnerable
- Dusky woodswallow (*Artamus cyanopterus cyanopterus*) – Vulnerable
- South-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*) – Vulnerable
- Brown Treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*) – Vulnerable
- Little lorikeet (*Glossopsitta pusilla*) – Vulnerable
- Scarlet robin (*Petroica boodang*) – Vulnerable
- Grey-crowned babbler (eastern subspecies) (*Pomatostomus temporalis temporalis*) – Vulnerable
- Speckled warbler (*Pyrrholaemus sagittatus*) – Vulnerable
- Diamond firetail (*Stagonopleura guttata*) – Vulnerable
- Varied sittella (*Daphoensitta chrysoptera*) – Vulnerable

Threatened Forest Owl

- Masked owl (*Tyto novaehollandiae*) – Vulnerable

Threatened Raptors

- Black falcon (*Falco subniger*) – Vulnerable
- Little eagle (*Hieraaetus morphnoides*) – Vulnerable
- Spotted harrier (*Circus assimilis*) – Vulnerable

Threatened Arboreal Mammals

- Brush-tailed phascogale (*Phascogale tapoatafa*) – Vulnerable
- Squirrel glider (*Petaurus norfolcensis*) – Vulnerable

- Koala (*Phascolarctos cinereus*) – Endangered

Threatened Terrestrial Mammals

- Spotted-tailed quoll (*Dasyurus maculatus*) – Vulnerable
- Brush-tailed rock-wallaby (*Petrogale penicillata*) - Endangered

Threatened Bats

- Corben's long-eared bat (*Nyctophilus corbeni*) -Vulnerable
- Eastern cave bat (*Vespadelus troughtoni*) – Vulnerable
- Large-eared pied bat (*Chalinolobus dwyeri*) - Endangered
- Large bent-winged bat (*Miniopterus orianae oceanensis*) - Vulnerable
- Southern myotis (*Myotis macropus*) - Vulnerable
- Yellow- bellied sheathtail bat (*Saccolaimus flaviventris*) - Vulnerable
- Greater broad-nosed bat (*Scoteanax rueppellii*) - Vulnerable
- Grey-headed flying-fox (*Pteropus poliocephalus*) – Vulnerable

Threatened Reptiles

- Pink-tailed legless lizard (*Aprasia parapulchella*) – Vulnerable
- Hunter Valley delma (*Delma vescolineata*) – Endangered

Threatened Ecological Communities

Central Hunter Grey Box – Ironbark Woodland in the NSW North Coast and Sydney Basin Bioregions – Endangered Ecological Community

Central Hunter Grey Box-Ironbark Woodland occurs in the Central Hunter Valley between about Singleton and Muswellbrook. It is known to occur in the Cessnock, Singleton and Muswellbrook LGAs but may occur elsewhere within the Sydney Basin Bioregion.

The endangered ecological community (EEC) is characterised by one or more of spotted gum (*Corymbia maculata*), narrow-leaved ironbark (*Eucalyptus crebra*), slaty gum (*Eucalyptus dawsonii*) or grey box (*Eucalyptus moluccana*).

Central Hunter Grey Box-Ironbark Woodland occurs in areas of relatively low rainfall and high temperatures. It is associated mostly with Permian lithology, and is situated on gently undulating hills, slopes and valleys, or occasionally on rocky knolls.

Only areas within the Proposed Activity Area mapped as the woodland variant of PCT 3431 Central Hunter Ironbark Grassy Woodland has been assigned to the EEC.

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:

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
Not applicable.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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 **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**
An analysis of vegetation within a 10 km buffer of the Proposed Activity Area was undertaken using the State Vegetation Type Map (SVTM). The analysis identified approximately 6,997 ha of mapped PCTs that are associated with the Central Hunter Grey Box Ironbark Woodland (EEC), of which 1,254 ha is mapped as PCT 3431 which is present within the Proposed Activity Area. It is estimated up to 1.62 ha of PCT 3431, that conforms to the EEC, will be removed as part of the Proposed Activity. This will equate to the loss of ~0.04% of the PCT and associated EEC within 10 km of the Proposed Activity Area and 0.005% of the EEC's extent (46,920 ha) outlined in the Final Determination (NSW Scientific Committee 2010a) for the threatened community. The 1.62 ha proposed to be removed consists of various condition vegetation from a low condition groundcover with a scattered narrow leaved ironbark (*Eucalyptus crebra*) canopy to small (<1 ha), isolated patches of better-quality vegetation with a native dominant groundlayer and a persisting Eucalypt canopy. The patches of vegetation in the Proposed Activity Area have been altered by historic land-uses in the locality and continue to be managed in the agricultural setting that has already changed to composition of the EEC, the removal of these small patches will not see a substantial change to composition of the EEC as it has already undergone these changes. The removal of these small patches of EEC will result in only a minor overall loss, so that it is unlikely that the Proposed Activity will have a significant adverse effect on this endangered ecological community such that its local occurrence is likely to be placed at risk of extinction.
In relation to the habitat of a threatened species or ecological community:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
The analysis of the SVTM identified approximately 6,997 ha of mapped PCTs that are associated with the Central Hunter Grey Box Ironbark Woodland (EEC), of which 1,254 ha is mapped as PCT 3431 which is present within the Proposed Activity Area. It is estimated up to 1.62 ha of PCT 3431, that conforms to the EEC, will be removed as part of the Proposed Activity. This will equate to the loss of 0.04% of the PCT and associated EEC within 10 km of the Proposed Activity Area and 0.005% of the EEC's extent (46,920 ha) outlined in the Final Determination (NSW Scientific Committee 2010a) for the threatened community. The EEC proposed to be removed and modified is of a relatively small area and scattered across the Proposed Activity Area.
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
This EEC has been heavily cleared across most of its range. The remaining extent of the EEC is highly fragmented, occurring in small, isolated patches, most of which are less than 10 ha in size (NSW Scientific Committee 2010a). The vast majority of vegetation present today is regrowth from previous clearing over the past 20-50 years.

Potential habitat within the Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. The Proposed Activity will likely removal small patches of canopy species with the groundlayer to be retained where possible or allowed to re-establish at the completion of construction of the overhead line, therefore facilitating movement corridors for highly mobile species much the same as the current condition.

The removal of 1.62 ha of this EEC will result in a negligible increase in the fragmentation of the community and will not result in the isolation of any currently connected areas of this EEC.

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,

The EEC within the Proposed Activity Area is in relatively low condition and occurs as small patches in a highly cleared landscape. Potential habitat within the Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices.

Approximately 1.62 ha that conforms to the EEC occurs within the Proposed Activity Area and will be directly impacted as a result of the Proposed Activity.

Based on the currently low condition variants of the EEC and small extent proposed to be removed, It is unlikely the removal of the EEC will significantly affect the long-term survival of this ecological community in the locality.

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)

No declared areas of outstanding biodiversity value will be affected as a result of the Proposed Activity.

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.

The Proposed Activity has potential to directly or indirectly contribute to the following key threatening process listed under the BC Act.

- Clearing of native vegetation
- Removal of dead wood and trees
- Infection of native plants by *Phytophthora cinnamomi*
- Introduction and establishment of exotic rust fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae
- Invasion of native plant communities by exotic perennial grasses

To reduce the chance of key threatening process occurring or increasing within the Proposed Activity Area, Mitigation measures have been developed and are outlined in Section 5 of the Biodiversity Assessment Report.

Conclusion

The Proposed Activity would require the removal up to approximately 1.62ha of Central Hunter Grey Box – Ironbark Woodland. The Proposed Activity will negligibly increase the level of fragmentation of the EEC, will negligibly decrease the area of habitat of the EEC. The removal of up to 1.62ha of the EEC will see a minor reduction in the extent of the EEC in the locality by 0.04%.

Given the information provided above, the Proposed Activity is unlikely to result in a significant impact that may lead to local extinction of the Central Hunter Grey Box – Ironbark Woodland in the NSW North Coast and Sydney Basin Bioregions EEC.

Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions - Endangered Ecological Community

Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions generally occurs on floodplains and associated floodplain rises along the Hunter River and tributaries and is characterised by the assemblage of species dominated by river red gum (*Eucalyptus camaldulensis*) in combinations with forest red gum (*Eucalyptus tereticornis*), yellow box (*Eucalyptus melliodora*) and rough-barked apple (*Angophora floribunda*). Within the community stands of river oak (*Casuarina cunninghamiana subsp. cunninghamiana*) and swamp oak (*Casuarina glauca*) can form a part of this community.

Only areas within the Proposed Activity Area mapped as the woodland variant of PCT 4089 have been assigned the Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions – Endangered Ecological Community, as vegetation observed during the site visit identified attributes of the EEC in accordance with the Final Determination (NSW Scientific Committee 2010b).

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:
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
Not applicable.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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 **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**
An analysis of vegetation within a 10 km buffer of the Proposed Activity Area was undertaken using the State Vegetation Type Map (SVTM). The analysis identified approximately 1,452 ha of mapped PCT 4089 that is associated with the Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions - Endangered Ecological Community (EEC). It is estimated up to 1.30 ha of PCT 4089 that conforms to the Hunter Floodplain Red Gum Woodland EEC will be removed as part of the Proposed Activity. This will equate to the loss of 0.05% of the PCT and associated EEC within 10 km of the Proposed Activity Area The 1.30 ha proposed to be removed consists of low condition vegetation that is dominated in the understorey by exotic grasses with a very scattered canopy of river red gum (*Eucalyptus camaldulensis*) and/or yellow box (*Eucalyptus melliodora*). The patches of vegetation in the Proposed Activity Area have been significantly altered by historic land-uses in the locality and continue to be managed in the agricultural setting that has already changed to composition of the Hunter Floodplain Red Gum Woodland, the removal of these small patches will not see a substantial change to composition of the Hunter Floodplain Red Gum Woodland as it has already undergone these changes. The removal of these small low condition patches of Hunter Floodplain Red Gum Woodland will result in a negligible loss of the community, and it is unlikely that the Proposed Activity will have a significant adverse effect on this endangered ecological community such that its local occurrence is likely to be placed at risk of extinction.
In relation to the habitat of a threatened species or ecological community:

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:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
The analysis of the SVTM identified approximately 1,452 ha of mapped PCT 4089 that is associated with the Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions - Endangered Ecological Community (EEC). It is estimated up to 1.30 ha of PCT 4089, that conforms to the Hunter Floodplain Red Gum Woodland will be removed as part of the Proposed Activity. The Hunter Floodplain Red Gum Woodland proposed to be removed and modified is of a relatively small area, and scattered primarily as paddock trees bordering creeklines across the Proposed Activity Area.
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
This Hunter Floodplain Red Gum Woodland has been heavily cleared across most of its range. The remaining extent of the Hunter Floodplain Red Gum Woodland is highly fragmented, occurring in small, isolated patches that primarily consist of an exotic understorey and scattered individual trees in the canopy, most of which are less than 10 ha in size (NSW Scientific Committee 2010b). Potential habitat within the Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices and marginal due to the isolation of the patches of vegetation and lack of community structure. The Proposed Activity will likely removal individual canopy species with the groundlayer to be retained where possible or allowed to re-establish at the completion of construction of the overhead line, therefore facilitating movement corridors for highly mobile species much the same as the current condition. The removal of 1.30 ha of the Hunter Floodplain Red Gum Woodland will result in a negligible increase in the fragmentation of the community and will not result in the isolation of any currently connected areas of the Hunter Floodplain Red Gum Woodland.
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,
The Hunter Floodplain Red Gum Woodland within the Proposed Activity Area is in relatively low condition and occurs as small patches in a highly cleared landscape. Potential habitat within the Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices and is marginal at best and likely on provide habitat for highly mobile species moving across the landscape. Approximatel 1.30 ha that conforms to the Hunter Floodplain Red Gum Woodland occurs within the Proposed Activity Area and will be directly impacted as a result of the Proposed Activity. Based on the currently low condition of the Hunter Floodplain Red Gum Woodland and small extent proposed to be removed, it is unlikely the removal of the Hunter Floodplain Red Gum Woodlan will significantly affect the long-term survival of this ecological community in the locality.
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)
No declared areas of outstanding biodiversity value will be affected as a result of the Proposed Activity.
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.

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:
The Proposed Activity has potential to directly or indirectly contribute to the following key threatening process listed under the BC Act. • Clearing of native vegetation • Removal of dead wood and trees • Infection of native plants by *Phytophthora cinnamomi* • Introduction and establishment of exotic rust fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae • Invasion of native plant communities by exotic perennial grasses To reduce the chance of key threatening process occurring or increasing within the Proposed Activity Area, Mitigation measures have been developed and are outlined in Section 5 of the Biodiversity Assessment Report.
Conclusion
The Proposed Activity would require the removal of up to approximately 1.30 ha of Hunter Floodplain Red Gum Woodland. The Proposed Activity will negligibly increase the level of fragmentation of the EEC, will negligibly decrease the area of habitat of the EEC. The removal of up to 1.30 ha of the Hunter Floodplain Red Gum Woodland will see a negligible reduction in the extent of the Hunter Floodplain Red Gum Woodland in the locality by 0.05%. Given the information provided above, the Proposed Activity is unlikely to result in a significant impact that may lead to local extinction of the Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions EEC.

Threatened Populations

Eucalyptus camaldulensis population in the Hunter catchment – endangered population

River red gum (*Eucalyptus camaldulensis*) is the most widespread eucalypt in Australia, found in all mainland states and territories. In NSW, River red gum occurs along the western flowing rivers but is known from only one coastal catchment, the Hunter. It has been recorded in the local government areas of Lithgow, Maitland, Mid-Western Regional, Muswellbrook, Port Stephens, Singleton and Upper Hunter (OEH 2025).

River red gum may occur with forest red gum (*Eucalyptus tereticornis*), yellow box (*Eucalyptus melliodora*), river oak (*Casuarina cunninghamiana* subsp. c*unninghamiana*) and rough-barked apple (*Angophora floribunda*). The species was recorded on the edge of the Proposed Activity Area (single individual) and was observed outside the Proposed Activity Area along the golf course and near Kingdom Ponds and Middle Brook.

Approximately 1.30 ha of habitat for this endangered population associated with PCT 4089, will be impacted by the Proposed Activity Area.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
River red gum (*Eucalyptus camaldulensis*) within the Proposed Activity Area forms part of the *Eucalyptus camaldulensis* population in the Hunter catchment – endangered population. The Proposed Activity will impact approximately 1.30 ha of habitat for this endangered population within the Proposed Activity Area. Given the form of this species, the endangered population is able to be clearly and readily identified. As such, mitigation measures have been outlined to reduce the impacts on this endangered population so that the detailed design process will reduce impacts to these species. There is a single individual recorded in the Proposed Activity Area. This individual is located on the edge of the Proposed Activity Area and through detailed design should be retained therefore unlikely the Activity will have an impact on the threatened population. It is considered that the Proposed Activity will not lead to a long-term decrease in the size of a viable local population of this species such that it is likely to be placed at risk of extinction.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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
Not applicable.
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
Not applicable.
In relation to the habitat of a threatened species or ecological community:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
The Proposed Activity will impact approximately 1.30 ha of suitable habitat for this endangered population within the Proposed Activity Area. The habitat for this population is disturbed and has been modified by historic agricultural practices.
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
Vegetation occurring within the Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. There is a single individual recorded in the Proposed Activity Area. This individual is located on the edge of the Proposed Activity Area and through detailed design should be retained therefore unlikely the Activity will have an impact on the threatened population. The removal of 1.30 ha of suitable habitat for the endangered population within the Proposed Activity Area is unlikely to increase the existing fragmentation of the population.
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,
The habitat proposed to be removed and modified is of a relatively small area and is highly disturbed and fragmented from any large important patches of the population. It is unlikely any individuals of the river red gum will be removed as part of the Proposed Activity as the 1.30 ha of habitat is primarily exotic grassland with the occasional remnant tree. The single individual recorded in the Proposed Activity Area. is located on the edge of the Proposed Activity Area and

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
through detailed design should be retained therefore unlikely the Activity will have an impact on the threatened population. The suitable habitat to be removed is considered to be of low importance to the long-term survival of the endangered population.
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)
No declared areas of outstanding biodiversity value are located in, or near, the Proposed Activity Area. The project will not impact any declared areas of outstanding biodiversity value.
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.
One key threatening process is relevant to the project, being: • Clearing of native vegetation. Up to 1.30 ha of degraded habitat for the endangered population within the Proposed Activity Area will be removed. The overall removal of this vegetation is likely to have a very minor contribution to the KTP.
Conclusion
The Proposed Activity includes the removal of 1.30 ha of degraded habitat for the endangered population within the Proposed Activity Area. The single individual recorded in the Proposed Activity Area. Is located on the edge of the Proposed Activity Area and through detailed design should be retained therefore unlikely the Activity will have an impact on the threatened population. The removal of the degraded habitat will negligibly increase the level of fragmentation of habitat for this endangered population and will negligibly decrease the area of habitat of the endangered population and includes a single key threatening processes. The Proposed Activity is unlikely to result in a significant impact on the *Eucalyptus camaldulensis* population in the Hunter catchment - endangered population listed under the BC Act.

***Cymbidium canaliculatum* (tiger orchid) population in the Hunter Catchment – Endangered**

This endangered population typically grows in the hollows, fissures, trunks and forks of trees in white box (*Eucalyptus albens*) dominated woodlands, where its host trees typically occur on Permian Sediments of the Hunter Valley floor. It usually occurs singly or as a single clump, which can form large colonies on trees, between two and six metres from the ground.

Cymbidium canaliculatum (family Orchidaceae) is not currently listed as an endangered species in Part 1 of Schedule 1 or as a critically endangered species in Part 1 of Schedule 1A and as a consequence populations of this species are eligible to be listed as endangered populations.

The population of the orchid *C. canaliculatum* in the Hunter Catchment is eligible to be listed as an endangered population as, in the opinion of the Scientific Committee it is facing a very high risk of extinction in New South Wales in the near future (NSW OEH 2005).

The Hunter Catchment population of *C. canaliculatum* refers to all plants of occurring within the Hunter Catchment, as defined by Australia's River Basins (Geoscience Australia 1997). The Hunter Catchment includes the local government areas of Cessnock, Maitland, Dungog, Singleton, Muswellbrook, Newcastle, Port Stephens, part of Mid-western Regional, and part of Upper Hunter.

The population of *C. canaliculatum* in the Hunter Catchment is at the south-eastern limit of the geographic range for this species (Peake 2005). This population is of significant conservation value because it is one of the few epiphytic orchids occurring at temperate latitudes.

Threats to the population of *C. canaliculatum* in the Hunter Catchment include land clearing and the associated fragmentation of habitat, on-going removal of remnant trees, and illegal collecting. It may be inferred from these threats that the population of *C. canaliculatum* in the Hunter Catchment may suffer a projected or continuing decline in abundance, geographic distribution or habitat quality. Local orchid enthusiasts and land managers have observed such declines in habitat quality and abundance of *C. canaliculatum* during recent decades.

The population of *C. canaliculatum* in the Hunter Catchment is at the south-eastern limit of the geographic range for this species (Peake 2005). This population is of significant conservation value because it is one of the few epiphytic orchids occurring at temperate latitudes.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
Any potential tiger orchids within the Proposed Activity Area form part of the *Cymbidium canaliculatum* population in the Hunter catchment – endangered population. The Proposed Activity will involve the removal of 13.69 ha of potential habitat for this species associated with PCT 393, PCT 3431, PCT 3767 and PCT 4089 within the 10 km buffer of the Proposed Activity Area. Identified hollow bearing trees and individuals of this species should be avoided during detailed design of the Proposed Activity. Additionally, mitigation measures in **Section 7** are proposed to minimise indirect impacts. Therefore, it is considered that the Proposed Activity will not lead to a long-term decrease in the size of a viable local population of this species such that it is likely to be placed at risk of extinction.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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
Not applicable.
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
Not applicable.
In relation to the habitat of a threatened species or ecological community:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
The Proposed Activity will require removal of 13.69 ha of potential habitat for this species associated with PCT 393, PCT 3431, PCT 3767 and PCT 4089 within the 10km buffer of the Proposed Activity Area. The habitat proposed to be removed and modified is of a relatively small area and is highly disturbed. Known and potential habitat for these species occurs widely within the locality in both privately owned lands and conservation areas such as the Towarri National Park (NP) and Wingen Nature Reserve (NR) to the north (6 km and 13 km away, respectively) and Scone

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
Mountain NP to the east (11 km away). Thus, the Proposed Activity is considered to likely remove a marginal extent of suitable habitat for this endangered population.
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
Vegetation occurring within the Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. The removal of13.69 ha of suitable habitat for the *Cymbidium canaliculatum* population in the Hunter catchment will likely result in a negligible increase in the existing fragmentation.
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,
The Proposed Activity should plan to avoid removal of any individuals of this endangered population during the detailed design phase. The habitat proposed to be removed and modified is of a relatively small area and is highly disturbed. Known and potential habitat for these species occurs widely within the locality in both privately owned lands and conservation areas such as the Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The suitable habitat to be removed is considered to be of low importance to the long-term survival of the endangered population.
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)
No declared areas of outstanding biodiversity value are located in, or near, the Proposed Activity Area. The Proposed Activity will not impact any declared areas of outstanding biodiversity value.
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.
Two key threatening process are relevant to the project, being: • Clearing of native vegetation • Loss of hollow bearing trees Given that a total of 13.69 ha of potential habitat will be removed, and hollow bearing trees should be avoided in the Detailed Planning Phase, the implications of these KTPs are unlikely significant.
Conclusion
The project includes the removal of about 13.69 ha potential habitat for the *Cymbidium canaliculatum* population in the Hunter catchment - endangered population. Any tiger orchid identified, and hollow bearing trees should be avoided in the detailed design phase. Removal of this area of suitable habitat will negligibly increase the level of fragmentation of habitat for this endangered population and negligibly decrease the area of habitat of the endangered population. Two single key threatening processes are relevant, though are negligible (clearing of vegetation) and avoidable (loss of hollow bearing trees). The Proposed Activity is unlikely to result in a significant impact on the *Cymbidium canaliculatum* population in the Hunter catchment - endangered population listed under the BC Act.

Threatened Flora

***Prasophyllum petilum* (Tarango leek orchid) – Endangered**

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 approximately 10 km west of Muswellbrook.

The NSW Herbarium considers *Prasophyllum petilum* and *Prasophyllum* sp. Wybong (C. Phelps ORG5269) to be synonyms (i.e. the same species). As it stands, the two species are treated as one for NSW regulatory purposes, with the distinction maintained under Commonwealth legislation.

This species has not been recorded within 10 km of the Proposed Activity Area but is considered to have a moderate likelihood of occurrence based on potential suitable habitat in the form of open eucalypt woodland and grassland. This species is associated with PCT 393, PCT 3431 and PCT 3767, summing to approximately 14.75 ha of suitable habitat within the Proposed Activity Area.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
The Proposed Activity will result in the removal of up to 14.75 ha of native vegetation, which forms potential habitat for the species. Any potential habitat present within the Proposed Activity Area is likely to also be found within the contiguous patches of habitat adjacent to the Proposed Activity Area specifically in the west of the overhead line easement and small patches across the highly disturbed floodplain areas. There are also areas in proximity that are in the National Park Reserve system that could support habitat for this species. The National Parks include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away) In addition, the narrow (generally 30 m wide except for 520 m of 36.18 m width) easement will retain where possible a ground and shrub layer and, where removed as part of the Proposal Activity, it is intended that vegetation will naturally re-establish in the lower strata where permanent structures are not present post construction. The minor loss of habitat in the narrow alignment is unlikely to affect exchange of genes between individuals or populations of species that occur in the general area, given the relatively narrow Proposed Activity Area and the persistence of these species in an already highly disturbed landscape. The loss of native vegetation associated with the Proposed Activity Area is not likely to result in a significant reduction in habitat, and the Proposed Activity is not likely to have an adverse effect on the life cycle of this species such that a viable local population of the species is likely to be placed at risk of extinction.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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
Not applicable.
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
Not applicable.
In relation to the habitat of a threatened species or ecological community:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

The Proposed Activity will require removal of approximately 14.75 ha of potential habitat for this species associated with PCT 393, PCT 3431 and PCT 3767. The vegetation within the Proposed Activity Area is likely to be connected to larger, better-quality remnants that would support the species.
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
Suitable habitat for the species currently exists in a fragmented state within the Proposed Activity Area. The additional removal of up to 14.75 ha will only marginally increase fragmentation in the locality. In addition, the narrow (generally 30 m wide except for 520 m of 36.18 m width) easement will retain where possible a ground and shrub layer and were removed as part of the Proposal Activity, it is intended that vegetation will naturally re-establish in the lower strata where permanent structures are not present post construction.
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,
Extensive areas of similar or higher quality habitat for the species occurs in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The occurrence of habitat for this species within the Proposed Activity Area is not any more important to the survival of the species than any other location.
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)
No declared areas of outstanding biodiversity value are located in, or near, the Proposed Activity Area. The Proposed Activity will not impact any declared areas of outstanding biodiversity value.
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.
Three key threatening processes are relevant to the Proposed Activity, being: • Clearing of native vegetation. Given that a total of approximately 14.75 ha of potential habitat will be removed, the implications of this KTPs are not considered to be significant.
Conclusion
The project includes the removal of about 14.44 ha that provides potential suitable habitat for this species. Removal of potential habitat will negligibly increase the level of fragmentation of habitat for the species and negligibly decrease the area of habitat of the species. One key threatening process is relevant, being the clearing of native vegetation, however this is considered to be negligible. The Proposed Activity is unlikely to result in a significant impact on the Tarango leek orchid.

Threatened Woodland Birds

Regent honeyeater (*Anthochaera phrygia*) – Critically Endangered

Within NSW, breeding sub-populations of the regent honeyeater are fragmented and occur mainly around the Capertee Valley in central-eastern NSW and the Bundarra-Barraba region in northern inland NSW. Minor and sporadic breeding occurs in other areas such as Warrumbungle National Park, Pilliga forests, Mudgee-Wollar region, and the Hunter and Clarence Valleys. The regent honeyeater inhabits eucalypt open forests and woodlands, predominantly box-ironbark types, but also spotted gum (*Corymbia maculata*) and swamp mahogany (*Eucalyptus robusta*) on the coast. The species nests in branch forks of live eucalypts or she-oaks (OEH 2025).

This species has not been recorded within 10 km of the Proposed Activity Area but is considered to have a moderate likelihood of occurrence based on suitable habitat in the locality (Box-Ironbark Woodland). Potential foraging habitat for this species in the Proposed Activity Area includes woodland and forest areas, including planted native vegetation, which make up approximately 16.47 ha.

Southern whiteface (*Aphelocephala leucopsis*) – Vulnerable

Southern whiteface live in a wide range of open woodlands and shrublands where there is an understorey of grasses or shrubs, or both. These areas are usually in habitats dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains. Southern whiteface are considered sedentary; however, records indicate that individuals may move into wetter areas outside of their normal range during drought years (Higgins and Peter 2002 cited in NSW OEH 2023).

This species has not been recorded within 10 km of the Proposed Activity Area but is considered to have a moderate likelihood of occurrence based on suitable habitat in the locality (woodlands with understorey of grasses and/or shrubs). Potential foraging and breeding habitat for this species in the Proposed Activity Area includes areas which make up approximately 18.62 ha.

Dusky woodswallow (*Artamus cyanopterus cyanopterus*) – Vulnerable

The dusky woodswallow is 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. They 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 ground-cover of grasses or sedges and fallen woody debris. It has also been recorded in shrublands, heathlands and very occasionally in moist forest or rainforest. Also found in farmland, usually at the edges of forest or woodland (OEH 2017).

This species has one record within 10 km of the Proposed Activity Area and is considered to have a moderate likelihood of occurrence based on suitable habitat found along the escarpment to the east of Moobi. which may provide potential foraging and breeding habitat for this species in the Proposed Activity Area, as well as grassy eucalypt woodlands, box-gum woodlands, riparian areas, and lightly wooded farmland (associated with PCT 393, PCT 3431, PCT 3767, PCT 4089 and native plantation areas), which make up a total of 18.62 ha.

South-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*) – Vulnerable

The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. Inhabits open

forest and woodlands of the coast and the Great Dividing Range where stands of she-oak occur (OEH 2025).

This species has not been recorded within 10 km of the Proposed Activity Area but is considered to have a moderate likelihood of occurrence based on suitable habitat in the locality (she-oak trees associated with PCT 4089). Potential foraging habitat for this species in the Proposed Activity Area includes areas that make up approximately 1.30 ha.

Brown treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*) – Vulnerable

The brown treecreeper is endemic to eastern Australia, inhabiting eucalypt forests and woodlands of the inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges. The species is found in woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey (OEH 2025).

This species has not been recorded within 10 km of the Proposed Activity Area, though there are many records from the surrounding area. It is considered to have a moderate likelihood of occurrence based on the presence of potential habitat (box-gum woodland associated with PCT 393 and PCT3431) found in the western end of the Proposed Activity Area, which is approximately 8.43 ha.

Varied sittella (*Daphoensitta chrysoptera*) – Vulnerable

The varied sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands, with a nearly continuous distribution in NSW from the coast to the far west. It inhabits eucalypt forests and woodlands, especially rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. The varied sittella feeds on arthropods gleaned from crevices in rough or decorticating bark, dead branches, standing dead trees, and from small branches and twigs in the tree canopy. It builds a cup-shaped nest of plant fibres and cobwebs in an upright tree fork high in the living tree canopy, and often re-uses the same fork or tree in successive years (OEH 2025)

This species has been recorded six times within 10km of the Proposed Activity Area. This species is associated with native plantation, PCT 393, PCT 3431, PCT 3767, and PCT 4089, which is approximately 18.62 ha of suitable habitat within the Proposed Activity Area.

Little lorikeet (*Glossopsitta pusilla*) – Vulnerable

The little lorikeet is widely distributed across the coastal and Great Divide regions of eastern Australia, from Cape York to South Australia. NSW provides a significant portion of its core habitat, with populations extending as far west as Dubbo and Albury. This species exhibits nomadic movements influenced by season and food availability, although some areas retain resident populations for much of the year, with breeding pairs suspected of local nomadism. The little lorikeet primarily forages in the canopy of open Eucalyptus forests and woodlands, but also feeds on Angophora, Melaleuca, and other tree species. Riparian habitats are particularly important due to their higher soil fertility and productivity. Isolated flowering trees in open areas, such as paddocks, roadside remnants, and urban trees, also support viable populations.

There are eight records of this species within 10km of the Proposed Activity Area. This species is associated with the native plantation, PCT 393, PCT 3431, PCT 3767 and PCT 4089, which is approximately 16.47 ha of suitable habitat for this species.

Swift parrot (*Lathamus discolor*) – Endangered

This species breeds in Tasmania during spring and summer, migrating to south-eastern Australia in autumn and winter, from Victoria and eastern South Australia to south-east Queensland. In NSW, it is mostly found along the coast and south-west slopes. The Swift Parrot migrates to the Australian south-east mainland between February and October, favouring areas where eucalypts are flowering profusely or where there are abundant lerp infestations. Preferred feed trees include winter-flowering species such as swamp mahogany, spotted gum, red bloodwood, forest red gum, mugga ironbark, and white box. Commonly used lerp-infested trees include Inland grey box, grey box, blackbutt, and yellow box.

There are two records of this species within 10km of the proposed Activity Area. The Proposed Activity Area contains preferred feed trees including white box (*Eucalyptus albens*) and yellow box (*Eucalyptus melliodora*). This species is associated with PCT 393, PCT 3431, PCT 3767, and PCT 4089, and native plantations, equating to approximately 16.47 ha of suitable habitat for the species within 10 km of the Proposed Activity Area.

Scarlet robin (*Petroica boodang*) – Vulnerable

The scarlet robin is distributed from southeast Queensland to southeast South Australia, including Tasmania and southwest Western Australia. In New South Wales, it ranges from coastal areas to inland slopes. This species inhabits dry eucalypt forests and woodlands with open, grassy understorey and scattered shrubs. It can also be found in mature and regrowth vegetation, mallee, wet forests, wetlands, and tea-tree swamps. Their habitat often includes abundant logs and fallen timber.

This species has been recorded once within 10km of the proposed Activity Area. This species is associated with PCT 393, PCT 3431, PCT 3767, and PCT 4089, equating to approximately 15.83 ha of suitable habitat within the Proposed Activity Area.

Grey-crowned babbler (eastern subspecies) (*Pomatostomus temporalis temporalis*) – Vulnerable

The eastern form of the grey-crowned babbler (*Pomatostomus temporalis temporalis*) occurs on the western slopes and plains of NSW with isolated populations known from coastal woodlands on the North Coast, in the Hunter Valley and from the South Coast near Nowra. Grey-crowned babblers occupy open woodlands dominated by mature eucalypts, with regenerating trees, tall shrubs, and an intact ground cover of grass and forbs. Nests are usually located in shrubs or sapling eucalypts, although they may be built in the outermost leaves of low branches of large eucalypts. Nests are maintained year-round, and old nests are often dismantled to build new ones (OEH 2025).

This species including nests was recorded in the Proposed Activity Area during surveys, occupying suitable woodland habitat. Potential foraging and breeding habitat for this species in the Proposed Activity Area includes woodland and forest areas associated with PCT 393, PCT 3431 and PCT 3767; the species and nests were recorded during surveys within PCT 3431 and PCT 4089. Total habitat for this species in the Proposed Activity Area equates to approximately 15.83 ha.

Speckled warbler (*Pyrrholaemus sagittatus*) – Vulnerable

The speckled warbler has a patchy distribution across south-eastern Queensland, the eastern half of NSW, and into Victoria, reaching as far west as the Grampians. It is most commonly found in the hills and tablelands of the Great Dividing Range and is rarely seen along the coast. This species inhabits various Eucalyptus-dominated communities with a grassy understorey, often found on rocky ridges or in gullies. This species typical habitat includes scattered native tussock grasses, a sparse shrub layer,

some eucalypt regrowth, and an open canopy. Large, relatively undisturbed remnants are essential for the species' persistence in an area.

This species has been recorded during surveys on four occasions within the Proposed Activity Aera. Additionally, 31 records of this species occur within 10 km of the Proposed Activity Area. This species is associated with native plantation, PCT 393, PCT 3431, PCT 3767, and PCT 4089, summing to approximately 18.62 ha of suitable habitat within the Proposed Activity Area.

Diamond firetail (*Stagonopleura guttata*) – Vulnerable

The diamond firetail is endemic to south-eastern Australia, ranging from central Queensland to the Eyre Peninsula in South Australia. It is widely distributed in NSW, particularly in the Northern, Central, and Southern Tablelands, as well as the Northern, Central, and South Western Slopes, and the North West Plains and Riverina. Although uncommon in coastal districts, there are records from areas near Sydney, the Hunter Valley, and the Bega Valley. This species inhabits grassy eucalypt woodlands, including Box-Gum and Snow Gum Woodlands, as well as open forests, mallee, and natural temperate grasslands. It is often found in riparian areas and lightly wooded farmland (OEH 2024).

This species is considered to have a moderate likelihood of occurrence based on suitable habitat present across the Proposed Activity Area, including grassy eucalypt woodlands, box-gum woodlands, riparian areas, and lightly wooded farmland (associated with PCT 393, PCT 3431, PCT 3767, PCT 4089 and eucalyptus plantation areas), which make up a total of 18.62 ha.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
The Proposed Activity will result in the removal of up to 18.62 ha of native vegetation (including native plantation), which forms potential foraging and/or breeding habitat for the listed threatened woodland bird species. A total of 27 hollow bearing trees (are within the Proposed Activity Area. Detailed design for the Proposed Activity will attempt to reduce the number of hollow bearing trees to be removed. Any potential habitat present within the Proposed Activity Area is likely to also be found within the contiguous patches of habitat adjacent to the Proposed Activity Area specifically in the west of the overhead line easement and small patches across the highly disturbed floodplain areas. There are also areas in proximity that are in the National Park Reserve system that would support foraging, roosting and breeding habitat for these threatened bird populations. The National Parks include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away) In addition, the narrow (generally 30 m wide except for 520 m of 36.18 m width) easement will retain where possible a ground and shrub layer and were removed as part of the Proposed Activity, it is intended that vegetation will naturally re-establish in the lower strata where permanent structures are not present post construction. The minor loss of foraging, breeding and roosting resources in the narrow alignment is unlikely to affect exchange of genes between individuals or populations of species that occur in the general area, given the relatively narrow Proposed Activity Area and the persistence of these species in an already highly disturbed landscape. The loss of native vegetation associated with the Proposed Activity Area is not likely to result in a significant reduction in foraging or breeding habitat, and the Proposed Activity is not likely to have

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
an adverse effect on the life cycle of these species such that a viable local population of these species is likely to be placed at risk of extinction.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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
Not applicable.
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
Not applicable.
In relation to the habitat of a threatened species or ecological community:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
The Proposed Activity will require removal of approximately 18.62 ha of potential habitat for these threatened woodland bird species associated with PCT 393, PCT 3431, PCT3767, PCT 4089, along with the native plantation, which together form potential foraging habitat for these woodland bird species. The vegetation within the Proposed Activity Area is likely to form part of a larger territory for these species, and is connected to larger, better-quality remnants that would support many of the threatened woodland bird species.
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
Habitat for the threatened woodland bird species is currently fragmented within the Proposed Activity Area. The additional removal of up to 18.62 ha will only marginally increase fragmentation in the locality. In addition, the narrow (generally 30 m wide except for 520 m of 36.18 m width) easement will retain where possible a ground and shrub layer and were removed as part of the Proposed Activity, it is intended that vegetation will naturally re-establish in the lower strata where permanent structures are not present post construction. The retention of the groundlayer would still act as a movement corridor for these highly mobile sites.
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,
Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The bushland immediately adjacent to the Proposed Activity Area is extensive and likely to provide a variety of habitat features, such as hollow bearing trees, stags, termite mounds, dense shrubs and mature trees. The occurrence of habitat for these species within the Proposed Activity Area is not any more important to the survival of the species than any other location.
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)

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
No declared areas of outstanding biodiversity value are located in, or near, the Proposed Activity Area. The Proposed Activity will not impact any declared areas of outstanding biodiversity value.
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.
Three key threatening processes are relevant to the Proposed Activity, being: • Clearing of native vegetation. • Removal of dead wood and dead trees. • Loss of hollow-bearing trees Given that a total of approximately 18.62 ha of potential habitat will be removed, and where possible hollow bearing trees would be avoided, while dead wood and trees would be temporarily moved and then replaced in a nearby suitable location or utilised within the track design upon completion of works, the implications of these KTPs are not considered to be significant.
Conclusion
The project includes the removal of about 18.62 ha that provides habitat for threatened woodland birds. Removal of potential habitat will negligibly increase the level of fragmentation of habitat for these species and negligibly decrease the area of habitat of the species. Three key threatening processes are relevant, though are negligible (clearing of vegetation, removal of dead wood and dead trees, loss of hollow bearing trees). The Proposed Activity is unlikely to result in a significant impact on these threatened woodland birds listed under the BC Act.

Threatened Forest Owls

Masked owl (*Tyto novaehollandiae*)

In NSW masked owls are distributed from the coast, where they are most abundant, to the western plains. They occur in dry eucalypt forests and woodlands, often foraging along the forest edges and roadsides. The species has a large home-range of 500 to 1000 ha, and is known to breed in large tree hollows (> 20 cm diameter) or sometimes caves (OEH 2025).

There are four records of this species within a 10 km database search of the Proposed Activity Area. Potential foraging and breeding habitat for this species occurs in the Proposed Activity Area and includes woodland and forest including native plantations which make up approximately 18.62 ha.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
The Proposed Activity will result in the removal of up to 18.62 ha of native vegetation (including native plantations), which forms potential foraging and breeding habitat for the listed threatened woodland bird species. Ten hollow bearing trees with hollows >20 cm diameter were observed within the Proposed Activity Area.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
Any potential foraging habitat present within the Proposed Activity Area is likely to also be found within the contiguous patches of habitat adjacent to the Proposed Activity Area specifically in the west of the overhead line easement and small patches across the highly disturbed floodplain areas. In addition, the narrow (generally 30 m wide except for 520 m of 36.18 m width) easement will retain where possible a ground and shrub layer and were removed as part of the Proposed Activity it is intended that vegetation will naturally re-establish in the lower strata where permanent structures are not present post construction. There will be the loss of a ten hollow bearing trees that are considered to be suitably sized roosting or breeding trees. As part of the detailed design the hollow bearing trees should be retained as part of an avoidance strategy for the Proposed Activity. The minor loss of foraging resources and up to ten hollow bearing trees in the narrow overhead line easement is unlikely to affect exchange of genes between individuals or populations of this species that occur in the general area, given the relatively narrow Proposed Activity Area and the persistence of this species in an already highly disturbed landscape. The loss of native vegetation associated with the Proposed Activity Area is not likely to result in a significant reduction in foraging or breeding habitat, and the Proposed Activity is not likely to have an adverse effect on the life cycle of these species such that a viable local population of this species is likely to be placed at risk of extinction.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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
Not applicable.
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
Not applicable.
In relation to the habitat of a threatened species or ecological community:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
The Proposed Activity will require removal of approximately 18.62 ha of potential habitat for the masked owl. In addition, the current alignment would see the loss of up to ten hollow bearing trees that are of a suitable size for a threatened forest owl to utilise as roosting or breeding trees.
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
Habitat for the masked owl is currently fragmented within the Proposed Activity Area. The additional removal of up to 18.62 ha will only marginally increase fragmentation in the locality. In addition, the narrow (generally 30 m wide except for 520 m of 36.18 m width) easement will retain where possible a ground and shrub layer and were removed as part of the Proposed Activity, it is intended that vegetation will naturally re-establish in the lower strata where permanent structures are not present post construction. The retention of the groundlayer would still act as a movement corridor for this highly mobile species.
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,

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The bushland immediately adjacent to the Proposed Activity Area is extensive and likely to provide a variety of habitat features, such as hollow bearing trees, stags, dense shrubs and mature trees. The occurrence of habitat for this species within the Proposed Activity Area is not any more important to the survival of the species than any other location.
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)
No declared areas of outstanding biodiversity value are located in, or near, the Proposed Activity Area. The Proposed Activity will not impact any declared areas of outstanding biodiversity value.
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.
Three key threatening processes are relevant to the Proposed Activity, being: • Clearing of native vegetation. • Removal of dead wood and dead trees • Loss of Hollow bearing trees. Given that a total of approximately 18.62 ha of potential habitat will be removed, and where possible hollow bearing trees would be avoided, while dead wood and trees would be temporarily moved and then replaced in a nearby suitable location or utilised within the track design upon completion of works, the implications of these KTPs are not considered to be significant.
Conclusion
The project includes the removal of about 18.62 ha that may provide habitat for the masked owl. Removal of potential habitat will negligibly increase the level of fragmentation of habitat for these species and negligibly decrease the area of habitat of the species. Three key threatening processes are relevant, though are negligible (clearing of vegetation, removal of dead wood and dead trees, loss of hollow bearing trees). The Proposed Activity is unlikely to result in a significant impact on the masked owl.

Threatened Raptors

Black falcon (*Falco subniger*) – Vulnerable

The black falcon is widely but sparsely distributed across New South Wales, primarily in inland regions. Reports of black falcons on the tablelands and coast are often misidentified brown falcons. In New South Wales, it is assumed there is a single population that is part of a broader continental population, as these highly mobile birds often travel hundreds of kilometres. It is typically found near watercourses or in areas with isolated patches of trees. It hunts over open wooded grasslands, as well as saltbush and bluebush plains, and other areas with low vegetation.

There are five records of this species within 10 km of the proposed Activity Area. This species is associated with PCT 3431, PCT 3767, and PCT 4089, making up approximately 10.72 ha of suitable habitat within 10 km of the proposed Activity Area.

Little eagle (*Hieraaetus morphnoides*) – Vulnerable

The little eagle is found across the Australian mainland, except in the most densely forested parts of the Dividing Range escarpment. It exists as a single population throughout NSW. This species occupies open eucalypt forests, woodlands, and open woodlands, as well as sheoak or acacia woodlands and riparian woodlands in interior NSW. Little eagles nest in tall living trees within remnant patches, where pairs build large stick nests during winter (OEH 2021).

There is one record of this species within 10 km of the Proposed Activity Area, and there is a moderate likelihood of occurrence based on the presence of potential habitat (open eucalyptus woodland) found in the Proposed Activity Area, making up approximately 18.62 ha.

Spotted harrier (*Circus assimilis*)

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. The spotted harrier 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 (OEH 2025).

There is no record of this species within 10 km database search of the Proposed Activity Area. This species is considered to have a moderate likelihood of occurrence based on the presence of potential habitat (open eucalyptus woodland and native and exotic grassland) found in the Proposed Activity Area, making up approximately 49.62 ha.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
The Proposed Activity will result in the removal of approximately 18.62 ha of native vegetation, and 31.41 of exotic grassland, which forms potential foraging and breeding habitat for these species (open eucalyptus woodland). Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The bushland immediately adjacent to the Proposed Activity Area is extensive and likely to provide a variety of habitat features. No breeding habitat (stick nests) has been identified within the Proposed Activity Area. Any potential breeding habitat present within the Proposed Activity Area is likely to also be found within the continuous habitat adjacent to the Proposed Activity Area. It is unlikely that the Proposed Activity will affect exchange of genes between individuals or populations of species that occur in the general area, given the relatively narrow Proposed Activity Area. The loss of native vegetation associated with the Proposed Activity Area will not result in a significant reduction in foraging or breeding habitat, and the project is not likely to have an adverse effect on the life cycle of these species such that a viable local population of these species is likely to be placed at risk of extinction.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
Not applicable.
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
Not applicable.
In relation to the habitat of a threatened species or ecological community:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
The Proposed Activity will require removal of approximately 49.62 ha of potential habitat for these species associated with PCT 393, PCT 3431, PCT3767, PCT 4089, along with native plantation, and exotic grassland which together form potential foraging habitat for these species. The Proposed Activity Area is likely to form part of a larger territory for these species.
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
Habitat for these threatened raptor species is currently fragmented within the Proposed Activity Area. The additional removal of up to 49.62 ha will only marginally increase fragmentation in the locality. In addition, the narrow (generally 30 m wide except for 520 m of 36.18 m width) easement will retain where possible a ground and shrub layer and were removed as part of the Proposed Activity, it is intended that vegetation will naturally re-establish in the lower strata where permanent structures are not present post construction. The retention of the groundlayer would still act as a movement corridor for these highly mobile species.
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,
Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The occurrence of habitat for these vulnerable species within the Proposed Activity Area is not any more important to the survival of these species than any other location.
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)
No declared areas of outstanding biodiversity value are located in, or near, the Proposed Activity Area. The Proposed Activity will not impact any declared areas of outstanding biodiversity value.
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.
One key threatening process is relevant to the Proposed Activity, being: • Clearing of native vegetation. Given that a total of approximately 49.62 ha of potential habitat will be removed, the implications of these KTPs are not considered to be significant.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
Conclusion
The Proposed Activity includes the removal of about 49.62 ha that provides habitat for the black falcon, spotted harrier and little eagle. Removal of potential habitat will negligibly increase the level of fragmentation of habitat for these species and negligibly decrease the area of habitat of the species. One key threatening process is relevant, though are negligible (clearing of vegetation). The Proposed Activity is unlikely to result in a significant impact on the black falcon, spotted harrier and the little eagle, all listed as vulnerable under the BC Act.

Threatened Arboreal Mammals

Brush-tailed phascogale (*Phascogale tapoatafa*) – Vulnerable

Most of the records for this species occur east of the Great Dividing Range although there are occasional records west of the divide. This species prefers dry sclerophyll open forest with sparse groundcover of herbs, grasses, shrubs or leaf litter. It also inhabits heath, swamps, rainforest and wet sclerophyll forest (OEH 2025).

This species is an agile climber, foraging preferentially in rough barked trees of 25 cm DBH or greater. The brush-tailed phascogale typically nests and shelter in tree hollows with entrances 2.5 – 4 cm wide and use many different hollows over a short time span (OEH 2025).

There is one record of this species within 10 km database search of the Proposed Activity Area, and there is a moderate likelihood of occurrence based on the presence of potential habitat (box-ironbark woodlands, and hollows, associated with PCT 393, PCT 3431 and PCT 3767) in the Proposed Activity Area, which make up approximately 12.39 ha.

Squirrel glider (*Petaurus norfolcensis*) – Vulnerable

The species is widely but sparsely distributed in eastern Australia, ranging from northern Queensland to western Victoria. It inhabits mature or old-growth Box, Box-Ironbark woodlands, and river red gum forests west of the Great Dividing Range, as well as blackbutt-bloodwood forests with a heathy understorey in coastal areas. Preferring mixed-species stands with a shrub or Acacia midstorey, this species lives in family groups consisting of a single adult male, one or more adult females, and their offspring. It requires abundant tree hollows for refuge and nesting sites (OEH 2024).

There is one record of this species within 10 km of the Proposed Activity Area, and there is a moderate likelihood of occurrence based on the presence of potential habitat (box-ironbark woodlands, river red gum forests, and hollows, associated with PCT 393, PCT 3431 and PCT 4089) in the Proposed Activity Area, which make up approximately 8.03 ha.

Koala (*Phascolarctos cinereus*) – Endangered

The koala has a fragmented distribution throughout eastern Australia, from north-east Queensland to the Eyre Peninsula in South Australia. In NSW, koala populations are found on the central and north coasts, southern highlands, southern and northern tablelands, Blue Mountains, and southern coastal forests, with smaller populations on the plains west of the Great Dividing Range. Koalas inhabit eucalypt woodlands and forests, feeding on the foliage of over 70 eucalypt species and 30 non-eucalypt species (OEH 2024).

There is one record of this species within 10 km database search of the Proposed Activity Area, and there is a moderate likelihood of occurrence based on the presence of potential habitat (eucalyptus woodlands associated with PCT 393, PCT 4089) in the Proposed Activity Area, which make up approximately 6.41 ha.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
The Proposed Activity will result in the removal of approximately 12.39 ha of native vegetation, which forms potential foraging and breeding habitat for these species. Any potential breeding habitat present within the Proposed Activity Area is likely to also be found within the continuous habitat adjacent to the Proposed Activity Area. It is unlikely that this project will affect exchange of genes between individuals or populations of species that occur in the general area, given the relatively narrow Proposed Activity Area. **Brush-tailed phascogale** Potential habitat for this species in the Proposed Activity Area includes rough-barked eucalypts, and hollows, which can be found in the woodland and forested areas that make up approximately 12.39 ha. **Squirrel glider** There is suitable habitat in the locality for this species (box-ironbark woodlands and hollows) in the Proposed Activity Area. Potential habitat for this species in the Proposed Activity Area includes areas which make up approximately 8.03 ha. **Koala** Potential habitat for this species in the Proposed Activity Area includes Eucalyptus woodlands, which make up approximately 6.41 ha. The loss of native vegetation associated with the Proposed Activity Area will not result in a significant reduction in foraging or breeding habitat, and the Proposed Activity is not likely to have an adverse effect on the life cycle of these species such that a viable local population of these species is likely to be placed at risk of extinction.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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
Not applicable.
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
Not applicable.
In relation to the habitat of a threatened species or ecological community:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
The Proposed Activity will require removal up to 12.39 ha of potential habitat for these species associated with PCT 393, PCT 3431, PCT3767, PCT 4089. The Proposed Activity Area is likely to form part of a larger territory for these species.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

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

Habitat for these threatened arboreal mammal species is currently fragmented within the Proposed Activity Area. The additional removal of up to 12.39 ha will only marginally increase fragmentation in the locality.

In addition, the narrow (generally 30 m wide except for 520 m of 36.18 m width) easement will retain where possible a ground and shrub layer and were removed as part of the Proposed Activity, it is intended that vegetation will naturally re-establish in the lower strata where permanent structures are not present post construction. The retention of the groundlayer would still provide a movement corridor for these species between patches of native vegetation.

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,

Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The bushland immediately adjacent to the Proposed Activity Area is extensive and likely to provide a variety of habitat features, such as hollow bearing trees, stags, dense shrubs and mature trees.

The occurrence of habitat for these species within the Proposed Activity Area is not any more important to the survival of the species than any other location.

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)

No declared areas of outstanding biodiversity value are located in, or near, the Proposed Activity Area. The Proposed Activity will not impact any declared areas of outstanding biodiversity value.

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.

Two key threatening process are relevant to the Proposed Activity, being:

- Clearing of native vegetation
- Loss of hollow bearing trees

Given that a total of approximately 12.39 ha of potential habitat will be removed, and hollow bearing trees would be avoided where possible, the implications of these KTPs are not considered to be significant.

Conclusion

The Proposed Activity includes the removal of approximately 12.39 ha that provides habitat for threatened arboreal mammals. Removal of potential habitat will negligibly increase the level of fragmentation of habitat for these species and negligibly decrease the area of habitat of the species. Two key threatening processes are relevant, though are negligible (clearing of vegetation, loss of hollow bearing trees).

The Proposed Activity is unlikely to result in a significant impact on the brush-tailed phascogale, squirrel glider and koala.

Threatened Terrestrial Mammals

Spotted-tailed quoll (*Dasyurus maculatus*) – Vulnerable

The spotted-tail quoll's range has contracted significantly since European settlement and it is now found in eastern NSW, eastern Victoria, south-east and north-eastern Queensland, and Tasmania. It inhabits a variety of habitats, including rainforest, open forest, woodland, coastal heath, and inland riparian forest, from the sub-alpine zone to the coastline. Spotted-tailed quolls use hollow-bearing trees, fallen logs, other animal burrows, small caves, and rock outcrops as den sites (OEH 2024).

There is a moderate likelihood of occurrence based on the presence of potential habitat including a rocky escarpment and associations with all PCTs, resulting in a total of approximately 18.62 ha of suitable habitat within the 10 km buffer of the Proposed Activity Area. Additionally, five records of the species occur within the 10 km buffer of the Proposed Activity Area.

Brush-tailed rock-wallaby (*Petrogale penicillata*) – Endangered

The brush-tailed rock-wallaby's range extends from south-east Queensland to the Grampians in western Victoria, roughly following the line of the Great Dividing Range. 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. This species occupies rocky escarpments, outcrops, and cliffs with a preference for complex structures with fissures, caves, and ledges, often facing north (2024).

While there are no records of this species within 10 km of the Proposed Activity Area, there are recent records from 20 km to the south-west. There is a moderate likelihood of occurrence based on the presence of suitable distinct habitat in the western end of Proposed Activity Area (rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges). This species is also associated with PCT 393, PCT 3431, and PCT 3767, resulting in a total of approximately 14.08 ha of suitable habitat within the 10 km buffer of the Proposed Activity Area.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
The Proposed Activity will result in the removal of up to 18.62 ha of potential habitat for the spotted-tailed quoll and 14.08 ha of potential habitat for the brush-tailed rock-wallaby , of which the escarpment and rocky areas form potential foraging and breeding habitat for these species. No breeding habitat has been identified within the Proposed Activity Area. Any potential breeding habitat present within the Proposed Activity Area is likely to also be found within the continuous habitat adjacent to the Proposed Activity Area. It is unlikely that this project will affect exchange of genes between individuals or populations of species that occur in the general area, given the relatively narrow (generally 30 m wide except for 520 m of 36.18 m width) Proposed Activity Area. Suitable habitat for the spotted-tailed quoll within the Proposed Activity Area includes rocky escarpments and all PCTs, resulting in a total of approximately 18.62 ha of suitable habitat within the Proposed Activity Area. Suitable habitat for the brush-tailed rock-wallaby species can be found in the western end of Proposed Activity Area which includes features such as rocky escarpments, outcrops and cliffs.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
This species is associated with PCT 393, PCT 3431, and PCT 3767, resulting in up to 14.08 ha of suitable habitat within the Proposed Activity Area. The loss of native vegetation associated with the Proposed Activity Area will not result in a significant reduction in foraging or breeding habitat, and the Proposed Activity is not likely to have an adverse effect on the life cycle of these species such that a viable local population of these species is likely to be placed at risk of extinction.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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
Not applicable.
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
Not applicable.
In relation to the habitat of a threatened species or ecological community:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
The Proposed Activity will require removal of up to approximately 18.62 ha of suitable habitat for the spotted-tailed quoll and 14.08 ha of suitable habitat for the brush-tailed rock-wallaby. The Proposed Activity Area is likely to form part of a larger territory for these species.
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
Habitat for these species is currently fragmented within the Proposed Activity Area. The additional removal of up to 18.62 ha will only marginally increase fragmentation in the locality. In addition, the narrow (generally 30 m wide except for 520 m of 36.18 m width) easement will retain where possible a ground and shrub layer and were removed as part of the Proposed Activity, it is intended that vegetation will naturally re-establish in the lower strata where permanent structures are not present post construction. The retention of the groundlayer would still provide a movement corridor for these species between patches of native vegetation.
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,
Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The bushland immediately adjacent to the Proposed Activity Area is extensive and likely to provide a variety of habitat features suitable for the spotted-tailed quoll and brush-tailed rock-wallaby. The occurrence of habitat for these species within the Proposed Activity Area is not any more important to the survival of the species than any other location.
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)

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
No declared areas of outstanding biodiversity value are located in, or near, the Proposed Activity Area. The Proposed Activity Area will not impact any declared areas of outstanding biodiversity value.
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.
Two key threatening process are relevant to the Proposed Activity, being: • Clearing of native vegetation • Bushrock removal Given that a total of up to approximately 18.62 ha of potential habitat will be removed, the implications of these KTPs are not considered to be significant.
Conclusion
The Proposed Activity includes the removal of up to approximately 18.62ha that provides habitat for the spotted-tailed quoll and brush-tailed rock-wallaby. Removal of potential habitat will negligibly increase the level of fragmentation of habitat for these species and negligibly decrease the area of habitat of the species. Two key threatening processes are relevant, though are negligible (clearing of vegetation, bushrock removal). The Proposed Activity is unlikely to result in a significant impact the spotted-tailed quoll and brush-tailed rock-wallaby.

Threatened Bats – Hollow-dependent

Eastern false pipistrelle (*Falsistrellus tasmaniensis*) – Vulnerable

The eastern false pipistrelle is found along the south-east coast and ranges of Australia, extending from southern Queensland to Victoria and Tasmania. This species prefers moist habitats with trees taller than 20 m. It typically roosts in eucalypt hollows but can also be found under loose bark on trees or in buildings (OEH 2015).

The eastern false pipistrelle has been recorded once within the 10 km buffer of the Proposed Activity Area. This species is associated with PCT 3431, within the Proposed Activity Area, making up approximately 3.32 ha of suitable habitat.

Southern myotis (*Myotis macropus*) – Vulnerable

The southern myotis is found along the coastal band from north-west Australia, across the top-end, and down to western Victoria. It is seldom seen more than 100 km inland, except along major rivers. This species typically roosts in groups of 10 to 15 near water, utilising caves, mine shafts, hollow-bearing trees, storm water channels, buildings, wharves, bridges, and dense foliage. They forage over streams and pools.

The southern myotis has been recorded twice within the 10 km buffer of the Proposed Activity Area. This species is associated with PCT 3431, PCT 393, PCT 3767 and PCT 4089 within the Proposed Activity Area, making up approximately 15.83 ha of suitable habitat

Yellow-bellied sheathtail-bat (*Saccolaimus flaviventris*) – Vulnerable

The yellow-bellied sheathtail-bat is found across northern and eastern Australia. It is a rare visitor in late summer and autumn in the southern parts of its range, including most of Victoria, southwestern New South Wales, and adjacent South Australia. There are also scattered records on the New England Tablelands and North West Slopes. The species utilises a variety of habitats, both with and without trees, and appears to defend an aerial territory (OEH 2025).

The yellow-bellied sheathtail-bat has been recorded once within the 10 km buffer of the Proposed Activity Area. This species is associated with PCT 3431 and PCT 393 within the Proposed Activity Area, making up approximately 8.43 ha of suitable habitat.

Greater broad-nosed bat (*Scoteanax rueppellii*) – Vulnerable

The greater broad-nosed bat is primarily found in the gullies and river systems of the Great Dividing Range, from northeastern Victoria to the Atherton Tableland, extending to the coast in many areas. In New South Wales, it is common on the New England Tablelands but not above 500 m in altitude. This bat species inhabits various environments, including woodlands, moist and dry eucalypt forests, and rainforests, with a preference for tall wet forests. While it typically roosts in tree hollows, it can also be found in buildings (OEH 2025).

Greater broad-nosed bat has been recorded once within the 10 km buffer of the Proposed Activity Area. This species is only associated with PCT 3431 within the Proposed Activity Area, making up approximately 3.32 ha of suitable habitat

Corben's long-eared bat (*Nyctophilus corbeni*) – Vulnerable

Corben's long-eared bat is distributed throughout the Murray-Darling Basin, with the Pilliga Scrub region being a distinct stronghold. This species inhabits a variety of vegetation types, including mallee, bulloke, and box eucalypt-dominated communities, but is more common in box/ironbark/cypress-pine vegetation along the western slopes and plains of NSW and southern Queensland. It roosts in tree hollows, crevices, and under loose bark (OEH 2025).

Corben's long-eared bat has been recorded once within the 10 km buffer of the Proposed Activity Area. This species is only associated with PCT 393 within the Proposed Activity Area, making up approximately 5.11 ha of suitable habitat.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
The Proposed Activity will result in the removal of up to 15.83 ha of native vegetation, which forms potential foraging and roosting habitat for the five hollow-dependent bat species. The Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. A total of 27 hollow bearing trees representing suitable habitat for these species were recorded within the Proposed Activity Area. Extensive areas of similar or higher quality foraging and roosting habitat for these species occur in the surrounding locality and region, some of which are protected. The western section of the Proposed Activity is within a contiguous patch of better-quality vegetation spanning the area around Owens Gap as well Towarri NP and Wingen NR to the north (6 km and 13 km away,

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
respectively) and Scone Mountain NP to the east (11 km away), all of which would provide better quality habitat. Therefore, the small loss of suitable habitat and potential loss of up to 27 hollow bearing trees for these species within the Proposed Activity Area will not result in a significant reduction in foraging or roosting habitat, and the Proposed Activity is not likely to have an adverse effect on the life cycle of these species such that a viable local population of these species is likely to be placed at risk of extinction.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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
Not applicable.
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
Not applicable.
In relation to the habitat of a threatened species or ecological community:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
The Proposed Activity will result in the removal of up to 15.83 ha of native vegetation, which forms potential foraging and roosting habitat for these species. The Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. Currently 27 hollow bearing trees are present within the Proposed Activity Area. The Proposed Activity is considered unlikely to modify, remove or isolate or decrease the availability or quality of habitat to the extent that this species is likely to decline.
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
Habitat for these threatened hollow-dependent bat species is currently fragmented within the Proposed Activity Area. The additional removal of up to 15.83 ha will only marginally increase fragmentation in the locality. In addition, the narrow (generally 30 m wide except for 520 m of 36.18 m width) easement will retain where possible a ground and shrub layer and were removed as part of the Proposed Activity, it is intended that vegetation will naturally re-establish in the lower strata where permanent structures are not present post construction. The retention of the groundlayer would still provide a movement corridor for these species between patches of native vegetation.
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,
Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The bushland immediately adjacent to the Proposed Activity Area is extensive and likely to provide a variety of habitat features, such as hollow bearing trees, stags, dense shrubs and mature trees.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
The occurrence of suitable habitat for these hollow-dependent bat species within the Proposed Activity Area is not any more important to the survival of the species than any other location.
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)
No declared areas of outstanding biodiversity value are located in, or near, the Proposed Activity Area. The Proposed Activity will not impact any declared areas of outstanding biodiversity value.
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.
Two key threatening process are relevant to the Proposed Activity, being: • Clearing of native vegetation • Loss of hollow bearing trees. Given that up to 15.83 ha of potential habitat will be removed, and that hollow bearing trees will be avoided, where possible, the implications of these KTPs are not considered to be significant.
Conclusion
The Proposed Activity will remove up to 15.83 ha of suitable foraging, roosting and breeding habitat. There is extensive and higher quality habitat for these species present within the surrounding area. Thus, given the small scale of the Proposed Activity and availability of larger more contiguous patches habitat within the vicinity of the Proposed Activity Area, it is unlikely that the Proposed Activity will significantly impact these hollow-dependent bat species.

Threatened Bats – Cave-dependent

Large-eared pied Bat (*Chalinolobus dwyeri*) – Endangered

The large-eared pied bat is 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. The species roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the fairy martin (*Petrochelidon ariel*), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. It is found in well-timbered areas containing gullies (OEH 2025).

The large-eared pied bat has been recorded seven times within the 10 km database search of the Proposed Activity Area. This species is associated with PCT 393, PCT 3431 and PCT 3767 within the Proposed Activity Area, making up approximately 14.08 ha of suitable habitat for the species.

Large bent-winged bat (*Miniopterus orianae oceanensis*) – Vulnerable

The large bent-winged bat is found along the east and north-west coasts of Australia. This species primarily roosts in caves but also makes use of derelict mines, storm-water tunnels, buildings, and other man-made structures. They form distinct populations centred around maternity caves, which have specific temperature and humidity requirements. Outside of the breeding season, these bats

disperse within a range of about 300 km from the maternity caves. Large bent-winged bats hunt in forested areas, catching moths and other flying insects above the treetops.

There are four records of this species within the 10 km buffer of the Proposed Activity Area. This species is associated with PCT 393 and PCT 3431, resulting in approximately 8.43 ha of suitable habitat for this species within the Proposed Activity Area.

Eastern cave bat (*Vespadelus troughtoni*) – Vulnerable

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, with a single record from southern NSW, east of the ACT. This cave-roosting species is usually found in dry open forest and woodland near cliffs or rocky overhangs, and has been recorded roosting in disused mine workings, occasionally in colonies of up to 500 individuals (OEH 2024).

There are six records of this species within the 10 km buffer of the Proposed Activity Area. This species is associated with PCT 393, PCT 3431, PCT 3767 within the Proposed Activity Area, resulting in approximately 14.08 ha of suitable habitat for this species.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
The Proposed Activity will result in the removal of up to 14.08 ha of native vegetation, which forms potential foraging habitat for the three cave-dependent bat species. The Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. Extensive areas of similar or higher quality foraging and roosting habitat for these species occur in the surrounding locality and region, some of which are protected. The western section of the Proposed Activity is within a contiguous patch of better-quality vegetation spanning the area around Owens Gap as well Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away), all of which would provide better quality habitat. Therefore, the small loss of suitable habitat for these species within the Proposed Activity Area will not result in a significant reduction in foraging or roosting habitat, and the Proposed Activity is not likely to have an adverse effect on the life cycle of these species such that a viable local population of these species is likely to be placed at risk of extinction.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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
Not applicable.
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
Not applicable.
In relation to the habitat of a threatened species or ecological community:

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
The Proposed Activity will result in the removal of up to 14.08 ha of native vegetation, which forms potential foraging habitat for these species. The Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. The Proposed Activity is considered unlikely to modify, remove or isolate or decrease the availability or quality of habitat to the extent that this species is likely to decline.
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
Habitat for these threatened cave-dependent bats is currently fragmented within the Proposed Activity Area. The additional removal of up to 14.08 ha will only marginally increase fragmentation in the locality. In addition, the narrow (generally 30 m wide except for 520 m of 36.18 m width) easement will retain where possible a ground and shrub layer and were removed as part of the Proposed Activity, it is intended that vegetation will naturally re-establish in the lower strata where permanent structures are not present post construction. The retention of the groundlayer would still provide a movement corridor for these species between patches of native vegetation.
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,
Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The bushland immediately adjacent to the Proposed Activity Area is extensive and likely to provide a variety of habitat features, such as hollow bearing trees, stags, dense shrubs and mature trees. The occurrence of habitat for these species within the Proposed Activity Area is not any more important to the survival of these species than any other location.
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)
No declared areas of outstanding biodiversity value are located in, or near, the Proposed Activity Area. The Proposed Activity will not impact any declared areas of outstanding biodiversity value.
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.
One key threatening process are relevant to the Proposed Activity, being: • Clearing of native vegetation Given that up to 14.08 ha of potential habitat will be removed, the implications of this KTP is not considered to be significant.
Conclusion
The Proposed Activity will remove up to 14.08 ha of suitable foraging habitat for these cave-dependent bat species. There is extensive and higher quality habitat for these species present within the surrounding area. Thus, given the small scale of the Proposed Activity and availability of

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
larger more contiguous patches habitat within the vicinity of the Proposed Activity Area, it is unlikely that the Proposed Activity will significantly impact these species.

Grey-headed flying-fox (*Pteropus poliocephalus*) – Vulnerable

The grey-headed flying-fox is generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. This species inhabits subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths, swamps, urban gardens, and cultivated fruit crops. Roosting camps are typically located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy (OEH 2020).

There is a moderate likelihood of occurrence due to potential foraging habitat located within the Proposed Activity Area, and because the Proposed Activity Area is located approximately 25 km north of the nationally important grey-headed flying-fox camp at Muswellbrook. The grey-headed flying-fox has been recorded 16 times within the 10 km buffer of the Proposed Activity Area. This species is associated with PCT 393, PCT 3431, PCT 3767, and PCT 4089 within the Proposed Activity Area, making up approximately 16.47 ha of suitable habitat for the species.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
The Proposed Activity will result in the removal of up to approximately 16.47 ha of native vegetation, which forms potential foraging and roosting habitat for the grey-headed flying-fox. The Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. Extensive areas of similar or higher quality foraging and roosting habitat for these species occur in the surrounding locality and region, some of which are protected. The western section of the Proposed Activity is within a contiguous patch of better-quality vegetation spanning the area around Owens Gap as well Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away), all of which would provide better quality habitat. The closest nationally important flying-fox camp is located in Muswellbrook, approximately 25 km south of the Proposed Activity Area. Therefore, the small loss of suitable habitat for this species within the Proposed Activity Area will not result in a significant reduction in foraging habitat, and the Proposed Activity is not likely to have an adverse effect on the life cycle of this species such that a viable local population of this species is likely to be placed at risk of extinction.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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
Not applicable.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
Not applicable.
In relation to the habitat of a threatened species or ecological community:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
The Proposed Activity will result in the removal of up to approximately 16.47 ha of native vegetation, which forms potential foraging habitat for the grey-headed flying-fox. The Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. The Proposed Activity is considered unlikely to modify, remove or isolate or decrease the availability or quality of habitat to the extent that this species is likely to decline.
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
Potential habitat within the Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. Activity in the potential suitable habitat is likely to be limited due to the nature of the skeletal soils resulting in fewer larger trees requiring clearing, and the limited width of clearance required. The Proposed Activity Area does not intersect corridors between state forest nor national parks in the region. Thus, given the already fragmented nature of the Proposed Activity Area, the Proposed Activity is considered unlikely to fragment an existing population of this species into two or more populations.
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,
The Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. Activity in the potential suitable habitat is likely to be limited due to the nature of the skeletal soils resulting in fewer larger trees requiring clearing, and the limited width of clearance required. Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The bushland immediately adjacent to the Proposed Activity Area is extensive and likely to provide a variety of habitat features including potential foraging habitat for the grey-headed flying-fox. The occurrence of suitable habitat for this vulnerable species within the Proposed Activity Area is not any more important to the survival of the species than any other location.
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)
No declared areas of outstanding biodiversity value are located in, or near, the Proposed Activity Area. The Proposed Activity will not impact any declared areas of outstanding biodiversity value.
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.
One key threatening process are relevant to the Proposed Activity, being: • Clearing of native vegetation.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
Given that up to 16.47 ha of potential habitat will be removed, the implications of this KTP is not considered to be significant.
Conclusion
The Proposed Activity will remove 16.47 ha of suitable grey-headed flying-fox habitat. There is extensive and higher quality habitat for these species present within the surrounding area. Thus, given the small scale of the Proposed Activity and availability of vast and superior habitat within the vicinity of the Proposed Activity Area, it is unlikely that the Proposed Activity will significantly impact this species.

Threatened reptiles

Pink-tailed Legless Lizard (*Aprasia parapulchella*) – Vulnerable

The pink-tailed legless lizard is primarily known from the Central and Southern Tablelands and the South Western Slopes, with a concentration of populations in the Canberra/Queanbeyan region. Other populations have been recorded near Cooma, Yass, Bathurst, Albury, and West Wyalong. This species inhabits sloping, open woodland areas with predominantly native grassy ground layers, particularly those dominated by Kangaroo Grass (OEH 2024).

There is a moderate likelihood of occurrence due to potential habitat located in the Proposed Activity Area up the escarpment toward Owens Gap (rocky areas).

There are no associated PCTs for this species within the Proposed Activity Area, however given the suitable rocky habitat within PCT 393 and PCT 3767, these areas within the Proposed Activity Area are considered as potential habitat for this species. Therefore, the Proposed Activity is anticipated to remove approximately 10.77 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area.

There is currently no definition of an important population for this species, nor is there currently a definition of habitat critical to the survival of this species.

Hunter Valley Delma (*Delma vescolineata*) – Endangered

The Hunter Valley delma is endemic to NSW and is currently known to occur in the Hunter Valley, from Maitland to Muswellbrook, and on the Liverpool Plains. This species inhabits grassy woodlands and open forests, often found in areas with a mix of native grasses and shrubs, and also includes exotic dominated non-woody groundcover without enough native species to assign a PCT. The species is often found in sparce or degraded open areas of non-native vegetation. It relies on ground cover and leaf litter for shelter and foraging, feeding on small invertebrates (OEH 2024).

There is a moderate likelihood of occurrence due to potential habitat located in the Proposed Activity Area up the escarpment toward Owens Gap (rocky areas).

The Proposed Activity is anticipated to remove approximately 41.18 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area.

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
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
Pink-tailed legless lizard: As this species is associated with PCT 393 and PCT 3767, the Proposed Activity is anticipated to remove approximately 41.18 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area. Therefore, it is unlikely the Proposed Activity will lead to a long-term decrease in the size of a population of this species. **Hunter Valley delma:** The Proposed Activity is anticipated to remove approximately 41.18 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area. Therefore, it is unlikely the Proposed Activity will lead to a long-term decrease in the size of a population of this species.
In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:
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
Not applicable.
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
Not applicable.
In relation to the habitat of a threatened species or ecological community:
The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
Pink-tailed legless lizard: As this species is associated with PCT 393 and PCT 3767, the Proposed Activity is anticipated to remove approximately 10.77 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area. The Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). **Hunter Valley delma:** The Proposed Activity is anticipated to remove approximately 41.18 ha of suitable habitat for this species. There are no records of this species within the 10km buffer of the Proposed Activity Area. The Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away).

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

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

Pink-tailed legless lizard:

Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri National Park (NP) and Wingen Nature Reserve (NR) to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The bushland immediately adjacent to the Proposed Activity Area is extensive and likely to provide habitat features relevant to this species, such as rocky areas and the presence of bush rock.

As this species is associated with rocky habitats recorded in PCT 393 and PCT 3767, the Proposed Activity is anticipated to remove approximately 10.77 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area.

The Proposed Activity is considered unlikely to fragment an existing important population into two or more populations.

Hunter Valley delma:

Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The bushland and grassland immediately adjacent to the Proposed Activity Area is extensive and likely to provide habitat features relevant to this species.

The Proposed Activity is anticipated to remove approximately 41.18 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area.

The Proposed Activity is considered unlikely to fragment an existing important population into two or more populations.

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,

Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The native vegetation immediately adjacent to the Proposed Activity Area is extensive and likely to provide habitat features relevant to these species, such as rocky areas and the presence of bush rock.

The occurrence of habitat for these species within the Proposed Activity Area is not any more important to the survival of the species than any other location.

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)

No declared areas of outstanding biodiversity value are located in, or near, the Proposed Activity Area. The project will not impact any declared areas of outstanding biodiversity value.

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.

Two key threatening process are relevant to the Proposed Activity, being:

- Clearing of native vegetation
- Bushrock removal

The following is to be considered for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
Given that marginal habitat loss being a total of approximately 10.77 ha of suitable habitat for pink-tailed legless lizard and approximately 41.18 ha of potential habitat for the Hunter Valley delma will be removed, the implications of these KTPs are unlikely to be significant.
Conclusion
The Proposed Activity will remove 10.77 ha of suitable pink-tailed legless lizard habitat and 41.18 ha of suitable habitat for Hunter Valley delma. There is extensive and higher quality habitat for these species present within the surrounding area. Thus, given the small scall of the proposed impact and availability of vast and superior habitat within the vicinity of the Proposed Activity Area, it is unlikely that the Proposed Activity will significantly impact these species.

Appendix C

Assessment of Significance Commonwealth Environment Protection Biodiversity Conservation Act 1999

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Appendix C: Assessment of Significance under the Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act requires an Assessment of Significance relating to the potential impacts of an Action on listed Matters of National Environmental Significance (MNES). This assessment has been conducted in accordance with the Significant Impact Guidelines 1.1 (DoE 2013), based on the Project Area as defined in the REF.

In keeping with the Commonwealth's Significant Impact Guidelines:

- A population means:
  - a geographically distinct regional population, or collection of local populations; or
  - a regional population, or collection of local populations, that occurs within a particular bioregion.
- An important population means:
  - key source populations either for breeding or dispersal; or
  - populations that are necessary for maintaining genetic diversity; or
  - populations that are near the limit of the species range.

Assessments of Significance under the EPBC Act have been prepared for the following threatened species:

Threatened Ecological Communities

- Central Hunter Valley eucalypt forest and woodland – Critically Endangered Ecological Community

Threatened Flora

- A leek-orchid (*Prasophyllum* sp. Wybong) – Critically Endangered

Threatened Woodland Birds

- Regent Honeyeater (*Anthochaera phrygia*) – Critically Endangered
- Swift Parrot (*Lathamus discolor*) – Critically Endangered
- Southern Whiteface (*Aphelocephala leucopsis*) – Vulnerable
- South-eastern Glossy Black-Cockatoo (*Calyptorhynchus lathami lathami*) – Vulnerable
- Brown Treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*) – Vulnerable
- Diamond Firetail (*Stagonopleura guttata*) – Vulnerable

Threatened Arboreal Mammals

- Koala (Phascolarctos cinereus) – Endangered

Threatened Terrestrial Mammals

- Spotted-tailed Quoll (*Dasyurus maculatus*) – Endangered
- Brush-tailed Rock-wallaby (*Petrogale penicillata*) – Vulnerable

Threatened Bats

- Large-eared Pied-bat (*Chalinolobus dwyeri*) – Endangered
- Corben's Long-eared Bat (*Nyctophilus corbeni*) – Vulnerable
- Grey-headed Flying-fox (*Pteropus poliocephalus*) – Vulnerable

Threatened Reptiles

- Pink-tailed Legless Lizard (*Aprasia parapulchella*) – Vulnerable
- Hunter Valley Delma (*Delma vescolineata*) – Endangered

EPBC Act Assessment of Significance – Central Hunter Valley Eucalypt Forest and Woodland – CEEC

Only the woodland variant of PCT 3431 is considered to be associated with the Central Hunter Valley Eucalypt Forest and Woodland CEEC. It is estimated up to 1.62 ha of the woodland variant of PCT 3431, that conforms to the Central Hunter Valley Eucalypt Forest and Woodland CEEC will be removed as part of the Proposed Activity.

An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:
Reduce the extent of an ecological community;
An analysis of vegetation within a 10 km buffer of the Proposed Activity Area was undertaken using the State Vegetation Type Map (SVTM). The analysis identified approximately 6,997 ha of mapped PCTs that are associated with the Central Hunter Valley Eucalypt Forest and Woodland (CEEC). It is estimated up to 1,62 ha of PCT 3431, that conforms to the CEEC will be removed as part of the Proposed Activity. This will equate to the loss of 0.04% of the PCT and associated CEEC within 10km of the Proposed Activity Area and 0.007% of the CEEC's extent (37,000 ha) outlined in the Conservation Advice (TSSC 2015a) for the threatened ecological community. The permanent loss of up to 1.62 ha of the CEEC as a result of the Proposed Activity represents a negligible reduction in the estimated current extent of the community across its range. The impact of the Proposed Activity forms a reduction in its extent across the range of the CEEC.
Fragment or increase fragmentation of an ecological community;
The CEEC is highly fragmented and with a very restricted distribution, as indicated by an estimated median patch size of 1.7 ha. Almost all (86%) of the remnants are highly fragmented, occurring in small, isolated patches, are mostly less than 10 ha in size and only 2% of patches are larger than 100 ha in size (TSSC 2015). The 1.62 ha of CEEC within the Proposed Activity Area is highly fragmented as a result of historic agricultural land practices. The Proposed Activity will result in a minor increase in the fragmentation of the community in the surrounding landscape, however given the current extent of approximately 37,000 ha of the CEEC (TSSC 2015a), the level of increase in fragmentation is considered to be negligible across its range.
Adversely affect habitat critical to the survival of an ecological community;
The conservation advice for the Central Hunter Valley Eucalypt Forest and Woodland CEEC recommends that areas which meet the minimum moderate quality condition class or are within the buffer zone (recommended buffer is 30 m), as being areas critical to the survival of the community.

An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:
As a precautionary approach was taken in the assessment of the CEEC, the 1.62 ha of PCT 3431 was considered to meet the moderate condition threshold for the CEEC. As this vegetation is highly disturbed and fragmented. It is estimated up to 1.62 ha of fragmented patches of PCT 3431, that conforms to the CEEC will be removed as part of the Proposed Activity. This will equate to the loss of 0.04% of the PCT and associated CEEC within 10km of the Proposed Activity Area and 0.007% of the CEEC's extent (37,000 ha) outlined in the Conservation Advice (TSSC 2015a) for the threatened ecological community. Thus, the Proposed Activity is unlikely to adversely affect habitat critical to the survival of this CEEC.
Modify or destroy abiotic factors necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns;
While up to 1.62 ha of the CEEC will be removed from the Proposed Activity Area, the Proposed Activity is not expected to adversely affect retained areas of the CEEC occurring outside the impact area as the Proposed Activity will be designed to avoid offsite impacts. In addition, the Proposed Activity will retain and re-establish the ground layer vegetation in areas where permanent impacts post construction (tracks and towers) are not located. This will provide opportunity to limit impacts to abiotic factors such as the soil profile and limit any modification to the groundwater levels and surface water drainage patterns. The Proposed Activity is unlikely to modify or destroy the abiotic factors that affect the survival of the Central Hunter Valley Eucalypt Forest and Woodland CEEC in surrounding areas.
Cause substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species; or
The CEEC is an open forest or woodland, typically dominated by eucalypt species with mid-layer of shrubs and a ground layer of grasses, forbs and small shrubs. The CEEC is characterised by one or more of spotted gum (*Corymbia maculata*), narrow-leaved ironbark (*Eucalyptus crebra*), slaty gum (*Eucalyptus dawsonii*) or grey box (*Eucalyptus moluccana*) (TSSC 2015a). Vegetative components of the ecological community are important as they provide food and habitat for faunal components of the ecological community. Specific data related to the role of functionally important species such as burrowing mammals and nomadic nectarivores in this CEEC are not available (TSSC 2015a). The Proposed Activity will result in removal of up to 1.62 ha of the Central Hunter Valley Eucalypt Forest and Woodland CEEC within the Proposed Activity Area. This reduction in the extent of the CEEC is not expected to result in a substantial change in native species composition in the wider locality such that the composition of species in adjacent (or other more distant) areas of CEEC is affected.
Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to: • assisting invasive species that are harmful to the listed ecological community to become established, or • causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community, or
No substantial reduction in the quality or integrity of the surrounding or nearby occurrences of the Central Hunter Valley Eucalypt Forest and Woodland CEEC is considered likely to occur as a result of the Proposed Activity.

An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:
The removal of up to 1.62 ha of Central Hunter Valley Eucalypt Forest and Woodland CEEC is unlikely to result in assisting any invasive species that is harmful to the CEEC to become established. The Proposed Activity is not expected to cause regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the surrounding extent of the Central Hunter Valley Eucalypt Forest and Woodland CEEC.
Interfere with the recovery of an ecological community;
A National Recovery Plan has not been prepared for the CEEC; however the Approved Conservation Advice (TSSC 2015a) outlines a range of Priority Conservation Actions, which include some of the following highest priorities: • Avoidance of further clearance and fragmentation of the ecological community and of surrounding native vegetation. • Minimisation of unavoidable impacts from any developments or other activities in areas adjacent to the ecological community that might result in their further degradation. • Regeneration, revegetation and rehabilitation of the ecological community; with an appropriate mix of species. • Implementation of effective control and management techniques for invasive species (e.g., African olive). • Ensuring that patches of particularly high quality or importance in a landscape context are considered for inclusion in formal reserve tenure or other land tenure for biodiversity conservation purposes. The removal of up to 1.62 ha of the Central Hunter Valley Eucalypt Forest and Woodland CEEC as a result of the Proposed Activity is unlikely to interfere with the recovery of the CEEC.
Conclusion
It is estimated up to 1.62 ha of fragmented patches of the woodland variant of PCT 3431, that conforms to the Hunter Valley Eucalypt Forest and Woodland CEEC will be removed as part of the Proposed Activity. This will equate to the loss of 0.04% of the PCT and associated CEEC within 10 km of the Proposed Activity Area and 0.007% of the CEEC's extent (37,000 ha) outlined in the Conservation Advice (TSSC 2015a) for the threatened ecological community. The CEEC is unlikely to be significantly impacted by the Proposed Activity.

EPBC Act Assessment of Significance – A leek-orchid (*Prasophyllum* sp. Wybong) – Critically Endangered

This perennial orchid is endemic to NSW, with known populations near Ilford, Premer, Muswellbrook, Wybong, Yeoval, Inverell, Tenterfield, Currabubula, and the Pilliga area. While most populations are small, the Wybong population is notably the largest. The orchid appears as a single leaf during winter and spring, flowers in spring, and then dies back to a dormant tuber over summer and autumn. It is typically found in open eucalypt woodlands and grasslands.

An action is likely to have a significant impact on a critically endangered species if there is a real chance or possibility that it will:
Lead to a long-term decrease in the size of a population

An action is likely to have a significant impact on a critically endangered species if there is a real chance or possibility that it will:
Prasophyllum sp. Wybong may occur in the open eucalypt woodlands and native grasslands within the Proposed Activity Area. The species is associated with PCT 393, PCT 3431, and PCT 3767 that have been mapped within the Proposed Activity Area. This equates to a total of approximately 14.08 ha of suitable habitat proposed to be removed. While there are no known records of this species within the 10 km database search of the Proposed Activity Area, the species' cryptic nature results in a lack of confidence in defining whether a population of this species is present within the Proposed Activity Area. The Proposed Activity will retain and re-establish the ground layer vegetation in areas where permanent impacts post construction (tracks and towers) is not located. This will provide opportunity to limit impacts to suitable habitat for this species essentially reducing the impacts to the canopy and midstory layers of the vegetation. The construction and operation of the Proposed Activity is unlikely to lead to a long-term decrease in the size of a population of this species.
Reduce the area of occupancy of the species
The species is associated with PCT 393, PCT 3431, and PCT 3767 that have been mapped within the Proposed Activity Area. This equates to a total of approximately 14.08 ha of suitable habitat proposed to be removed. While there are no known records of this species within the 10km database search of the Proposed Activity Area, the species' cryptic nature results in a lack of confidence in defining whether a population of this species is present within the Proposed Activity Area. The Proposed Activity will retain and re-establish the ground layer vegetation in areas where permanent impacts post construction (tracks and towers) is not located. This will provide opportunity to limit impacts to suitable habitat for this species essentially reducing the impacts to the canopy and midstory layers of the vegetation. The construction and operation of the Proposed Activity is unlikely to have the potential to reduce the area of occupancy of this species.
Fragment an existing population into two or more populations
The species is associated with PCT 393, PCT 3431, and PCT 3767 that have been mapped within the Proposed Activity Area. This equates to a total of approximately 14.08 ha of suitable habitat proposed to be removed. While there are no known records of this species within the 10 km database search of the Proposed Activity Area, the species' cryptic nature results in a lack of confidence in defining whether a population of this species is present within the Proposed Activity Area. The Proposed Activity will retain and re-establish the ground layer vegetation in areas where permanent impacts post construction (tracks and towers) is not located. This will provide opportunity to limit impacts to suitable habitat for this species essentially reducing the impacts to the canopy and midstory layers of the vegetation. The construction and operation of the Proposed Activity is unlikely to reduce the area of occupancy of this species.
Adversely affect habitat critical to the survival of a species
There is currently no definition of habitat critical to the survival of this species. The species is associated with PCT 393, PCT 3431, and PCT 3767 that have been mapped within the Proposed Activity Area. This equates to a total of approximately 14.08 ha of suitable habitat proposed to be removed. While there are no known records of this species within the 10 km database search of the Proposed Activity Area, the species' cryptic nature results in a lack of confidence in defining whether a population of this species is present within the Proposed Activity Area. The Proposed Activity will retain and re-establish the ground layer vegetation in areas where permanent impacts post construction (tracks and towers) is not located. This will provide

An action is likely to have a significant impact on a critically endangered species if there is a real chance or possibility that it will:
opportunity to limit impacts to suitable habitat for this species essentially reducing the impacts to the canopy and midstory layers of the vegetation. The construction and operation of the Proposed Activity is unlikely to have the potential to adversely affect habitat critical to the survival of this species.
Disrupt the breeding cycle of a population
The species is associated with PCT 393, PCT 3431, and PCT 3767 that have been mapped within the Proposed Activity Area. This equates to a total of approximately 14.08 ha of suitable habitat proposed to be removed. While there are no known records of this species within the 10 km database search of the Proposed Activity Area, the species' cryptic nature results in a lack of confidence in defining whether a population of this species is present within the Proposed Activity Area. The Proposed Activity will retain and re-establish the ground layer vegetation in areas where permanent impacts post construction (tracks and towers) is not located. This will provide opportunity to limit impacts to suitable habitat for this species essentially reducing the impacts to the canopy and midstory layers of the vegetation. The construction and operation of the Proposed Activity is unlikely to have the potential to disrupt the breeding cycle of a population of this species.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
The species is associated with PCT 393, PCT 3431, and PCT 3767 that have been mapped within the Proposed Activity Area. This equates to a total of approximately 14.08 ha of suitable habitat proposed to be removed within a narrow (generally 30 m wide except for 520 m of 36.18 m width) corridor. While there are no known records of this species within the 10 km database search of the Proposed Activity Area, the species' cryptic nature results in a lack of confidence in defining whether a population of this species is present within the Proposed Activity Area. The Proposed Activity will retain and re-establish the ground layer vegetation in areas where permanent impacts post construction (tracks and towers) is not located. This will provide opportunity to limit impacts to suitable habitat for this species essentially reducing the impacts to the canopy and midstory layers of the vegetation. Furthermore, the narrow nature of the Proposed Activity and likely managed of the corridor combined with the retention of the groundlayer would continue to provide suitable habitat for the species in the locality. The Proposed Activity is unlikely to remove the availability or quality of habitat to the extent that this species is likely to decline.
Result in invasive species that are harmful to a critically endangered species becoming established in the critically endangered species' habitat
Up to 14.08 ha of suitable habitat is proposed to be removed within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement. The Proposed Activity will retain and re-establish the ground layer vegetation in areas where permanent impacts post construction (tracks and towers) is not located. This will provide opportunity to limit impacts to suitable habitat for this species essentially reducing the impacts to the canopy and midstory layers of the vegetation and reduce the opportunity for invasive species to colonise the area. The Proposed Activity is unlikely to result in the establishment of invasive species above current levels that are harmful to the species.
Introduce disease that may cause the species to decline, or
There are no diseases which are listed to threaten this species within its Conservation Advice (DEWHA 2009).

An action is likely to have a significant impact on a critically endangered species if there is a real chance or possibility that it will:
Interfere substantially with the recovery of the species.
There is currently no recovery plan for this species, however, the Conservation Advice (DEWHA 2009) notes the following actions to enable recovery of additional sites and/or populations: • Undertake appropriate seed and mycorrhizal fungi collection and storage • Investigate options for establishing additional populations in-situ, or ex-situ • Implement national translocation protocols if translocating existing populations or establishing additional populations is considered necessary and feasible. The Proposed Activity is unlikely to substantially interfere with the recovery of this species.
Conclusion
The Proposed Activity is unlikely to have a significant impact on this species. To reduce any chance of impact to this species it is recommended that prior to construction a targeted survey is carried out during the flowering seasons to confirm the species is not present in the locality.

EPBC Act Assessment of Significance – regent honeyeater (*Anthochaera phrygia*) and swift parrot (*Lathamus discolor*) – Critically Endangered

Regent honeyeater – (*Anthochaera phrygia*) – Critically Endangered

Within NSW, breeding sub-populations of the regent honeyeater are fragmented and occur mainly around the Capertee Valley in central-eastern NSW and the Bundarra-Barraba region in northern inland NSW. Minor and sporadic breeding occurs in other areas such as Warrumbungle National Park, Pilliga forests, Mudgee-Wollar region, and the Hunter and Clarence Valleys. The regent honeyeater inhabits eucalypt open forests and woodlands, predominantly box-ironbark types, but also spotted gum (*Corymbia maculata*) and swamp mahogany (*Eucalyptus robusta*) on the coast. The species nests in branch forks of live eucalypts or she-oaks (OEH 2019).

This species has not been recorded within 10 km of the Proposed Activity area but is considered to have a moderate likelihood of occurrence based on suitable habitat in the locality (Box-Ironbark Woodland). Potential foraging and breeding habitat for this species in the Proposed Activity Area includes woodland and forest areas and native plantings which make up approximately 16.47ha.

Swift parrot (*Lathamus discolor*) – Critically Endangered

The swift parrot exists as single populations, with some exchange of individuals among regularly used areas (Cth DCCEEW 2024b) therefore any record of this species would constitute part of a population as described above.

Of the eight key tree species listed for the swift parrot as important foraging habitat in NSW during autumn and winter by the National Recovery Plan for the species (Cth DCCEEW 2024b) two were recorded within the Proposed Activity Area being white box (*Eucalyptus albens*) and Yellow Box (*E. melliodora*).

The Proposed Activity will involve the removal of potential foraging habitat for the species, which includes 16.47 ha of forest and woodland areas and native plantings.

An action is likely to have a significant impact on a critically endangered species if there is a real chance or possibility that it will:

Lead to a long-term decrease in the size of a population

The Proposed Activity will remove approximately 16.47 ha of potential foraging habitat for the swift parrot and regent honeyeater.

Swift parrot:

No populations of the swift parrot have been recorded in the Proposed Activity Area, however there are two records nearby, within the town of Scone both are historic records (2002 and 1968).

As swift parrots are winter migrants, they would utilise the resources of the Proposed Activity Area as part of a wider foraging range.

Regent honeyeater:

The regent honeyeater occurs as a single population and has not been recorded within the 10 km database search of the Proposed Activity Area.

Furthermore, extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away).

The Proposed Activity is unlikely to lead to a long-term decrease in the size of a population of these species.

Reduce the area of occupancy of the species

The Proposed Activity will remove approximately 16.47 ha of potential foraging habitat for these two species. These two species may utilise resources within the Proposed Activity Area as a part of a wider foraging range.

Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away).

The Proposed Activity is unlikely to reduce the area of occupancy for either of these threatened avifauna species.

Fragment an existing population into two or more populations

Given the highly dispersive nature of these two species and the extensive areas of suitable and known foraging habitat in the surrounding locality, it is unlikely that the Proposed Activity would create a significant change to these species dispersal capacity or create a significant barrier to the movement of these species that would result in an existing population being fragmented.

Adversely affect habitat critical to the survival of a species

Swift parrot:

The habitat critical to the survival outlined in the Swift Parrot Recovery Plan includes:

Breeding and foraging habitat in Tasmania

Foraging habitat on the Australian mainland. All preferred foraging species within known and likely foraging habitat on the mainland including Yellow Gum (*Eucalyptus. leucoxylon*); Red Ironbark (*E. tricarpa*); Mugga Ironbark (*E. sideroxylon*); Grey Box (*E. macrocarpa*); 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*).

The Proposed Activity will remove approximately 16.47 ha of potential foraging habitat for the swift parrot. The only foraging species recorded in the Proposed Activity Area are White Box (*E.*

An action is likely to have a significant impact on a critically endangered species if there is a real chance or possibility that it will:
albens) and Yellow Box (*E. melliodora*). These species are generally restricted to PCT 393 (5.11ha). The native planting also contains Tasmanian blue gum (*E. globulus*). While the other PCTs may not contain the preferred species they have been considered to provide supplementary foraging habitat. The removal of 16.47 ha of potential foraging habitat for the species represents a minor amount of the species' mainland foraging range and is not considered critical for the survival of the swift parrot. **Regent honeyeater:** The National Recovery Plan for the Regent Honeyeater (CoA 2016) describes habitat critical to the survival of the species as including: • any breeding or foraging areas where the species is likely to occur • any newly discovered breeding or foraging locations. No records of the regent honeyeater foraging or breeding occur in the locality, and the Proposed Activity Area is not considered to contain habitat critical to the survival of this species. The Proposed Activity will remove approximately 16.47 ha of potential foraging and breeding habitat for this species. However, the species has never been recorded within the 10 km database search of the Proposed Activity Area. The Proposed Activity is unlikely to adversely affect habitat critical to the survival of the regent honeyeater or swift parrot.
Disrupt the breeding cycle of a population
Swift parrot: The swift parrot is not known to breed on mainland Australia, and the Proposed Activity will not disrupt the breeding cycle of a population of this species. **Regent honeyeater:** There are three known key breeding areas of the regent honeyeater, two of which occur in NSW - Capertee Valley and Bundarra-Barraba regions (OEH 2019c) and no breeding activity for this species has been recorded within the Proposed Activity Area.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
The Proposed Activity will involve the removal of approximately 16.47 ha of forest and woodland habitat that may be utilised for foraging by these species. Given the widespread availability of potential habitats in the locality, the Proposed Activity will not modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that these species as a whole are likely to decline.
Result in invasive species that are harmful to a critically endangered species becoming established in the critically endangered species' habitat
It is not anticipated that the proposed activities would lead to the invasion of any exotic species that would threaten habitat for these species.
Introduce disease that may cause the species to decline, or
It is not likely that the activities will lead to the introduction of diseases that will cause these species to decline.
Interfere substantially with the recovery of the species.
Swift parrot:

An action is likely to have a significant impact on a critically endangered species if there is a real chance or possibility that it will:
The following recovery plan has been prepared for this species: • National Recovery Plan for the Swift Parrot (*Lathamus discolor*) (Cth DCCEEW 2024b). **Regent honeyeater:** The following recovery plan has been prepared for the species: • National Recovery Plan for the Regent Honeyeater (*Anthochaera phrygia*) (Commonwealth of Australia 2016). The Proposed Activity will remove approximately 16.47 ha of potential foraging habitat for these species. Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). Given the extensive habitat available in the locality and the already fragmented nature of the Proposed Activity Area, the removal of 16.47 ha of suitable habitat for these species is unlikely to interfere substantially with the recovery of these species.
Conclusion
The Proposed Activity is unlikely to result in a significant impact to the regent honeyeater or swift parrot.

EPBC Act Assessment of Significance – Woodland Birds – Vulnerable

Southern whiteface (*Aphelocephala leucopsis*) – Vulnerable

Southern Whitefaces live in a wide range of open woodlands and shrublands where there is an understorey of grasses or shrubs, or both. These areas are usually in habitats dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains. Southern whiteface is considered a sedentary species; however, records indicate that individuals may move into wetter areas outside of their normal range during drought years (Higgins and Peter 2002 cited in NSW OEH 2023).

This species has not been recorded within 10 km of the Proposed Activity Area but is considered to have a moderate likelihood of occurrence based on suitable habitat in the locality (woodlands with understorey of grasses and/or shrubs) only. Potential foraging and breeding habitat for this species in the Proposed Activity Area includes areas which make up approximately 18.62 ha.

There is no definition for an important population of this species (DCCEEW 2025, DCCEEW 2023).

South-eastern glossy black-cockatoo (*Calyptorhynchus lathami lathami*) – Vulnerable

The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur (OEH 2024).

This species has been recorded once within 10 km of the Proposed Activity Area and is considered to have a moderate likelihood of occurrence based on suitable habitat in the locality (sheoak trees associated with PCT 4089). Potential foraging and breeding habitat for this species in the Proposed Activity Area includes areas that make up approximately 1.30 ha.

Brown treecreeper (*Climacteris picumnus victoriae*) – Vulnerable

The brown treecreeper is endemic to eastern Australia, inhabiting eucalypt forests and woodlands of the inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges. The species is found in woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey (OEH 2024).

This species has not been recorded within 10 km of the Proposed Activity Area, although there are many records from the surrounding area. It is considered to have a moderate likelihood of occurrence based on the presence of potential habitat (box-gum woodland associated with PCT 393 and PCT3431) found in the western end of the Proposed Activity Area, which is approximately 8.43 ha.

Diamond firetail (*Stagonopleura guttata*) – Vulnerable

The diamond firetail is endemic to south-eastern Australia, ranging from central Queensland to the Eyre Peninsula in South Australia. It is widely distributed in NSW, particularly in the Northern, Central, and Southern Tablelands, as well as the Northern, Central, and South Western Slopes, and the North West Plains and Riverina. Although uncommon in coastal districts, there are records from areas near Sydney, the Hunter Valley, and the Bega Valley. This species inhabits grassy eucalypt woodlands, including box-gum and snow gum woodlands, as well as open forests, mallee, and natural temperate grasslands. It is often found in riparian areas and lightly wooded farmland (OEH 2024).

This species is considered to have a moderate likelihood of occurrence based on suitable habitat present across the Proposed Activity Area, including grassy eucalypt woodlands, box-gum woodlands, riparian areas, and lightly wooded farmland (associated with PCT 393, PCT 3431, PCT 3767, PCT 4089 and native plantation areas), which make up a total of 18.62 ha. This species has been recorded six times within the 10 km buffer of the Proposed Activity Area.

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
Lead to a long-term decrease in the size of an important population of a species
Up to 18.62 ha of native vegetation within the Proposed Activity Area provides suitable habitat for the southern whiteface, brown treecreeper, diamond firetail and the south-eastern glossy black cockatoo and may support these species periodical or when environmental conditions reduce forage in their usual home range. The location of the Proposed Activity Area does not intersect with known important populations for any of these four species. The lack of records for the southern whiteface and diamond firetail and the single record for the south-eastern glossy black-cockatoo within a 10 km database search of the Proposed Activity Area suggests it is unlikely that an important population occurs in the locality for either of these three species, therefore the Proposed Activity is unlikely to lead to a long-term decrease in the size of an important population of each of these species. Regarding the brown treecreeper, although there are multiple records for this species, it does not suggest it is a key source for the population therefore the Proposed Activity is unlikely to lead to a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population
Up to18.62 ha of native vegetation within the Proposed Activity Area provides suitable habitat for the southern whiteface, brown treecreeper, diamond firetail and the south-eastern glossy black-cockatoo and may support these species periodically or when environmental conditions reduce foraging areas in their usual home range. The location of the Proposed Activity Area does not intersect with known important populations for these four species.

The lack of records for the southern whiteface and diamond firetail and the single record for the south-eastern glossy black-cockatoo within a 10 km database search of the Proposed Activity Area suggests it is unlikely that an important population occurs in the locality for either of these three species, therefore the Proposed Activity is unlikely to reduce the area of occupancy of an important population of each of these species.

Regarding the brown treecreeper, although there are multiple records for this species within 10 km of the Proposed Activity Area, it does not suggest it is a key source for the population therefore, the Proposed Activity is unlikely to reduce the area of occupancy of an important population for this species.

Fragment an existing important population into two or more populations

The 18.62 ha of native vegetation within the Proposed Activity Area provides suitable habitat for the southern whiteface, brown treecreeper, diamond firetail and the south-eastern glossy black-cockatoo and may support these species periodically or when environmental conditions reduce foraging areas in their usual home range.

The location of the Proposed Activity Area does not intersect with known important populations for these four species.

The lack of records for the southern whiteface and diamond firetail and the single record for the south-eastern glossy black-cockatoo within a 10 km search of the Proposed Activity Area suggests it is unlikely that an important population occurs in the locality for either of these three species, therefore the Proposed Activity is unlikely to fragment an existing important population into two or more populations for each of these species.

Regarding the brown treecreeper, although there are multiple records for this species within 10 km of the Proposed Activity Area, it does not suggest it is a key source for the population therefore, the Proposed Activity is unlikely to fragment an existing important population into two or more populations for this species.

Adversely affect habitat critical to the survival of a species

No critical habitat is listed for the brown treecreeper or the diamond firetail therefore it is unlikely the Proposed Activity will adversely affect habitat critical to the survival of each of the species.

Southern whiteface

Habitat critical to the survival of the Southern whiteface includes

- 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.

The removal of up to 18.62 ha of native vegetation includes fragmented patches of vegetation with a highly modified understorey with the exception of 10.77 ha of contiguous vegetation found in the western section of the corridor. The removal of vegetation in this section is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that would result in the retention and/or re-establishment of the groundlayer. In addition, there are up to 27 hollow bearing trees within the Proposed Activity Area. There are no records of this species within a 10 km database search of the Proposed Activity Area and coupled with the minor area of native vegetation removal and the abundance of contiguous vegetation in the western section of the Proposed Activity, it is unlikely the Proposed Activity will adversely affect habitat critical to the survival of this species.

South-eastern glossy black-cockatoo

Habitat critical to the survival of the south-eastern glossy black-cockatoo includes

- Foraging resources such as she oak species
- Breeding resources such as hollow bearing trees 1) >8 m above ground; 2) Located in branches >30 cm in diameter; 3) Branch or stem no more than 45° from vertical; and 4) Minimum entrance diameter of >15 cm.

The removal of up to 1.30 ha of native vegetation associated with the south-eastern glossy black-cockatoo includes fragmented patches of PCT 4089. This PCT was the only vegetation type in the Proposed Activity Area that sheoaks (*Casuarina cunninghamiana*- (River Oak)) were found. This PCT was observed as isolated patches within the highly disturbed agricultural lands. This Casuarina species is not considered a main foraging resource and would only be used during limited periods of the year (Cth DCCEEW 2022c). There are 10 hollow bearing trees that generally meet the requirements listed above. There is only one record of this species within a 10 km database search of the Proposed Activity Area. Given with the lack of records and the small area of native vegetation removal and the abundance of contiguous vegetation in the western section of the Proposed Activity Area, it is unlikely the Proposed Activity will adversely affect habitat critical to the survival of this species.

Disrupt the breeding cycle of an important population

The 18.62 ha of native vegetation within the Proposed Activity Area provides suitable habitat for the southern whiteface, brown treecreeper, diamond firetail and the south-eastern glossy black-cockatoo and may support these species periodically or when environmental conditions reduce the foraging areas in their usual home range.

The location of the Proposed Activity Area does not intersect with known important populations for these four species.

The lack of records for the southern whiteface and diamond firetail and the single record for the south-eastern glossy black-cockatoo within a 10 km search of the Proposed Activity Area suggests it is unlikely that an important population occurs in the locality for either of these three species, therefore the Proposed Activity is unlikely to disrupt the breeding cycle of an important population for each of these species.

Regarding the brown treecreeper, although there are multiple records for this species within 10 km of the Proposed Activity Area, it does not suggest it is a key source for the population therefore, the Proposed Activity is unlikely disrupt the breeding cycle of an important population for this species.

modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline

The Proposed Activity will involve the removal of approximately 18.62 ha of forest and woodland habitat that may be utilised for foraging by these species. Given the widespread availability of potential habitats in the locality, the Proposed Activity will not modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that these species are likely to decline.

result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat

It is unlikely invasive species that are harmful to these four threatened avifauna species would further establish above existing conditions as a result of the Proposed Activity.

Introduce disease that may cause the species to decline

There are no known diseases that are likely to increase in the area as a result of the Proposed Activity.

Interfere substantially with the recovery of the species.

It is unlikely that the loss of 18.62 ha of suitable habitat will interfere with the recovery of these four threatened avifauna species. The Proposed Activity will result in the removal of up to approximately

18.62 ha of native vegetation, which forms potential foraging and breeding habitat for these species. The native vegetation consists of scattered patches (7.85 ha) amongst cleared agricultural land with the exception of 10.77 ha that has some connectivity to the escarpment vegetation around Owens Gap. The removal of this vegetation would see a narrow corridor of mainly canopy removed. Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away).
Conclusion
The Proposed Activity is unlikely to have a significant impact on the southern whiteface, brown treecreeper, diamond firetail or the south-eastern glossy black-cockatoo

EPBC Act Assessment of Significance – Koala (*Phascolarctos cinereus*) – Endangered

The koala has a fragmented distribution throughout eastern Australia, from north-east Queensland to the Eyre Peninsula in South Australia. In NSW, koala populations are found on the central and north coasts, southern highlands, southern and northern tablelands, Blue Mountains, and southern coastal forests, with smaller populations on the plains west of the Great Dividing Range. Koalas inhabit eucalypt woodlands and forests, feeding on the foliage of over 70 eucalypt species and 30 non-eucalypt species (OEH 2024).

There is one record of this species within 10 km of the Proposed Activity Area, and there is a moderate likelihood of occurrence based on the presence of potential habitat (eucalyptus woodlands) in the Proposed Activity Area, which make up approximately 6.41 ha.

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:
Lead to a long-term decrease in the size of a population
The Proposed Activity will result in the removal of up to approximately 6.41 ha of native vegetation, which forms potential foraging and breeding habitat for these species. The native vegetation consists intact vegetation that has some connectivity to the escarpment vegetation around Owens Gap. The vegetation proposed to be removed is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that will continue to provide connectivity between patches of vegetation post construction. In addition, extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). Due to the extensive habitat within the vicinity of the Proposed Activity Area and minimal habitat loss proposed by the Proposed Activity, it is unlikely that the Proposed Activity will lead to a long-term decrease in the size of a population of this species.
Reduce the area of occupancy of the species
The Proposed Activity will result in the removal of up to approximately 6.41 ha of native vegetation, which forms potential foraging and breeding habitat for these species. The native vegetation consists of intact vegetation that has some connectivity to the escarpment vegetation around Owens Gap. The vegetation proposed to be removed is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that will continue to provide connectivity between patches of vegetation post construction. In addition, extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:
protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The Proposed Activity Area is considered unlikely to contain an important population of this species and thus, the Proposed Activity is unlikely to reduce the area of occupancy of a population of the koala.
Fragment an existing population into two or more populations
The Proposed Activity will result in the removal of up to approximately 6.41 ha of native vegetation, which forms potential foraging and breeding habitat for these species. The native vegetation consists of intact vegetation that has some connectivity to the escarpment vegetation around Owens Gap. The vegetation proposed to be removed is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that will continue to provide connectivity between patches of vegetation post construction. In addition, extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). Due to the extensive habitat within the vicinity of the Proposed Activity Area and minimal habitat loss proposed by the Proposed Activity, it is unlikely that the Proposed Activity will fragment an existing population of the koala into two or more populations.
Adversely affect habitat critical to the survival of a species
Habitat critical to the koala is determined by: (a) whether the habitat is used during periods of stress (examples: flood, drought or fire); (b) whether the habitat is used to meet essential life cycle requirements (examples: foraging, breeding, nesting, roosting, social behaviour patterns or seed dispersal processes); (c) the extent to which the habitat is used by important populations; (d) whether the habitat is necessary to maintain genetic diversity and long-term evolutionary development; (e) whether the habitat is necessary for use as corridors to allow the species to move freely between sites used to meet essential life cycle requirements; (f) whether the habitat is necessary to ensure the long-term future of the species or ecological community through reintroduction or re-colonisation; (g) any other way in which habitat may be critical to the survival of a listed threatened species or a listed threatened ecological community. The Proposed Activity will result in the removal of up to approximately 6.41 ha of native vegetation, which forms potential foraging and breeding habitat for these species. The native vegetation consists of intact vegetation that has some connectivity to the escarpment vegetation around Owens Gap. The vegetation proposed to be removed is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that will continue to provide connectivity between patches of vegetation post construction. In addition, extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The Proposed Activity is considered unlikely to adversely affect habitat critical to the survival of this species.
Disrupt the breeding cycle of a population

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:
The Proposed Activity will result in the removal of up to approximately 6.41 ha of native vegetation, which forms potential foraging and breeding habitat for these species. The native vegetation consists of intact vegetation that has some connectivity to the escarpment vegetation around Owens Gap. The vegetation proposed to be removed is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that will continue to provide connectivity between patches of vegetation post construction. In addition, extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). There are two records of the koala within the 10 km buffer of the Proposed Activity Area. However, given the small area proposed to be impacted and the retention of connectivity in the landscape, it is unlikely that the Proposed Activity will disrupt the breeding cycle of a population of this species.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
The Proposed Activity will result in the removal of up to approximately 6.41 ha of native vegetation, which forms potential foraging and breeding habitat for these species. The native vegetation consists of intact vegetation that has some connectivity to the escarpment vegetation around Owens Gap. The vegetation proposed to be removed is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that will continue to provide connectivity between patches of vegetation post construction. In addition, extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). This species has been recorded within the 10 km buffer of the Proposed Activity Area on two occasions. However, given the small area proposed to be impacted and the retention of connectivity in the landscape it is unlikely the Proposed Activity will decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat
The Proposed Activity will remove approximately 6.41 ha of suitable habitat for this species. The removal of this vegetation as part of the Proposed Activity is unlikely to result in the establishment of invasive species above current levels that are harmful to this species.
Introduce disease that may cause the species to decline, or
Koala retrovirus (KoRV) and Chlamydia (*Chlamydia percorum*) are known diseases to threaten the koala. The Proposed Activity is unlikely to result in the establishment of disease that are harmful to this species.
Interfere substantially with the recovery of the species.
The National Recovery Plan for the koala notes the following as the main threats to the species: • Climate change • Land use change • Natural systems modification • Habitat loss and fragmentation • Habitat degradation

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:
• Genetic effects and disease This species has been recorded within the 10 km buffer of the Proposed Activity Area on two occasions. However, given with the small area proposed to be impacted and the retention of connectivity in the landscape it is unlikely to interfere substantially with the recovery of this species.
Conclusion
The Proposed Activity will remove 6.41 ha suitable koala habitat. There is extensive and higher quality habitat for these species present within the surrounding area. Given the small scale of the proposed impact and availability of vast and higher quality habitat within the vicinity of the Proposed Activity Area and the retention of connectivity in the landscape it is unlikely that the Proposed Activity will significantly impact the koala.

EPBC Act Assessment of Significance – Spotted-tailed quoll (*Dasyurus maculatus*) – Endangered

The spotted-tailed quoll's range has contracted significantly since European settlement and is now found in eastern NSW, eastern Victoria, south-east and north-eastern Queensland, and Tasmania. It inhabits a variety of habitats, including rainforest, open forest, woodland, coastal heath, and inland riparian forest, from the sub-alpine zone to the coastline. Spotted-tailed quolls use hollow-bearing trees, fallen logs, other animal burrows, small caves, and rock outcrops as den sites (OEH 2024).

According to the National Recovery Plan for the species (VDELWP 2016) it is considered that this species has declined by 50 to 90 per cent. Home range estimates vary considerably according to location and habitat quality; however females can occupy home ranges up to 1515 ha and males up to 5512 ha and both sexes usually traverse their ranges along densely vegetated creek lines. Extant populations are highly fragmented and declining. The geographic distribution of the species is contracting, and its subpopulations are becoming increasingly fragmented.

The Proposed Activity will result in a narrow corridor of primary canopy vegetation being removed. The retention or re-establishment of the groundlayer will facilitate the movement of this species. It is likely the Spotted-tailed quoll would utilise the Proposed Activity Area and surrounds but it is unlikely this species would vacate the area post construction. For this reason, any population in this area would unlikely be considered to be an important population.

There is a moderate likelihood of occurrence based on the presence of potential habitat including a rocky escarpment and associations with all PCTs and likelihood to use the native plantings, resulting in a total of approximately 18.62 ha of suitable habitat within the Proposed Activity Area. Additionally, five records of the species occur within the 10 km buffer of the Proposed Activity Area.

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:
Lead to a long-term decrease in the size of a population
There are five records of this species within the 10 km database search of the Proposed Activity Area. The Proposed Activity will result in the removal of approximately 18.62 ha of suitable habitat for this species. such as woodland, open forest and derived native grassland communities (VDELWP 2016).

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:
The vegetation communities within the Proposed Activity Areas are considered to form part of the home range for the species and may be utilised as a movement corridor and as potential foraging habitat. Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). Given the small scale of the proposed impact that will still provide connectivity in the lower strata, it is unlikely that the Proposed Activity will lead to a long-term decrease in the size of a population of this species.
Reduce the area of occupancy of the species
There are five records of this species within the 10 km database search of the Proposed Activity Area. The Proposed Activity will result in the removal of approximately 18.62 ha of suitable habitat for this species. such as woodland, open forest and derived native grassland communities (VDELWP 2016). The vegetation communities within the Proposed Activity Areas are considered to form part of the home range for the species and may be utilised as a movement corridor and as potential foraging habitat. Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). Given the small scale of the Proposed Activity that will still provide connectivity in the lower strata, it is unlikely to significantly reduce the area of occupancy of this species.
Fragment an existing population into two or more populations
The Proposed Activity will result in the removal of approximately 18.62 ha of suitable habitat for this species. The Proposed Activity will retain or as required re-establish the ground layer that would still facilitate the movement of this species across the landscape. It is therefore considered unlikely that the Proposed Activity will result in fragmentation of a population of the spotted-tailed quoll into two or more populations.
Adversely affect habitat critical to the survival of a species
As noted in the Recovery Plan for this species, the habitat 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 (VDELWP 2016). The threshold densities of these critical habitat components to support quoll populations are currently unknown meaning that the critical habitat to the survival of the species is not possible to define (VDELWP 2016). Therefore, all habitats within the species current distribution that are known to be occupied are considered important. While the Proposed Activity will result in the removal of approximately 18.62 ha of suitable habitat for this species and five records of this species have been recorded within the 10 km database search of the Proposed Activity Area, the fragmented and poor nature of this habitat does not meet the 'large patches of forest' that is noted in the description of critical habitat for this species. Thus, while there are records of this species, the Proposed Activity is unlikely to adversely affect habitat that is critical to the survival of the species.

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:

Disrupt the breeding cycle of a population

The spotted-tailed quoll generally dens in rock shelters, small caves, hollow logs or tree hollows and utilises numerous dens within its home range. There are five records of this species within the 10 km buffer of the Proposed Activity Area, however, potential den sites were not recorded during surveys. There is no evidence to suggest that breeding has occurred within the Proposed Activity Areas.

The Proposed Activity is unlikely to disrupt the breeding cycle of a population of this species.

Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline

The Proposed Activity will result in the removal of approximately 18.62 ha of suitable habitat for this species. The Proposed Activity Area is highly fragmented as a result of historic agricultural land practices with the exception of the west section of the Proposed Activity Area. The narrow (generally 30 m wide except for 520 m of 36.18 m width) corridor associated with the Proposed Activity will only see a permanent loss of canopy and some shrub species but will retain the ground layers that will continue to facilitate the movement of this species.

Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). Thus, the marginal impact of the Proposed Activity is considered unlikely to significantly reduce the area of occupancy of this species. The area of habitat to be removed is not important, notable, or of consequence, in accordance with the significant impact guidelines (DoE 2013). Thus, the Proposed Activity is unlikely to modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline.

Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat

This species is known to be threatened by predation by invasive species including feral cats (*Felis catus*) and European red fox (*Vulpes vulpes*). The species is also threatened by the poisoning associated with control of non-native predators.

It is likely these invasive species are present in parts of the Proposed Activity Area that are considered to be highly disturbed landscape currently and unlikely for these threats to increase and cause further harm as a result of the Proposed Activity.

Introduce disease that may cause the species to decline, or

There are no diseases known to be specific threats to this species (DELWP 2016). Thus, it is unlikely that the Proposed Activity will lead to the introduction of diseases that will cause the spotted-tailed quoll to decline.

Interfere substantially with the recovery of the species.

The National Recovery Plan for this species (DELWP 2016) notes the following as specific recovery objectives:

1. Determine the distribution and status of Spotted-tailed Quoll populations throughout the range, and identify key threats and implement threat abatement management practices.
2. Investigate key aspects of the biology and ecology of the Spotted-tailed Quoll to acquire targeted information to aid recovery.
3. Reduce the rate of habitat loss and fragmentation on private land.
4. Evaluate and manage the risk posed by silvicultural practices.

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:
5. Determine and manage the threat posed by introduced predators (foxes, cats, wild dogs) and of predator control practices on Spotted-tailed Quoll populations. 6. Determine and manage the impact of fire regimes on Spotted-tailed Quoll populations. 7. Reduce deliberate killings of Spotted-tailed Quolls. 8. Reduce the frequency of Spotted-tailed Quoll road mortality. 9. Assess the threat Cane Toads pose to Spotted-tailed Quolls and develop threat abatement actions if necessary. 10. Determine the likely impact of climate change on Spotted-tailed Quoll populations. 11. Increase community awareness of the Spotted-tailed Quoll and involvement in the Recovery Program. The Proposed Activity will result in the removal of approximately 18.62 ha of suitable habitat for this species. Given the small scale of the Proposed Activity, the fact this species is highly mobile and availability suitable habitat within the vicinity of the Proposed Activity Area, it is unlikely that the Proposed Activity will interfere substantially with the recovery of this species.
Conclusion
The Proposed Activity will remove 18.62 ha suitable spotted-tailed quoll habitat. There is extensive and higher quality habitat for these species present within the surrounding area. Given the small scale of the proposed impact and availability of vast and superior habitat within the vicinity of the Proposed Activity Area and the retention of connectivity in the landscape it is unlikely that the Proposed Activity will significantly impact the spotted-tailed quoll.

EPBC Act Assessment of Significance – Brush-tailed rock-wallaby (*Petrogale penicillata*) – Vulnerable

The brush-tailed rock-wallaby's range extends from south-east Queensland to the Grampians in western Victoria, roughly following the line of the Great Dividing Range. 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. This species occupies rocky escarpments, outcrops, and cliffs with a preference for complex structures with fissures, caves, and ledges, often facing north (2024).

While there are no records of this species within 10 km of the Proposed Activity Area, there are recent records from 20 km to the south-west. There is a moderate likelihood of occurrence based on the presence of suitable distinct habitat in the western end of Proposed Activity Area (rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges). This species is also associated with PCT 393, PCT 3431, and PCT 3767, resulting in a total of approximately 14.08ha of suitable habitat within the 10 km buffer of the Project Area.

As noted in the National Recovery Plan for this species (Menkhorst & Hynes 2010), populations important to the survival of the brush-tailed rock-wallaby in New South Wales include:

- Warrumbungle Range (outlying population; loss would cause substantial range contraction).
- Mt Kaputar (outlying population; loss would cause range contraction).

- Wollemi National Park and Jenolan Caves [stronghold populations where fox control may be most effective (due to distance from agricultural land) and so populations have the greatest chance of persisting into the long term].
- Nattai National Park population (loss would create a large range gap between the Shoalhaven population and populations further north).
- Shoalhaven (southernmost population in NSW).
- Macleay Gorges region (largest known populations).

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
Lead to a long-term decrease in the size of an important population of the species
There are no records of this species within the 10 km database search of the Proposed Activity Area. The Proposed Activity will result in the removal of approximately 14.08 ha of suitable habitat for this species. According to the National Recovery Plan for this species (Menkhorst & Hynes 2010), there is no known important population within the 10 km buffer of the Proposed Activity Area. It is unlikely that the Proposed Activity will lead to a long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population
The Proposed Activity will result in the removal of approximately 14.08 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area. According to the National Recovery Plan for this species (Menkhorst & Hynes 2010), there no known important populations within the 10 km buffer of the Proposed Activity Area. The Proposed Activity is considered unlikely to reduce significantly reduce the area of occupancy of an important population of this species.
Fragment an existing important population into two or more populations
The Proposed Activity will result in the removal of approximately 14.08 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area. According to the National Recovery Plan for this species (Menkhorst & Hynes 2010), there are no known important populations within the 10 km buffer of the Proposed Activity Area. It is therefore considered unlikely that the project will result in substantial fragmentation of an important population of the brush-tailed rock-wallaby into two or more populations.
Adversely affect habitat critical to the survival of a species
As noted in the National Recovery Plan for this species, habitat critical to survival of the species includes rocky refuge habitat, foraging habitat and commuting routes between the two. This has not yet been precisely mapped for the species. Proposed recovery actions include determining habitat that is critical to survival of the brush-tailed rock-wallaby. The Proposed Activity will result in the removal of approximately 14.08 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area and the Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. Therefore, it is unlikely that the Proposed Activity will adversely affect habitat critical to the survival of this species.
Disrupt the breeding cycle of an important population
The Proposed Activity will result in the removal of approximately 14.08 ha of suitable habitat for this species. There are no records of this species within the 10 km database search of the Proposed Activity Area. According to the National Recovery Plan for this species (Menkhorst & Hynes 2010),

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
there is no known important population within the 10 km buffer of the Proposed Activity Area. Therefore, it is unlikely that the Proposed Activity will disrupt the breeding cycle of an important population of this species.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
The Proposed Activity will result in the removal of approximately 14.08 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area. The Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The marginal impact of the Proposed Activity is considered unlikely to reduce significantly reduce the area of occupancy of this species.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat
According to the National Recovery Plan for this species (Menkhorst & Hynes 2010), the brush-tailed rock-wallaby is threatened by predation from invasive species including wild dog (*Canis lupus*), European red fox (*Vulpes vulpes*), and feral cat (*Felis catus*). It also notes the brush-tailed rock-wallaby is threatened by competition with invasive species including the European rabbit (*Oryctolagus cuniculus*), feral goat (*Capra hircus*) and feral horse (*Equus caballus*). The Conservation Advice for this species (DCCEEW 2025) also notes that this species is threatened by invasion of weeds, such as Lantana (*Lantana camera*) that may degrade foraging habitat for the brush-tailed rock-wallaby. The Proposed Activity will result in the removal of approximately 14.08 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area. It is unlikely that the Proposed Activity will result in invasive species that are harmful to the brush-tailed rock-wallaby becoming established in the species' habitat.
Introduce disease that may cause the species to decline, or
The Conservation Advice for this species (DCCEEW 2025c) notes that the brush-tailed rock-wallaby is threatened by hydatid disease caused by *Echinococcus grandulosis* and toxoplasmosis caused by *Toxoplasma gondii*. The Proposed Activity will result in the removal of approximately 14.08 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area therefore, it is unlikely that the Proposed Activity will introduce disease that may cause this species to decline.
Interfere substantially with the recovery of the species.
The National Recovery Plan for the brush-tailed rock-wallaby (Menkhorst & Hynes 2010), notes the following specific recovery objectives for this species: 1. Determine and manage threats to the brush-tailed rock-wallaby and its habitat. 2. Determine distribution, abundance, population trends and viability for the brush-tailed rock-wallaby. 3. Establish and maintain separate, viable captive populations derived from the Southern and Central ESUs. 4. Undertake translocations to improve the genetic and demographic robustness of populations and to establish new colonies of brush-tailed rock-wallabies.

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
5. Investigate key aspects of brush-tailed rock-wallaby biology and ecology for conservation management. 6. Increase community awareness and support for brush-tailed rock-wallaby conservation. The Proposed Activity will result in the removal of approximately 14.08 ha of suitable habitat for this species. There are no records of this species within the 10 km database search of the Proposed Activity Area. It is unlikely that the Proposed Activity will interfere substantially with the recovery of the brush-tailed rock-wallaby.
Conclusion
The Proposed Activity will remove 14.08 ha suitable brush-tailed rock wallaby habitat. There is extensive and higher quality habitat for these species present within the surrounding area. Given the small scale of the proposed impact and availability of vast and superior habitat within the vicinity of the Proposed Activity Area and the retention of connectivity in the landscape it is unlikely that the Proposed Activity will significantly impact the brush-tailed rock wallaby.

EPBC Act Assessment of Significance – Corben's long-eared bat (*Nyctophilus corbeni*) and grey-headed flying-fox (*Pteropus poliocephalus*) – Vulnerable

Corben's long-eared bat (*Nyctophilus corbeni*) – Vulnerable

Corben's long-eared bat is distributed throughout the Murray-Darling Basin, with the Pilliga Scrub region being a distinct stronghold. This species inhabits a variety of vegetation types, including mallee, bulloke, and box eucalypt-dominated communities, but is more common in box/ironbark/cypress-pine vegetation along the western slopes and plains of NSW and southern Queensland. It roosts in tree hollows, crevices, and under loose bark (OEH 2017).

This species has been recorded around 5 km from the Proposed Activity Area in recent history. There is a moderate likelihood of occurrence based on the presence of suitable habitat in the western end of the Proposed Activity Area (box eucalypt communities, tree hollows, crevices, and loose bark).

There is currently no definition of an important population for this species.

Corben's long-eared bat has been recorded once within the 10 km buffer of the Proposed Activity Area. This species is only associated with PCT 393 within the Proposed Activity Area, making up approximately 5.11 ha of suitable habitat.

Grey-headed flying-fox (*Pteropus poliocephalus*) – Vulnerable

The grey-headed flying-fox is generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. This species inhabits subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths, swamps, urban gardens, and cultivated fruit crops. Roosting camps are typically located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy (OEH 2020).

There is a moderate likelihood of occurrence due to potential foraging areas located within the Proposed Activity Area, and because the Proposed Activity Area is located within 25 km of the grey-headed flying-fox camp at Muswellbrook.

The grey-headed flying-fox has been recorded 16 times within the 10 km database search of the Proposed Activity Area. This species is associated with PCT 393, PCT 3431, PCT 3767, and PCT 4089 within the Proposed Activity Area and would utilise the flowering native planted vegetation, making up approximately 16.47 ha of suitable habitat for the species.

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

Lead to a long-term decrease in the size of an important population of the species

Corben's long-eared bat:

There is currently no definition of an important population for this species. Corben's long-eared bat has been recorded once within the 10 km database search of the Proposed Activity Area. This species is only associated with PCT 393 within the Proposed Activity Area, making up approximately 5.11 ha of suitable habitat to be removed. The Proposed Activity is considered unlikely to lead to a long-term decrease in the size of an important population of this species.

Grey-headed flying-fox:

The closest nationally important flying-fox camp is located in Muswellbrook, approximately 25 km south of the Proposed Activity Area. There are no important populations within the Proposed Activity Area therefore it is unlikely the Proposed Activity will lead to a long-term decrease in the size of an important population of this species.

Reduce the area of occupancy of an important population

Corben's long-eared bat:

There is currently no definition of an important population for this species. Corben's long-eared bat has been recorded once within the 10 km buffer of the Proposed Activity Area. This species is only associated with PCT 393 within the Proposed Activity Area, making up approximately 5.11 ha of suitable habitat to be removed.

The Proposed Activity is considered unlikely to reduce the area of occupancy of an important population of this species.

Grey-headed flying-fox:

The closest nationally important flying-fox camp is located in Muswellbrook, approximately 25 km south of the Proposed Activity Area. There are no important populations within the Proposed Activity Area therefore it is unlikely the Proposed Activity will reduce the area of occupancy of an important population of this species.

Fragment an existing important population into two or more populations

Corben's long-eared bat:

There is currently no definition of an important population for this species. Corben's long-eared bat has been recorded once within the 10 km buffer of the Proposed Activity Area. This species is only associated with PCT 393 within the Proposed Activity Area, making up approximately 5.11 ha of suitable habitat to be removed. The Proposed Activity is considered unlikely to fragment an existing important population of this species into two or more populations.

Grey-headed flying-fox:

The closest nationally important flying-fox camp is located in Muswellbrook, approximately 25 km south of the Proposed Activity Area. There are no important populations within the Proposed Activity Area therefore it is unlikely the Proposed Activity will fragment an existing important population of this species into two or more populations.

Adversely affect habitat critical to the survival of a species

Corben's long-eared bat:

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
There is currently no definition of critical habitat for this species. The Proposed Activity is considered unlikely to adversely affect habitat critical to the survival of this species. **Grey-headed flying-fox:** As noted in the grey-headed flying-fox National recovery Plan (DAWE 2021), 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. The Proposed Activity Area is considered contain habitat critical to the grey-headed flying-fox on the basis of its associated PCTs within the Area providing important winter and spring flowering species that are considered to be critical to the survival of this species. The Proposed Activity will result in the removal of approximately 16.47 ha of suitable habitat for this species. The Proposed Activity Area is highly fragmented as a result of historic agricultural land practices with the exception of the west section of the Proposed Activity Area. The narrow (generally 30 m wide except for 520 m of 36.18 m width) easement associated with the Proposed Activity will only see a permanent loss of canopy and some shrub species but will retain the ground layers that will continue to facilitate the movement of this species between existing patches of vegetation contain suitable habitat. The Proposed Activity is considered unlikely to adversely affect habitat critical to the survival of this species.
Disrupt the breeding cycle of an important population
Corben's long-eared bat: There is currently no definition of an important population for this species. Corben's long-eared bat has been recorded once within the 10 km buffer of the Proposed Activity Area. This species is only associated with PCT 393 within the Proposed Activity Area, making up approximately 5.11 ha of suitable habitat to be removed. The Proposed Activity is considered unlikely to disrupt the breeding cycle of an important population of this species. **Grey-headed flying-fox:** The closest nationally important flying-fox camp is located in Muswellbrook, approximately 25 km south of the Proposed Activity Area. There are no important populations within the Proposed Activity Area therefore it is unlikely the Proposed Activity will disrupt the breeding cycle of an important population of this species.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
Corben's long-eared bat: There is currently no definition of an important population for this species. Corben's long-eared bat has been recorded once within the 10 km buffer of the Proposed Activity Area. This species is only associated with PCT 393 within the Proposed Activity Area, making up approximately 5.11 ha of suitable habitat to be removed.

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
The Proposed Activity is considered unlikely to modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that this species is likely to decline. **Grey-headed flying-fox:** he Proposed Activity will remove approximately 16.47 ha of suitable foraging habitat for this species The closest nationally important flying-fox camp is located in Muswellbrook, approximately 25 km south of the Proposed Activity Area. Given there are no important populations within the Proposed Activity Area therefore it is unlikely the Proposed Activity will modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that this species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat
Corben's long-eared bat: According to the Conservation Advice for this species (TSSC 2015), Corben's long-eared bat is threatened by predation from invasive species such as European red fox (*Vulpes vulpes*), and feral cat (*Felis catus*). The Proposed Activity will remove approximately 5.11 ha of suitable habitat for this species. The Proposed Activity is unlikely to result in invasive species that are harmful to the grey-headed flying-fox becoming established in this species' habitat. **Grey-headed flying-fox:** Invasive species are not noted as a specific threat to this species within the National Recovery Plan (DAWE 2021). The Proposed Activity will remove approximately 16.47 ha of suitable habitat for this species. The Proposed Activity is unlikely to result in invasive species that are harmful to the grey-headed flying-fox becoming established in this species' habitat.
Introduce disease that may cause the species to decline, or
Corben's long-eared bat: There are no diseases noted as a specific threat to Corben's long-eared bat within the Conservation Advice for this species (TSSC 2015). The Proposed Activity will remove approximately 5.11 ha of suitable habitat for this species. The Proposed Activity is unlikely that the Proposed Activity will introduce a disease that may cause this species to decline. **Grey-headed flying-fox:** There are no diseases noted as a specific threat to this species within the National Recovery Plan (DAWE 2021). The Proposed Activity will remove approximately 16.47 ha of suitable habitat for this species. The Proposed Activity is unlikely that the Proposed Activity will introduce a disease that may cause this species to decline.
Interfere substantially with the recovery of the species.
Corben's long-eared bat: There is currently no recovery plan for Corben's long-eared bat. The conservation Advice for this species (TSSC 2015) notes the following as threats to this species: • Habitat loss and fragmentation • Fire • Reduction in hollow availability

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
• Exposure to agrichemicals • Grazing • Predation by feral animals While the Proposed Activity is anticipated to remove approximately 5.11 ha of suitable habitat for this species, the Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The Proposed Activity is considered unlikely to interfere substantially with the recovery of this species. **Grey-headed flying-fox:** As noted in the National Recovery Plan for this species, the overall objectives of this grey-headed flying-fox recovery plan are: • to improve the grey-headed flying-foxes national population trend by reducing the impact of the threats outlined in this plan on grey-headed flying-foxes through habitat identification, protection, restoration and monitoring, and • to assist communities and grey-headed flying-foxes to coexist through better education, stakeholder engagement, research, policy and continued support to fruit growers. While the Proposed Activity is anticipated to remove approximately 16.47 ha of suitable habitat for this species, the Proposed Activity Area is currently highly fragmented as a result of historic agricultural land practices. Extensive areas of similar or higher quality foraging and breeding habitat for these species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). The Proposed Activity is considered unlikely to interfere substantially with the recovery of this species.
Conclusion
The Proposed Activity will remove 5.11 ha of suitable Corben's long-eared bat habitat and 16.47 ha of suitable grey-headed flying-fox habitat. There is extensive and higher quality habitat for these species present within the surrounding area. Thus, given the small scall of the proposed impact and availability of vast and superior habitat within the vicinity of the Proposed Activity Area, it is unlikely that the Proposed Activity will significantly impact these species.

EPBC Act Assessment of Significance – Large-eared pied bat (*Chalinolobus dwyeri*) – Endangered

The large-eared pied bat is 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. The species roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the fairy martin (*Petrochelidon ariel*), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. It is found in well-timbered areas containing gullies (OEH 2025).

The large-eared pied bat has been recorded seven times within the 10 km database search of the Proposed Activity Area. This species is associated with PCT 393, PCT 3431 and PCT 3767 within the Proposed Activity Area, making up approximately 14.08 ha of suitable habitat for the species.

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:

Lead to a long-term decrease in the size of a population
The Proposed Activity will result in the removal of up to approximately 14.08 ha of native vegetation, which forms potential foraging habitat for this species. The native vegetation consists of scattered patches (3.31 ha) amongst cleared agricultural land with the exception of 10.77 ha that has some connectivity to the escarpment vegetation around Owens Gap. The vegetation proposed to be removed is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that will continue to provide connectivity between patches of vegetation post construction. In addition, extensive areas of similar or higher quality foraging habitat for this species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). Due to the extensive habitat within the vicinity of the Proposed Activity Area and minimal habitat loss proposed by the Proposed Activity, it is unlikely that the Proposed Activity will lead to a long-term decrease in the size of a population of this species
Reduce the area of occupancy of the species
The Proposed Activity will result in the removal of up to approximately 14.08 ha of native vegetation, which forms potential foraging habitat for this species. The native vegetation consists of scattered patches (3.31 ha) amongst cleared agricultural land with the exception of 10.77 ha that has some connectivity to the escarpment vegetation around Owens Gap. The vegetation proposed to be removed is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that will continue to provide connectivity between patches of vegetation post construction. In addition, extensive areas of similar or higher quality foraging habitat for this species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). Due to the extensive habitat within the vicinity of the Proposed Activity Area and minimal habitat loss proposed by the Proposed Activity, it is unlikely that the Proposed Activity will reduce the area of occupancy of a population of this species.
Fragment an existing population into two or more populations
The Proposed Activity will result in the removal of up to approximately 14.08 ha of native vegetation, which forms potential foraging habitat for this species. The native vegetation consists of scattered patches (3.31 ha) amongst cleared agricultural land with the exception of 10.77 ha that has some connectivity to the escarpment vegetation around Owens Gap. The vegetation proposed to be removed is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that will continue to provide connectivity between patches of vegetation post construction. In addition, extensive areas of similar or higher quality foraging habitat for this species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). Due to the extensive habitat within the vicinity of the Proposed Activity Area and minimal habitat loss proposed by the Proposed Activity, it is unlikely that the Proposed Activity will fragment an existing important population into two or more populations.

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:
Adversely affect habitat critical to the survival of a species
Habitat that is considered critical to the survival of the large-eared pied bat is roosting and breeding habitat the species is dependent on such as caves, overhangs, or other landscape features for shelter. Large-eared pied bat roosting habitat includes areas with cliffs, escarpments or rocky outcrops, typically sandstone but also rhyolite in central-eastern NSW and south-eastern and central Qld. The structure of maternity roosts appears to be particularly specific (arched caves with domed roofs), which mean appropriate caves are uncommon in the landscape. In addition, these features are required to be within a couple of kilometres of foraging habitat. The Proposed Activity will result in the removal of up to approximately 14.08 ha of native vegetation, which forms potential foraging habitat for this species. The native vegetation consists of scattered patches (3.31 ha) amongst cleared agricultural land with the exception of 10.77 ha that has some connectivity to the escarpment vegetation around Owens Gap. There was no suitable roosting or breeding habitat observed during the field survey. Based on the lack of roosting ad breeding habitat and the minor loss of foraging habitat it is unlikely the Proposed Activity will adversely affect habitat critical to the survival of this species.
Disrupt the breeding cycle of a population
The Proposed Activity will result in the removal of up to approximately 14.08 ha of native vegetation, which forms potential foraging habitat for this species. The native vegetation consists of scattered patches (3.31 ha) amongst cleared agricultural land with the exception of 10.77 ha that has some connectivity to the escarpment vegetation around Owens Gap. The vegetation proposed to be removed is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that will continue to provide connectivity between patches of vegetation post construction. In addition, extensive areas of similar or higher quality foraging habitat for this species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). This species has been recorded within the 10 km buffer of the Proposed Activity Area. coupled with the small area proposed to be impacted and the retention of connectivity in the landscape as well as no breeding habitat in the form of caves, it is unlikely that the Proposed Activity will disrupt the breeding cycle of a population of this species.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
The Proposed Activity will result in the removal of up to approximately 14.08 ha of native vegetation, which forms potential foraging habitat for this species. The native vegetation consists of scattered patches (3.31 ha) amongst cleared agricultural land with the exception of 10.77 ha that has some connectivity to the escarpment vegetation around Owens Gap. The vegetation proposed to be removed is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that will continue to provide connectivity between patches of vegetation post construction. In addition, extensive areas of similar or higher quality foraging habitat for this species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). This species has been recorded within the 10 km buffer of the Proposed Activity Area on seven occasions. However, given the small area proposed to be impacted and the retention of connectivity in the landscape as well as no breeding habitat in the form of caves, it is unlikely that

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:
the Proposed Activity will modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat
The Conservation Advice for this species (DCCEEW 2023) notes predation from invasive species such as European red fox (*Vulpes vulpes*), and feral cats (*Felis catus*) are a threat to this species. The Proposed Activity will result in the removal of up to approximately 14.08 ha of native vegetation, which forms potential foraging habitat for this species. The native vegetation consists of scattered patches (3.31 ha) amongst cleared agricultural land with the exception of 10.77 ha that has some connectivity to the escarpment vegetation around Owens Gap. The vegetation proposed to be removed is within a narrow (generally 30 m wide except for 520 m of 36.18 m width) easement that will continue to provide connectivity between patches of vegetation post construction. In addition, extensive areas of similar or higher quality foraging habitat for this species occur in the surrounding locality and region, some of which are protected. These include Towarri NP and Wingen NR to the north (6 km and 13 km away, respectively) and Scone Mountain NP to the east (11 km away). This species has been recorded within the 10 km buffer of the Proposed Activity Area on seven occasions. However, given the small area proposed to be impacted and the retention of connectivity in the landscape as well as no breeding habitat in the form of caves, it is unlikely that the Proposed Activity will result in invasive species that are harmful to large-eared pied bat becoming established in this species' habitat.
Introduce disease that may cause the species to decline, or
The impact of diseases, including but not limited to, whitenose syndrome (WNS) is a potential threat to the species. White-nose syndrome is caused by the fungus *Pseudogymnoascus destructans* and leads to death through an infection of the muzzle and other parts of the body. The Proposed Activity is unlikely to introduce disease that may cause the species to decline.
Interfere substantially with the recovery of the species.
There is currently no recovery plan for this species. As noted in the species Conservation Advice (DCCEEW 2024), the species is affected by a range of threats. While the Proposed Activity will include foraging habitat loss for this species, the marginal loss of this habitat is considered unlikely to interfere substantially with the recovery of this species.
Conclusion
The Proposed Activity is unlikely to significantly impact this species.

EPBC Act Assessment of Significance – Pink-tailed legless lizard (*Aprasia parapulchella*) – Vulnerable

The pink-tailed legless lizard is primarily known from the Central and Southern Tablelands and the South Western Slopes, with a concentration of populations in the Canberra/Queanbeyan region. Other populations have been recorded near Cooma, Yass, Bathurst, Albury, and West Wyalong. This species inhabits sloping, open woodland areas with predominantly native grassy ground layers, particularly those dominated by Kangaroo Grass (OEH 2024).

There is a moderate likelihood of occurrence due to potential habitat located in the Proposed Activity Area up the escarpment toward Owens Gap (rocky areas).

This species is not associated with any PCTs recorded in the Proposed Activity Aea, however suitable rocky habitat exists within PCT 393 and PCT 3767. Therefore, the Proposed Activity is anticipated to remove approximately10.77 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area.

There is currently no definition of an important population for this species, nor is there currently a definition of habitat critical to the survival of this species.

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

Lead to a long-term decrease in the size of an important population of the species
This species is not associated with any PCTs recorded in the Proposed Activity Aea, however suitable rocky habitat exists within PCT 393 and PCT 3767. Therefore, the Proposed Activity is anticipated to remove approximately 10.77 ha of suitable habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in which this species inhabits may not be completely removed as part of the construction and where removed it is likely sections will naturally re-establish over time. As there no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity will lead to a long-term decrease in the size of a population of this species.
Reduce the area of occupancy of an important population
This species is not associated with any PCTs recorded in the Proposed Activity Aea, however suitable rocky habitat exists within PCT 393 and PCT 3767. Therefore, the Proposed Activity is anticipated to remove approximately 10.77 ha of suitable habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in which this species inhabits may not be completely removed as part of the construction and where removed it is likely sections will naturally re-establish over time. As there no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity will reduce the area of occupancy of an important population of this species.
Fragment an existing important population into two or more populations
This species is not associated with any PCTs recorded in the Proposed Activity Aea, however suitable rocky habitat exists within PCT 393 and PCT 3767. Therefore, the Proposed Activity is anticipated to remove approximately 10.77 ha of suitable habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in which this species inhabits may not be completely removed as part of the construction and where removed it is likely sections will naturally re-establish over time. As there no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity to fragment an existing important population into two or more populations.
Adversely affect habitat critical to the survival of a species
This species is not associated with any PCTs recorded in the Proposed Activity Aea, however suitable rocky habitat exists within PCT 393 and PCT 3767. Therefore, the Proposed Activity is anticipated to remove approximately 10.77 ha of suitable habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
which this species inhabits may not be completely removed as part of the construction and where removed it is likely sections will naturally re-establish over time. As there no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity will adversely affect habitat critical to the survival of a species.
Disrupt the breeding cycle of an important population
This species is not associated with any PCTs recorded in the Proposed Activity Aea, however suitable rocky habitat exists within PCT 393 and PCT 3767. Therefore, the Proposed Activity is anticipated to remove approximately 10.77 ha of suitable habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in which this species inhabits may not be completely removed as part of the construction and where removed it is likely sections will naturally re-establish over time. As there no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity to disrupt the breeding cycle of an important population of this species.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
This species is not associated with any PCTs recorded in the Proposed Activity Aea, however suitable rocky habitat exists within PCT 393 and PCT 3767. Therefore, the Proposed Activity is anticipated to remove approximately 10.77 ha of suitable habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in which this species inhabits may not be completely removed as part of the construction and where removed it is likely sections will naturally re-establish over time. As there no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity will modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat
Invasive species including the European red fox (*Vulpes vulpes*) and feral cat (*Felis catus*). are noted as a threat to the pink-tailed worm lizard in its Conservation Advice (TSSC 2015). This species is not associated with any PCTs recorded in the Proposed Activity Aea, however suitable rocky habitat exists within PCT 393 and PCT 3767. Therefore, the Proposed Activity is anticipated to remove approximately 10.77 ha of suitable habitat for this species. There are no records of this species within the 10 km buffer of the Proposed Activity Area. Thus, the Proposed Activity is considered unlikely to result in invasive species that are harmful to the pink-tailed legless lizard becoming established in this species' habitat.
Introduce disease that may cause the species to decline, or
There are no diseases recorded as a threat to the pink-tailed legless lizard in its Conservation Advice (TSSC 2015). The Proposed Activity is considered unlikely to introduce disease that may cause this species to decline.
Interfere substantially with the recovery of the species.
There is no recovery plan for this species. The Conservation Advice for pink-tailed legless lizard (TSSC 2015), however notes the following as key threats to the species:

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

- Habitat loss and fragmentation
- Habitat degradation
- Removal of rocks
- Inappropriate fire regimes
- Predators

While the Proposed Activity will include habitat loss for this species, the marginal loss of potential habitat is considered unlikely to interfere substantially with the recovery of this species.

Conclusion

The Proposed Activity is unlikely to significantly impact this species.

EPBC Act Assessment of Significance – Hunter Valley Delma (*Delma vescolineata*) – Endangered

The Hunter Valley delma is endemic to NSW and is currently known to occur in the Hunter Valley, from Maitland to Muswellbrook, and on the Liverpool Plains. This species inhabits grassy woodlands and open forests, often found in areas with a mix of native grasses and shrubs. It relies on ground cover and leaf litter for shelter and foraging, feeding on small invertebrates (OEH 2024).

There is a moderate likelihood of occurrence due to potential habitat located in the Proposed Activity Area in the transitional areas between the escarpment and floodplains.

This species has a range of PCTs currently listed in the TBDC, and habitat for the species also includes exotic dominated non-woody groundcover without enough native species to assign a PCT. This species is often found in sparce or degraded open areas of non-native vegetation. Therefore, a precautionary approach has been taken and the inclusion non-native grasslands in addition to associated PCTs listed for this species in the TBDC. . The Proposed Activity is anticipated to remove approximately 41.18 ha of potential habitat for this species. There are no records of this species within the 10 km database search of the Proposed Activity Area.

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:

Lead to a long-term decrease in the size of a population

The Proposed Activity is anticipated to remove approximately 41.18 ha of potential habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in which this species inhabits may not be completely removed as part of the construction and where it is removed, it is likely sections will naturally re-establish over time.

As there no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity will lead to a long-term decrease in the size of a population of this species.

Reduce the area of occupancy of the species

The Proposed Activity is anticipated to remove approximately 41.18 ha of potential habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in which this species inhabits may not be completely removed as part of the construction and where it is removed, it is likely sections will naturally re-establish over time..

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:
As there no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity to reduce the area of occupancy of a population of this species.
Fragment an existing population into two or more populations
The Proposed Activity is anticipated to remove approximately 41.18 ha of potential habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in which this species inhabits may not be completely removed as part of the construction and where it is removed, it is likely sections will naturally re-establish over time. As there no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity to fragment an existing important population into two or more populations.
Adversely affect habitat critical to the survival of a species
As noted in the Conservation Advice for this species (DCCEEW 2024), the habitat critical to the survival of the Hunter Valley delma is not well understood, but likely includes the secondary native grassland of the Hunter Valley between Maitland and Muswellbrook where the species is known to occur. The Proposed Activity is anticipated to remove approximately 41.18 ha of potential habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in which this species inhabits may not be completely removed as part of the construction and where it is removed, it is likely sections will naturally re-establish over time. As there no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity to adversely affect habitat critical to the survival of this species.
Disrupt the breeding cycle of a population
The Proposed Activity is anticipated to remove approximately 41.18 ha of potential habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in which this species inhabits may not be completely removed as part of the construction and where it is removed, it is likely sections will naturally re-establish over time. As there no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity will disrupt the breeding cycle of a population of this species.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
The Proposed Activity is anticipated to remove approximately 41.18 ha of potential habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in which this species inhabits may not be completely removed as part of the construction and where it is removed, it is likely sections will naturally re-establish over time. As there are no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity will modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.
Result in invasive species that are harmful to an endangered species becoming established in the endangered species' habitat

An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:
The Conservation Advice for this species (DCCEEW 2024) notes predation from invasive species such as European red fox (*Vulpes vulpes*), dogs (*Canis familiaris*), and feral cats (*Felis catus*) are a threat to this species. The Proposed Activity is anticipated to remove approximately 41.18 ha of potential habitat for this species. The removal of potential habitat will be restricted to the canopy and midstorey strata therefore the groundlayer in which this species inhabits may not be completely removed as part of the construction and where it is removed, it is likely some sections will naturally re-establish over time. As there are no known records of this species in the locality coupled with the retention and re-establishment of the groundlayer it is unlikely the Proposed Activity will result in invasive species that are harmful to Hunter Valley delma becoming established in this species' habitat.
Introduce disease that may cause the species to decline, or
There are no diseases recorded as a threat to this species within the Conservation Advice for this species (DCCEEW 2024). Thus, the Proposed Activity is unlikely to introduce disease that may cause the species to decline.
Interfere substantially with the recovery of the species.
There is currently no recovery plan for this species. As noted in the species Conservation Advice (DCCEEW 2024), the species is affected by a range of threats across different subpopulations, notably mining activity, agriculture and urban expansion (habitat loss and degradation) and climate change (increased frequency and intensity of fires and drought). While the Proposed Activity will include habitat loss for this species, the marginal loss of suitable habitat is considered unlikely to interfere substantially with the recovery of this species.
Conclusion
The Proposed Activity is unlikely to significantly impact this species.

Appendix D

Protected Matters Search Tool Results

umwelt

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: 29-Jan-2026

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

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	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	10
Listed Threatened Species:	43
Listed Migratory Species:	9

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:	2
Commonwealth Heritage Places:	1
Listed Marine Species:	20
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:	None
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	5
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
Hunter estuary wetlands	100 - 150km upstream from Ramsar site

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
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community may occur within area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area
Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia	Endangered	Community may occur within area
Hunter Valley Weeping Myall (Acacia pendula) Woodland	Critically Endangered	Community may occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within 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
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community may occur within area
Weeping Myall Woodlands	Endangered	Community may occur within area

Community Name	Threatened Category	Presence Text
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area

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
BIRD		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area
FISH		
Galaxias sp. nov. 'Hunter' Hunter Galaxias, Hunter Upland Galaxias [90728]	Critically Endangered	Species or species habitat may occur within area
FROG		

Scientific Name	Threatened Category	Presence Text
Litoria booroolongensis		
Booroolong Frog [1844]	Endangered	Species or species habitat may occur within area
MAMMAL		
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat known to occur within area
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Nyctophilus corbeni		
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area
Petaurus australis australis		
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat may occur within area
Petrogale penicillata		
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within 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
Potorous tridactylus tridactylus		
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat may occur within area
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
PLANT		

Scientific Name	Threatened Category	Presence Text
Androcalva procumbens [87153]	Vulnerable	Species or species habitat may occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area
Lepidium aschersonii Spiny Peppercress [10976]	Vulnerable	Species or species habitat may occur within area
Ozothamnus tesselatus [56203]	Vulnerable	Species or species habitat may occur within area
Picris evae Hawkweed [10839]	Vulnerable	Species or species habitat may occur within area
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area
Prostanthera cineolifera [11233]	Vulnerable	Species or species habitat may occur within area
Swainsona murrayana Slender Darling-pea, Slender Swainson, Murray Swainson-pea [6765]	Vulnerable	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Vincetoxicum forsteri listed as Tylophora linearis [92384]	Endangered	Species or species habitat may occur within area
REPTILE		

Scientific Name	Threatened Category	Presence Text
[Aprasia parapulchella](#)		
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area
[Delma vescolineata](#)		
Hunter Valley Delma [92599]	Endangered	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
[Apus pacificus](#)		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
[Hirundapus caudacutus](#)		
White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
[Motacilla flava](#)		
Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
[Actitis hypoleucos](#)		
Common Sandpiper [59309]		Species or species habitat may occur within area
[Calidris acuminata](#)		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
[Calidris ferruginea](#)		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
[Calidris melanotos](#)		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
[Gallinago hardwickii](#)		
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pandion haliaetus		
Osprey [952]		Species or species habitat may occur within area

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
Australian Postal Corporation	
Lot 3 DP700953 [AGPR7143]	NSW
Department of Climate Change, Energy, the Environment and Water	
Scone Post Office [CHL_106199]	NSW

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
Scone Post Office	NSW	Listed place

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Bubulcus ibis as Ardea ibis		
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area

Extra Information

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State
Lower North East	New South Wales

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Queensland Hunter Gas Pipeline, approximately 825 km in length	2008/4483	Controlled Action	Completed
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
Kyoto Alternative Energy Farm	2008/3979	Not Controlled Action	Completed
Queensland Hunter Gas Pipeline, approximately 833 km in length	2008/4620	Not Controlled Action	Completed
Not controlled action (particular manner)			
Aerial baiting for wild dog control	2006/2713	Not Controlled Action (Particular Manner)	Post-Approval

Bioregional Assessments		[Resource Information]
SubRegion	BioRegion	Website
Hunter	Northern Sydney Basin	BA website

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.

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6 February 2026

Yannick Zapf
Principal Advisor
YZ Consulting c/o Maven Renewable Energy Pty Ltd

E yannick.zapf@yzconsulting.com.au

Dear Yannick

RE: Upper Hunter Energy Park – Aboriginal Heritage Due Diligence Assessment

1.0 Introduction

YZ Consulting on behalf of Maven Renewable Energy Pty Ltd (Maven) engaged Umwelt to prepare an Aboriginal Heritage Due Diligence Assessment (AHDDA) to support a Review of Environmental Factors (REF) for a proposed 66 kilovolt (kV) Overhead Line and access track associated with the Upper Hunter Energy Park (UHEP) (hereafter 'the Proposed Activity'), located in Scone, New South Wales (NSW).

An AHDDA was prepared by Umwelt in May 2025 for the original alignment of the Proposed Activity. Following the assessment, changes were made to alignment and access that required further assessment. This AHDDA covers the entire updated alignment and associated activities (as described in **Section 2.0**) including the relevant outcomes from the original AHDDA and subsequent assessment.

The Proposed Activity will be undertaken by Maven on behalf of Ausgrid, utilising Ausgrid's registration as an Authorised Network Operator (ANO) in NSW, and powers as a public consent authority, under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

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2.0 The Proposed Activity

The Proposed Activity will include the construction, operation and maintenance of an overhead 66 kV line connecting from the UHEP to the existing Scone substation. In addition, works also include clearing to allow for the use of an existing access track and a new proposed access track, relocation of an existing 11 kV powerline to run underneath the proposed 66kV line for a length of 942 m (as agreed with Upper Hunter Shire Council) and the installation of an additional pole adjacent to the existing Scone substation (refer to **Figure 2.1**).

An easement will be created in order to accommodate the proposed activity. The easement is proposed to have a width of 30 m, being 15 m either side of the overhead line except for 520 m on steeper terrain on Moobi Ridge where the easement is proposed to be 36.18 m (18.09 m either side) to accommodate the terrain.

The overhead line will be attached to steel poles, each being between 20 m and 55 m in height. Each pole will be spaced at a distance ranging from approximately 40 m to 520 m. All poles will be installed on direct embedment foundations around 950 mm to 1,500 mm in diameter and of varying lengths to an average depth of 3 m. The steel poles will be anchored using embedded bolts or base plates, depending on site-specific conditions.

2.1 The Proposed Activity Area

The UHEP is located approximately 10 km west of Scone in the Upper Hunter Shire Local Government Area (LGA) in NSW. The Proposed Activity Area comprises the alignment for the overhead line including the 30 m easement from the UHEP to connect to the existing electricity grid at Scone substation (Lot 403 DP1119120).

The Proposed Activity Area is located within Wonnarua country which extends from the Upper Hunter River above Maitland, west to the Great Dividing Range, towards Wollombi. The Local Aboriginal Land Council is the Wanaruah Local Aboriginal Land Council (LALC). No Native Title Claims have been determined within the Proposed Activity Area and environs.

The Proposed Activity will include the following, noting not all works will require ground disturbance:

- survey work
- establishing structures such as fencing and hoarding
- installing pre-construction mitigation measures, such as erosion, sediment and water quality controls, fencing sensitive areas
- relocating utilities, services and signage
- clearing vegetation where it cannot be avoided along the alignment and temporary access track
- establishing a construction compound and stockpile sites
- establishing temporary construction facilities
- establishing proposed access via upgrading existing farm tracks
- establishing work pads within the easement
- establishing a new access track on steep terrain of the Moobi ridgeline

- erecting 81 new poles
- stringing the transmission line between erected poles
- storing and stockpiling equipment
- testing and commissioning
- relocating the existing 11 kV overhead line to be located with the Proposed Activity Area
- rehabilitating topsoil and re-vegetation
- restoring the Proposed Activity Area (including general site cleanup and removing site compounds, temporary construction facilities and temporary environmental controls).

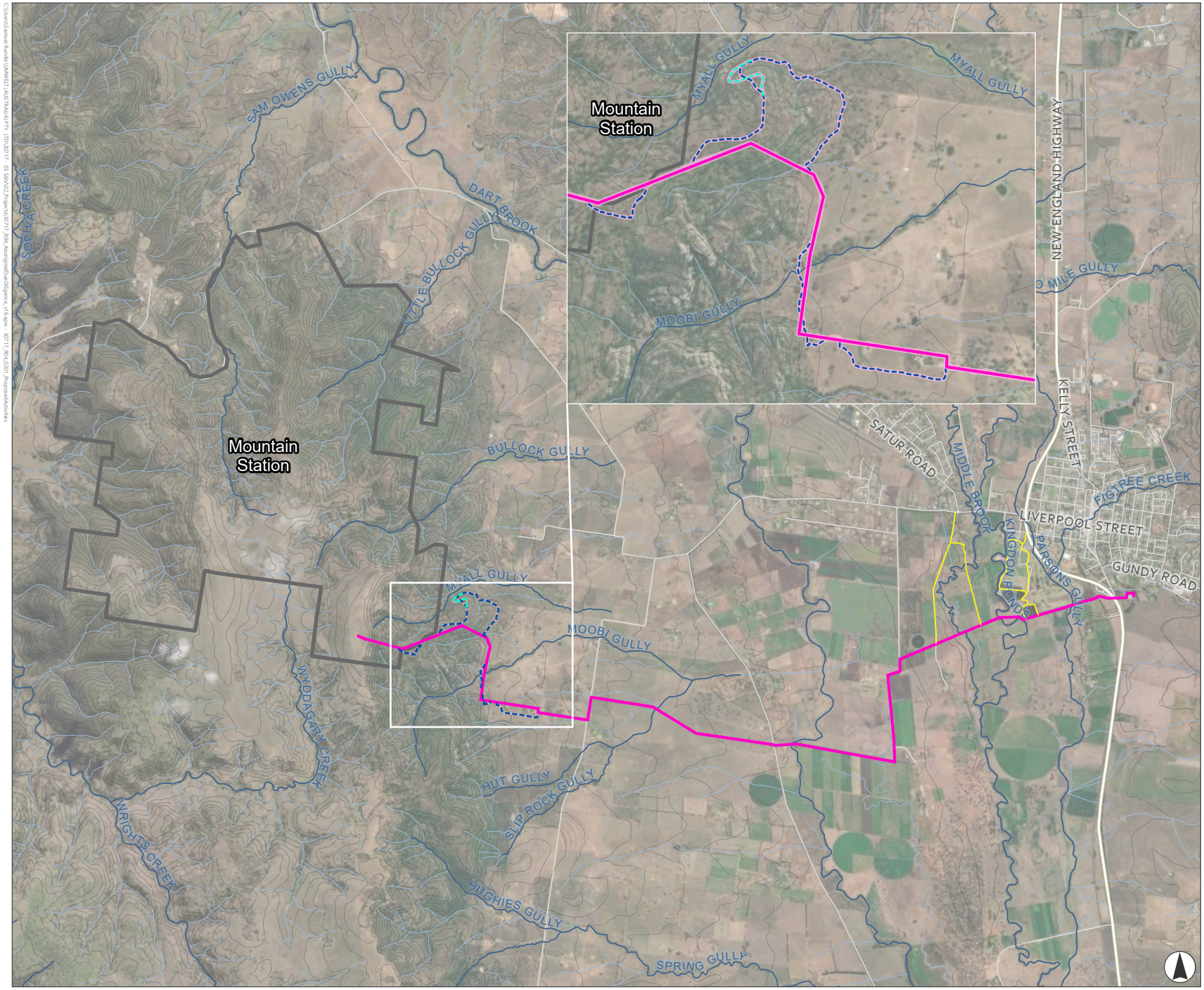

Figure 2.1

Upper Hunter Energy Park Proposed Activities

Legend

- Upper Hunter Energy Park Project Area
- 20m Contour
- Highway
- Main / Local Roads
- Named Watercourse
- Watercourse
- Proposed 66kV Power Line Route
- Proposed Activity Area

Proposed Access Track – New

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

0 1 2 3

Kilometres

Scale 1:72,000 at A4
GDA2020 MGA Zone 56

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Image Source: ESRI Basemap (2024) | **Data Source:** NSW DFSI (2024)

3.0 Assessment Framework

The *National Parks and Wildlife Act 1974* (NPW Act) provides that a proponent who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later unknowingly harm an object without an Aboriginal Heritage Impact Permit (AHIP).

The NPW Act defines an Aboriginal object as:

..any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales.

The National Parks and Wildlife Regulation 2019 (NPW Regulation) provides a framework for exercising due diligence, including the guidelines which this report adheres to: the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW, 2010)(the Due Diligence Code).

This assessment has been prepared in accordance with the Due Diligence Code process This report assesses the likelihood of Aboriginal objects being harmed by a proposed activity, whether or not further investigation is warranted, and whether the activities require an AHIP application (DECCW, 2010, p. 2).

4.0 Environmental Context

The following section details the environmental setting of the Proposed Activity Area and environs, with a particular focus on landscape features. Aboriginal objects are often associated with landscape features because of Aboriginal people's use of those features in their everyday lives and for traditional cultural activities. Certain landforms were more conducive to long-term habitation, which have a greater likelihood of containing Aboriginal objects than locations that were used for transitory movement. It is therefore critical to determine whether the Proposed Activity Area contains landscape features that indicate the likely existence of Aboriginal objects (DECCW, 2010, p. 12).

This section also describes any land use disturbance which has occurred in the Proposed Activity Area which would impact the preservation of Aboriginal sites.

4.1 Landscape Setting

Key observations from a review of the landscape context of the Proposed Activity Area is presented in **Table 4.1**.

Table 4.1 Outline of Landscape Context of the Proposed Activity Area

Environmental Variable	Key Observations and Implications
Topography	The Proposed Activity Area is located across various alluvial landform elements of the Hunter River (elevation 20–60 m and slope inclination 0–3%), undulating rises and low hills with wide shallow valleys (elevation 100–260 m and slope inclination 0–10%). The western portion of the Proposed Activity Area (in proximity to Mount Moobi) consists of rolling hills to steep mountains, with sandstone cliffs, rock outcrops, a prominent ridgeline, valleys and gorges.

Environmental Variable	Key Observations and Implications
Hydrology	The Proposed Activity Area contains multiple 3rd to 4th order tributaries (*sensu* Strahler, 1952) of the Hunter River, including Parsons Gully, Kingdon Ponds, Middle Brook, Dart Brook, Moobi Gully. Additional 1st and 2nd order ephemeral creek lines and drainage gullies are dispersed across the landscape. The presence of perennial watercourses may suggest that fresh water was accessible within the Proposed Activity Area, or in the general environs.
Geology and Soils	The soil landscapes of the Proposed Activity Area can be characterised as the following (Kovac and Lawrie, 1991): • Hunter Soil Landscape: alluvial soils adjacent to river channels, brown clays and black earths on tributary flats. Topsoil (A horizon) depth varies from 10–50 cm. • Dartbrook Soil Landscape: dark brown/reddish brown clay loam, silty clay loam or sandy clay loam. Topsoil (A horizon) depth varies from 5–45 cm. Underlying geology incudes the Singleton Coal Measures, shale and sandstone. • Growee Soil Landscape: Brown/reddish brown sandy clay loam, silty clay loam or fine sand. Topsoil (A horizon) depth varies from 10–45 cm. • Lees Pinch Soil Landscape: Reddish brown to brown clayey or sandy loam. Topsoil (A horizon) depth varies from 20–65 cm. • Brays Hill Soil Landscape: Red clays, black silty clay to dull yellowish clay with strong structure. Topsoil (A horizon) depth varies from 7–30 cm. The above outlines that remnant topsoil is found across the Proposed Activity Area to varying depths. As deposits containing potential Aboriginal objects are more often found within the topsoil, this may suggest that artefact bearing soils could be present. The Proposed Activity Area is located within mapped expressions of the Narrabeen Group, Singleton Coal Measures and Tertiary basalt with parent rocks including basalt, conglomerate, sandstone, claystone, shale, acid tuff and volcanic breccia. In terms of raw materials, basalt could be utilised for the manufacturing of stone tools or implements, however the Proposed Activity Area otherwise lacks suitable material. Grinding grooves are often formed on sandstone formations or benches, in proximity to or within watercourses. In addition, rock shelters and art sites can be commonly identified within sandstone formations.
Flora and Fauna	Prior to clearing native vegetation, the Proposed Activity Area would have included open forest with some river oak. The western portion of the Proposed Activity Area retains some native vegetation communities and contains shrub woodland dominated by broad-leaved red ironbark, cypress pine, grey gum and stringybark. Bark of the stringy bark varieties of Eucalyptus, and Eucalypts trees in general, were particularly useful to Aboriginal people. Natural fibres, bark and timbers were key natural resources, and could be utilised for the manufacturing of tools, implements and containers, to shelter construction, canoes, shields and baskets (Brayshaw, 1986). Faunal species such as wallaby, kangaroo, goanna, snakes and a wide variety of birds would have populated the Scone region prior to European arrival, with populations still in existence today, albeit in lower numbers. Such species could have provided a sustainable source of food for Aboriginal people, in addition to furs, skins and bone, which could be utilised for a variety of purposes.

4.2 Land Use Disturbance

Following European occupation of the Hunter Valley in the 1820s, the landscape was subjected to a range of different modificatory activities including extensive logging and clearing, agricultural cultivation (ploughing), pastoral grazing, residential developments and mining (Lucas, Stapleton and Partners Pty Ltd, 2012). The Proposed Activity Area is currently utilised for recreation (golf course) and pastoral grazing, with the western portion retaining some vegetation due to the steep inclination and inaccessibility of the hill landforms.

A review of available historical documentation suggests that Aboriginal people or groups remained in the wider Scone area through to the mid-1840s, retaining some connection to their traditional lands and way of life despite the increasing pressures placed upon their communities by European settlers. The Blanket Returns[1] records for the Invermein/Scone area show that between 1827 and 1844, upwards of 100 blankets would be dispersed to Aboriginal families each year, which may be an indicator of population at that time.

4.3 Summary

The environmental context outlined above highlights that the Proposed Activity Area is located across a varied landscape. Whilst portions of the Proposed Activity Area comprise steep inclination hillslopes (western portion of approximately 2 km from Lot 31 DP750939 to Lot 1 DP1190322), much of the eastern portion (approximately 10 km from Lot 101 DP1118763 to Lot 403 DP1119120) is represented by generally flat to gently inclined plains and terraces. These flatter landforms could be easily traversed and may have facilitated free movements across the immediate area for Aboriginal people prior to the arrival of Europeans, whilst the presence of sandstone formations and outcrops in the west may have provided shelter. The presence of perennial water courses and associated tributaries would suggest that fresh water was available following rains and potentially throughout much of the year. This prevalence of fresh water in combination with open terrain would have encouraged grazing mammal species such as kangaroos and wallabies, providing an available source of terrestrial sustenance. Additional edible aquatic species may have been available in the creek lines. Further, before widespread vegetation clearance in the early 19th century, open forests would have dominated the landscape and provided additional natural resources.

In summary, the Proposed Activity Area would have, or does contain, an array of natural resources which could have allowed for sustainable occupation. The varied terrain may suggest that Aboriginal people utilised the flatter plains to move within the landscape and the sandstone formations of the upper slopes for shelter.

[1] NSW State Archives, Records of 19th Century blanket lists and returns of Aboriginal people.

5.0 Archaeological Context

5.1 Aboriginal Heritage Information Management System (AHIMS)

A search of the AHIMS database was undertaken on 8 January 2026, utilising the following coordinates: Latitude, Longitude from: -32.1401, 150.6632 and Latitude, Longitude to: -31.9946, 150.9104. This search encompassed the full extent of the current Proposed Activity Area and provided an overview of the archaeological context of the general landscape (**Table 5.1**). The search produced a result of 17 registered Aboriginal sites, of which 14 are valid, one 'not a site', one 'destroyed', and one 'partially destroyed'. As seen by **Table 4.1**, the most common site type in the region were artefact sites (comprising isolated lithic artefacts and/or artefact scatters) (n=9).

Additional site types identified as part of the AHIMS search include modified trees (n=5), potential archaeological deposits (n=2) and a burial (n=1). The identified burial (AHIMS site #37-2-0138) is located approximately 9 km south-west of the Proposed Activity Area and is describe as being located within a sandstone shelter on a small knoll, 250 m from a creek line.

The result of the updated AHIMS search can be viewed in **Appendix A**. No recorded Aboriginal sites are located within the Proposed Activity Area. The location of sites is shown in **Figure 5.1**[2].

Table 5.1 AHIMS Aboriginal Sites Data

Site Type	Count (n)	Percentage (%)
Artefact	9	53
Modified tree (carved or scarred)	5	29
Potential archaeological deposit (PAD)	2	12
Burial	1	6
Total	**17**	**100**

5.2 Previous Aboriginal Heritage Assessments

For contextual purposes, a review of available Aboriginal heritage assessments within or in proximity to the Proposed Activity Area has been undertaken. A summary of these assessments is provided below. It is noted that as the current Proposed Activity Area is largely situated within privately owned land, archaeological investigations have been limited to those previously undertaken during the preliminary investigations of the UHEP.

[2] Due to the distance from the Proposed Activity Area, the location of AHIMS site #37-2-0138 is not illustrated in **Figure 5.1.**

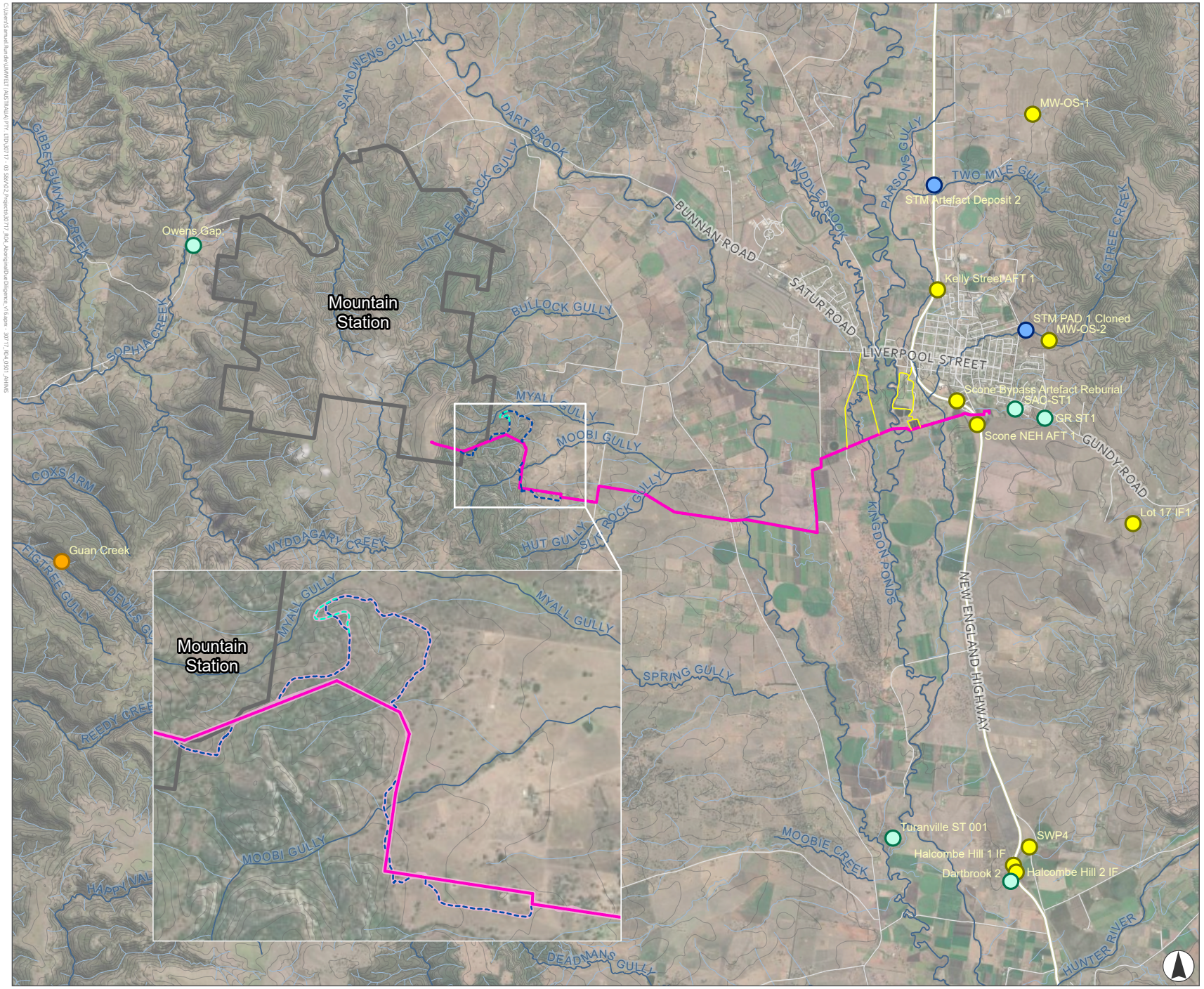

Image Source: ESRI Basemap (2024) | **Data Source:** NSW DFSI (2024)

Figure 5.1

Previously recorded Aboriginal heritage sites - AHIMS Data

Legend

- Upper Hunter Energy Park Project Area
- 20m Contour
- Highway
- Main / Local Roads
- Named Watercourse
- Watercourse
- Proposed 66kV Power Line Route
- Proposed Activity Area

AHIMS

- Artefact
- Burial
- Modified Tree (Carved or Scarred)
- Potential Archaeological Deposit (PAD)

Access Route

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

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Kilometres

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5.2.1 Regional Context

In a regional context, prior archaeological studies have identified that Aboriginal occupation in the wider Scone/Upper Hunter region dates to at least 20,000 years before present (BP) (Koettig, 1986). The majority of dated Aboriginal sites are, however, generally less than 4,000 years old and are attributed to the Holocene period. Ethno-historic accounts, such as the records of early European landowners or explorers within the Upper Hunter, provide a narrow viewpoint for the period of initial contact between white Europeans and traditional owners. However, the accounts available in Gunson (1974) and Brayshaw (1986) can provide further information as to the lifeways of Aboriginal people.

The information collated in regional studies of the Upper Hunter highlight observed trends in the archaeological record (AMBS, 2002; Davidson and Lovell-Jones, 1993; Dean-Jones and Mitchell, 1993; Koettig and Hughes, 1985; Kuskie, 1999). Open campsites are viewed as the most common site type, with artefacts (isolated or scattered) found in association, and commonly within 50–100 m to a water source. Other site types which may be encountered include grinding grooves (in associated with watercourses), modified trees, rock shelters, art sites and burials. The prevalence of artefact sites may be attributed to the durability of stone in comparison to other raw materials, such as animal skins, plant fibres or timber. In relation to the raw material of stone artefacts, mudstone and silcrete are highly represented and generally dominated assemblages. Chert, tuff, quartz, quartzite, petrified wood, basalt, limestone, sandstone, rhyolite, European glass and other non-specific lithic types can also occur in smaller quantities.

5.2.2 Local Context

Myall Coast Archaeological Services, 2008. Kyoto Energy Park, Appendix H: Aboriginal Heritage Assessment

In 2008, Myall Coastal Archaeological Services completed the preliminary feasibility study of the Kyoto Energy Park (now referred to as the Upper Hunter Energy Park (UHEP)). The UHEP is a related component of the Proposed Activity and partially overlaps with the western portion of the current Proposed Activity Area in Lots 31 DP750939, 30 DP750939, and 68 DP750950. This previous Aboriginal Heritage Assessment identified that the study area of the UHEP was likely used in the pre-colonial past by the Aboriginal community for its views and connectivity, providing possible use for song trails, connectivity to special ceremonial places and as a lookout and signalling area. It was noted in the UHEP Environmental Assessment (Pamada, 2008) that the approved transmission line routes were previously assessed and were found to be on disturbed ground, within road reserves and no Aboriginal artefacts were identified. Therefore, the likelihood of identifying previously unrecorded Aboriginal sites and or objects during the assessment of the Proposed Activity was considered to be low.

McCardle Cultural Heritage Pty Ltd, 2011. Proposed New Subdivision, Pipeline and Reservoir at Scone: Indigenous Archaeological Due Diligence Assessment

McCardle Cultural Heritage Pty Ltd was commissioned to prepare an archaeological assessment for a proposed residential subdivision and pipeline corridor and reservoir site in Scone. The study area is situated approximately 1.3 km northeast of the current Proposed Activity Area.

A review of the environmental context of the study area found that it contained raw materials (natural resources and fresh water) that would have allowed for sustained Aboriginal occupation. However, contemporary impacts to the landscape, such as agricultural practices, had disturbed the landscape and potentially impacted the archaeological record. The predictive model drafted as part of the assessment found that occupation sites would be most commonly identified adjacent to or in proximity to a watercourse, and on relatively flat to gently sloping terrain. Where the site contains an artefact scatter, it was assessed that the artefact assemblage would increase when within 50 m of a watercourse. Overall, within a well-watered context, there was found to be a high potential for archaeological material to be present on level, typically well-elevated landforms that provide ready access to low-lying waterlogged areas and the associated resources.

A field survey of the study area was conducted, with the study area being divided into three survey units based on landforms. It was noted that the study area did not contain a reliable water source and ground surface viability was limited. No Aboriginal objects or sites were identified during the course of the survey.

Insite Heritage, 2013. Scone Railway Station: heritage Impact Assessment & Aboriginal Archaeological Assessment

In 2010, Insite Heritage undertook a combined archaeological assessment of the Scone Railway Station due to required upgrade works along the Main Northern Railway line. This initial 2010 assessment was updated in 2013. The study area is located approximately 1.3 km north of the current Proposed Activity Area. The predictive model drafted for this assessment highlighted that Aboriginal sites were more prevalent in areas in close proximity to water sources, in particular perennial watercourses.

A visual inspection of the study area was undertaken within the rail corridor adjacent and compound area, to Scone railway station. Due to the high levels of disturbance and low ground surface visibility, the potential for Aboriginal sites and/or objects was assessed as low. No Aboriginal objects or areas of potential sensitivity were identified during the course of this inspection.

Insite Heritage, 2017. Lot 2 DP1169320 Gundy Road Scone NSW, Proposed Residential Subdivision: Aboriginal Cultural Heritage Assessment

In 2017, Insite Heritage undertook an Aboriginal Archaeological Assessment to address the proposed subdivision of Lot 2 DP 1169320, Gundy Road in Scone. The subdivision consisted of a 58-hectare property around a drainage/wetland reserve and situated approximately 1.2 km east of the current Proposed Activity Area. The study area had been cleared and had been impacted by agricultural and grazing activity.

A search of the AHIMS database identified no previously recorded Aboriginal sites within the study area, with one potentially modified tree situated in an adjacent lot. A visual inspection of the study area was conducted; however, no Aboriginal objects and/or sites were identified.

6.0 Visual Inspection

Three (3) separate visual inspections of the Proposed Activity Area were undertaken. Fieldwork was carried out by Umwelt Archaeologist Alison Fenwick between 15 to 16 October and 1 November 2024 and by Umwelt Senior Archaeologist Stephanie Howden between 1 and 2 December 2025.

The Proposed Activity Area generally consisted of various landform elements, including flat and flood plains, to undulating hillslopes with moderate to high inclines. Visibility across the Proposed Activity Area was generally low due to dense surface vegetation (e.g. pasture grass and low-lying shrubs). The proposed alignment transects several watercourses, including (from east to west along the Proposed Activity Area); Parsons Gully, Middle Brook, Kingdom Ponds, Dart Brook and Moobi Gully. Where practicable, these watercourses were inspected, however, due to erosional damage and stock use, the banks were generally unstable or inaccessible.

Potentially archaeologically sensitive landforms[3] in proximity to these watercourses were also inspected for potential Aboriginal sites/objects with on elevated landforms with direct access to the watercourses. Boulders and rock outcrops were inspected for areas suitable for shelter and occupation.

One tree exhibiting wounding suggestive of cultural modification was identified within pastural flats to the west of Dart Brook within the Proposed Activity Area. The tree was identified in Lot 1 DP1138706, as a white box with an oval shaped scar of the lower portion of the trunk, scar facing southwards. The wound currently serves as an entrance to a tree hollow, likely utilised by smaller animals. Further assessment concluded that the visible scar is the result of limb damage or a similar natural process and is not cultural in origin (see **Photo 6.1**).

Two overhangs were observed near the Proposed Activity within Lot 75 DP750950 (**Photo 6.2** and **Photo 6.3**). The conglomerate rock formations contained small overhanging areas; however, no Aboriginal objects, potential archaeological deposits or artwork were identified within the overhangs. As such, these areas were considered unlikely to be utilised by Aboriginal people for shelter and have not been registered as an Aboriginal site on AHIMS.

An overview of the general landscape of the Proposed Activity Area is provided in **Photo 6.4** to **Photo 6.12**.

[3] i.e. landforms suggesting previous occupation by Aboriginal peoples, e.g. alluvial terraces, floodplains etc

Photo 6.1 White Box Tree with Scar and Hollow

Source: Umwelt (2024)

Photo 6.2 External view of an overhang near the Proposed Activity, view approximately west

Source: Umwelt (2025)

Photo 6.3 Exterior of an overhang near the Proposed Activity, view approximately north

Source: Umwelt (2025)

Photo 6.4 Overview of the Flat Terrain Adjacent to Parsons Gully, View north-west

Source: Umwelt (2024)

Photo 6. 5 Overview of the Flat Terrain Adjacent to Kingdon Ponds, View west

Source: Umwelt (2024)

Photo 6.6 **Overview of the Transition from Flat Elevated Terrain to Gentle Slope to the Creek Line, Middle Brook, View east**

Source: Umwelt (2024)

Photo 6.7 **Contemporary Land Use and Disturbance Example, Tree Grove**

Source: Umwelt (2024)

Photo 6.8 **Representative Photo of the Road Verge to be Incorporated into the Proposed Alignment**

Source: Umwelt (2024)

Photo 6.9 **Overview of the Open Pasture Dominating the Central Portion of the Proposed Activity Area, View east**

Source: Umwelt (2024)

Photo 6.10 **Representative View of the Steeply Incline Hillslope of Mount Moobi, View south**

Source: Umwelt (2024)

Photo 6.11 **Overview of the Vegetation Growth and Limited Visibility in the Western Portion of the Proposed Activity Area**

Source: Umwelt (2024)

Photo 6.12 **Landform Transition from Incline Hillslopes (Mount Moonbi) to Flat Terrain**

Source: Umwelt (2024)

6.1 Results

During the visual inspection, four (4) areas were identified to have potential archaeological sensitivity (i.e. sensitive landscape features). These areas are situated directly adjacent to perennial watercourses (within 200 m) and consist of a relatively flat, elevated landform. As per the *Due Diligence Code of Practice* (2010), such landform features may indicate the presence of Aboriginal objects. No Aboriginal objects were identified in association with these locations; however, it is assessed that due to the characteristics listed, they may have potential for subsurface Aboriginal deposits.

The four (4) areas of archaeological sensitivity are shown in **Photo 6.13** to **Photo 6.16** and on **Figure 6.1**.

Area 1

Area 1 (56H 296974E 6450473N), located within Lots 911 and 912 DP1152423 and consisted of an elevated terraced landform on the southern bank of the western branch of Middle Brook, a 4th order tributary of the Hunter River. The land within this lot had been partially cleared of vegetation and is currently utilised for pastoral activities. Area 1 is situated within the lot boundary of the local heritage item 'Invermein' (I24) [4].

Area 2

Area 2 (56H 297539E 6450690N), located within Lot 101 DP1093507 consisted of a terraced landform on the eastern bank of the primary branch of Middle Brook, a 4th order tributary of the Hunter River. The land within this lot had been completely cleared of all vegetation, to the exclusion of some remnant growth directly on the creek bank. Two introduced stone fruit trees were identified adjacent to the creek bank.

Area 3

Area 3 (56H 290421E 6449953N), located within Lots 71 and 74 DP750950 and comprised a small, elevated landform to the north of a third order tributary of Moobi Gully, which forms part of the Hunter River catchment. The area is currently used for pastoral activities and has previously been cleared of vegetation and has an existing vehicle track running approximately north-south through the area.

Area 4

Area 4 (56H 290488E 6450427N), located within Lot 71 DP750950 and comprised an elevated landform to the south of a second order tributary of Moobi Gully, which forms part of the Hunter River catchment. The area is currently used for pastoral activities and has previously been cleared of vegetation and has an existing vehicle track running approximately northwest-southeast through the area.

[4] See Umwelt, in prep. UPPER HUNTER (KYOTO) ENERGY PARK: Heritage Impact Statement

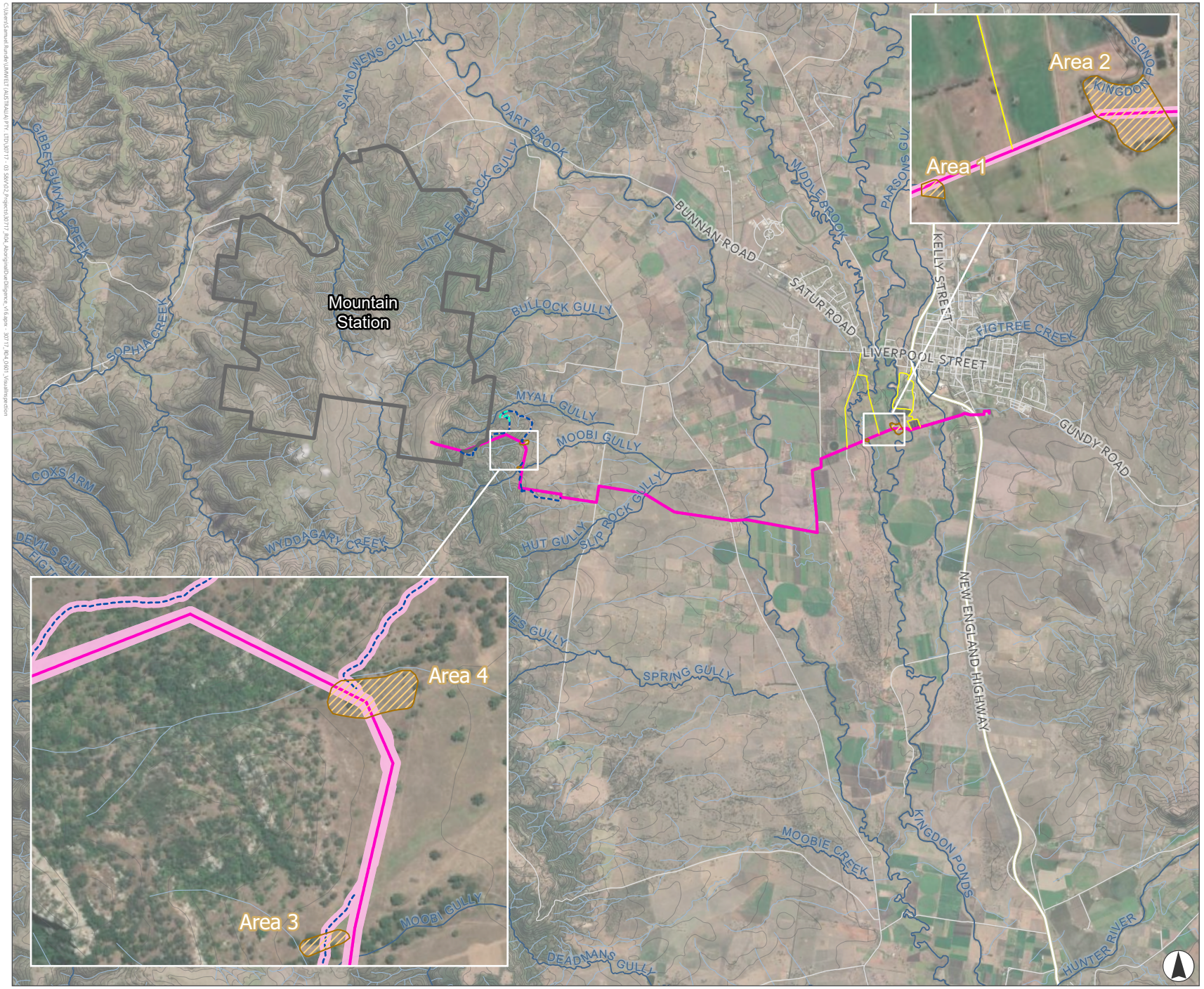

Figure 6.1

Results of Visual Inspection

Legend

- Upper Hunter Energy Park Project Area
- Area of Sensitivity
- 20m Contour
- Highway
- Main / Local Roads
- Named Watercourse
- Watercourse
- Proposed 66kV Power Line Route
- Proposed Activity Area

Access Route

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

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Image Source: ESRI Basemap (2024) | **Data Source:** NSW DFSI (2024)

Photo 6.13 Overview of Area 1, Overlooking Middle Brook, View east

Source: Umwelt (2024)

Photo 6.14 Overview of Area 2, View westwards Towards Middle Brook

Source: Umwelt (2024)

Photo 6.15 Overview of Area 3, View eastwards along third order tributary of Moobi Gully

Source: Umwelt (2025)

Photo 6.16 Overview of Area 4, View eastwards along second order tributary of Moobi Gully

Source: Umwelt (2025)

7.0 Conclusions and Recommendations

It is considered that the Proposed Activity and associated works will not impact known Aboriginal objects and is unlikely to impact subsurface archaeological deposits. As the proposed activity will consist of minimal ground disturbing works and is not anticipated to require substantial or widespread vegetation clearance, it is considered unlikely that previously unidentified Aboriginal objects or sites will be impacted. **Table 7.1** provides an overview of the steps outlined in the due diligence code (DECCW 2010) and how this letter report has addressed the requirements.

Table 7.1 Due Diligence Code Steps and Summary of Assessment

Due Diligence Step	Summary	Report Section
1. Will the activity disturb the ground surface or any culturally modified trees?	Yes. The Proposed Activity will require ground disturbance activities throughout the construction of the Proposed Activity. This would include the installation of steel posts, vegetation clearance for the establishment of the easement and general disturbance associated with ancillary features of the Proposed Activity. No culturally modified trees were identified as part of this assessment, and as such, it is not anticipated that any culturally modified trees will be impacted as a result of the Proposed Activity.	Proposed activities are listed in **Section 2.0**.
2. Are there any: a) relevant confirmed site records or other associated landscape feature information on AHIMS? and/or b) any other sources of information of which a person is already aware? and/or c) landscape features that are likely to indicate presence of Aboriginal objects?	A search of the AHIMS database did not identify any registered Aboriginal sites within the Proposed Activity Area. However, the Proposed Activity Area is situated within a well-resourced environment with multiple perennial creek lines. Regional archaeological studies of the Upper Hunter would suggest that Aboriginal sites are most commonly found in direct association with sources of fresh water, in particular reliable water sources.	Regional archaeological context summarised in **Section 5.2.1**.
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 Proposed Activity is not anticipated to impact any known Aboriginal sites or objects.	Refer to **Section 7.0** above for rationale and mitigation measures to minimise impact to areas of archaeological sensitivity.
4. Does a desktop assessment and visual inspection confirm that there are Aboriginal objects or that they are likely?	The information presented in this assessment would suggest that the wider environs may have the potential to contain Aboriginal sites or objects. No Aboriginal objects were located during the visual inspection.	Refer to **Section 5.0** for desktop research and **Section 6.0** for outcomes of the visual inspection.

Based on the above findings, the Proposed Activity may proceed subject to the following recommendations:

Recommendation 1

Should earthworks and/or any other ground disturbing activity be required for the access track within sensitive areas 3 and 4 identified further Aboriginal cultural heritage assessment would be required. This ACHA would be required to further investigate the archaeological potential and/or Aboriginal cultural heritage values of the aforementioned areas of archaeological sensitivity. Aboriginal cultural heritage investigation works must be undertaken by a suitably qualified heritage consultant in accordance with Requirement 11 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b) and include the preparation of an Aboriginal Cultural Heritage Assessment Report (ACHAR), compiled in accordance with Section 3 of the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*. A process of Aboriginal community consultation carried out accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a) must also be demonstrated.

Recommendation 2

This assessment concludes that the proposed works within the extent of Archaeologically Sensitive Areas 1, 2 and 4 (i.e. a single transmission line pole) is unlikely to impact subsurface Aboriginal objects should they be present. This is due to the minor and isolated nature (a singular inclusion of a pole for the overhead line) of the works.

Should more substantial ground disturbance works be required, outside of the bounds of the discussed pole installation, further assessment may be required.

Recommendation 3

If additional archaeological assessment is required and Aboriginal objects and/or sites are identified during the archaeological investigation outlined in Recommendation 1 and 2, and Aboriginal sites/objects cannot be avoided by the Proposed Activity, the Proponent would be required to apply for an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the *National Parks and Wildlife Act 1974 (NPW Act 1974)*. The recommended approach for an ACHAR identified above would be used to support the application.

Recommendation 4

Remaining works associated with the Proposed Activity may proceed across the other remaining sections of the Proposed Activity Area (outside of the boundaries of the identified archaeological sensitive areas), provided that the impacts and extent of the proposed works are consistent with those discussed in this report, and that the following general mitigation procedures are implemented.

- All relevant contractors and personnel should be made aware of the nature and location of previously recorded Aboriginal sites that lie within and near the Proposed Activity Area. All relevant contractors and personnel should also be made aware of their legal responsibilities under the *NP&W Act 1974* and the need to avoid impacts to Aboriginal sites.

- If, in the unlikely event that Aboriginal objects/sites are identified during the Proposed Activity, all works in the area must cease immediately and the ***Unexpected Heritage Finds Procedure*** presented in **Appendix B** must be implemented.
- In the event that the proposed design and/or location of the proposed works is altered for any reason, or impact to areas to land that has not been assessed in this report, further Aboriginal heritage assessment may be required. Any proposed alteration must be evaluated by a qualified heritage consultant to determine if the location represents a risk to Aboriginal cultural heritage.

We trust this information meets with your current requirements. Please do not hesitate to contact the undersigned should you require clarification or further information.

Yours sincerely

Steph Howden
Senior Archaeologist
E showden@umwelt.com.au
M 0456 196 274

8.0 References

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Appendix A

AHIMS Search Results

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 30717

Client Service ID : 1080563

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
37-2-1846	MW-OS-1	AGD	56	299980	6456420	Open site	Valid	Artefact : -	Open Camp Site	102225
	Contact	**Recorders**	Unknown Author					**Permits**		
37-2-1847	MW-OS-2	AGD	56	300290	6452160	Open site	Valid	Artefact : -	Open Camp Site	102225
	Contact	**Recorders**	Unknown Author					**Permits**		
37-2-0515	Owens Gap;	AGD	56	284180	6453950	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	**Recorders**	Warren Bluff					**Permits**		
37-2-0134	Dartbrook 2	AGD	56	299567	6441979	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	**Recorders**	W Cook					**Permits**		
37-2-0138	Guan Creek	AGD	56	281700	6448000	Open site	Valid	Burial : -	Burial/s	
	Contact	**Recorders**	A.J Williams,A.J Williams,W Cook,Ian Gordon,David Eather					**Permits**		
37-2-2027	Halcombe Hill 1 IF	AGD	56	299618	6442281	Open site	Valid	Artefact : 1		
	Contact S Scanlon	**Recorders**	Janice Wilson					**Permits**	2232	
37-2-2028	Halcombe Hill 2 IF	AGD	56	299670	6442152	Open site	Valid	Artefact : 1		
	Contact S Scanlon	**Recorders**	Janice Wilson					**Permits**	2232	
37-2-2056	SWP4	AGD	56	299918	6442627	Open site	Valid	Artefact : 1		
	Contact T Russell	**Recorders**	Doctor.Penny Mccardle					**Permits**	2935,2936	
37-2-5385	SAC-ST1	GDA	56	299755	6451059	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	**Recorders**	Mrs.Angela Besant,Ms.Suzie Worth,Wanaruah LALC,Insite Heritage Pty Ltd					**Permits**		
37-2-5589	Lot 17 IF1	GDA	56	301973	6448903	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mrs.Angela Besant,Insite Heritage Pty Ltd					**Permits**		
37-2-5581	Kelly Street AFT 1	GDA	56	298293	6453304	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Kelleher Nightingale Consulting Pty Ltd,Mr.Benjamin Anderson,Mr.Matthew Kelleh					**Permits**	4264	
37-2-5569	GR ST1	GDA	56	300314	6450887	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	**Recorders**	Mrs.Angela Besant,Insite Heritage Pty Ltd					**Permits**		
37-2-5590	Scone NEH AFT 1	GDA	56	299040	6450767	Open site	Partially Destroyed	Artefact : -		103892
	Contact	**Recorders**	Kelleher Nightingale Consulting Pty Ltd,Mr.Benjamin Anderson,Mr.Matthew Kelleh					**Permits**	4284	
37-2-5788	STM Artefact Deposit 2	GDA	56	298230	6455275	Open site	Valid	Potential Archaeological Deposit (PAD) : -, Artefact : -		
	Contact	**Recorders**	Apex Archaeology,Apex Archaeology,Ms.Jenni Bate,Ms.Jenni Bate					**Permits**	4315	

Report generated by AHIMS Web Service on 08/01/2026 for Steph Howden for the following area at Lat, Long From : -32.1401, 150.6632 - Lat, Long To : -31.9946, 150.9104. Number of Aboriginal sites and Aboriginal objects found is 17

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 30717

Client Service ID : 1080563

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
37-2-5789	STM PAD 1 Cloned	GDA	56	299957	6452544	Open site	Not a Site	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Apex Archaeology,Apex Archaeology,Ms.Jenni Bate,Ms.Jenni Bate					**Permits**		
37-2-6093	Scone Bypass Artefact Reburial	GDA	56	298658	6451214	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.Matthew Kelleher,Kelleher Nightingale Consulting Pty Ltd (Generic users)					**Permits**		
37-2-6646	Turanville ST 001	GDA	56	297454	6442983	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	**Recorders**	Heritage Now - Belmont,Doctor.Kirrily White					**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

Report generated by AHIMS Web Service on 08/01/2026 for Steph Howden for the following area at Lat, Long From : -32.1401, 150.6632 - Lat, Long To : -31.9946, 150.9104. Number of Aboriginal sites and Aboriginal objects found is 17

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Appendix B

Unexpected Finds Procedure

B.1 Unexpected Finds Procedure

Procedure on the Discovery of Aboriginal Sites / Objects

Should a suspected Aboriginal site be identified at any point throughout the life of the Proposed Activity, the following standard procedure must be adopted:

1. all works must cease immediately in the area to prevent any further impacts to the site.
2. engage a suitably qualified heritage consultant to determine the nature, extent and significance of the find and provide appropriate management advice. Management action(s) will vary according to the type of evidence identified, its significance (both scientific and cultural) and the nature of potential impacts.
3. prepare and submit an AHIMS site card for the site.

Procedure on the Discovery of Skeletal Remains

This section outlines the procedure that should be followed in the case that potential human remains are discovered during the life of the Proposed Activity. The procedure takes into account the following documents:

- *Manual for the Identification of Aboriginal Remains (NSW Department of Environment & Conservation, 2006).*
- *Skeletal Remains – Guidelines for the management of human skeletal remains under the Heritage Act 1977 (NSW Heritage Office, 2008).*
- *The Aboriginal Cultural Heritage Standards and Guidelines Kit (NSW National Parks and Wildlife Service, 1997).*

In the event that potential human skeletal remains are identified at any point during the life of the Proposed Activity, the following standard procedure should be followed.

1. all work in the vicinity of the remains should cease immediately.
2. the location should be cordoned off and the NSW Police notified.
3. if the Police suspect the remains are Aboriginal, they will contact Heritage NSW and arrange for a forensic anthropologist or archaeological expert to examine the site.

Subsequent management actions will be dependent on the findings of the inspection undertaken under Point 3.

- if the remains are identified as modern and human, the area will become a crime scene under the jurisdiction of the NSW Police
- if the remains are identified as pre-contact or historic Aboriginal, Heritage NSW and any Aboriginal stakeholders (e.g. the relevant Local Aboriginal Land Council) are to be formally notified in writing. Where impacts to exposed Aboriginal skeletal remains cannot be avoided an appropriate management mitigation strategy will be developed in consultation with Heritage NSW and Aboriginal stakeholders
- if the remains are identified as historic non-Aboriginal, the site is to be secured and the Heritage NSW contacted
- if the remains are identified as non-human, work can recommence immediately.

3 February 2026

Yannick Zapf
Principal Advisor
YZ Consulting

E yannick.zapf@yzconsulting.com.au

Dear Yannick

RE: UPPER HUNTER ENERGY PARK – Heritage Impact Statement

YZ Consulting on behalf Maven Renewable Energy Pty Ltd (Maven) engaged Umwelt to prepare a Heritage Impact Statement (HIS) to support a Review of Environmental Factors (REF) for the 66 kilovolt (kV) overhead line associated with the Upper Hunter Energy Park (UHEP) (hereafter 'the Proposed Activity'), located in Scone, New South Wales.

The 66 kV overhead line will be constructed by Maven on behalf of Ausgrid, utilising Ausgrid's registration as an Authorised Network Operator (ANO) in NSW, and powers as a public consent authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Two local heritage items are either intercepted by, or located in proximity to, the Proposed Activity Area (the alignment with 30 m wide easement), being 'St Aubin's House' (Item #I23 Upper Hunter Local Environmental Plan (LEP)) and 'Invermein' (Item #I24 Upper Hunter LEP). This assessment is required in order to assess the potential physical and visual impacts the Proposed Activity may have on the identified listed heritage items, as well as impacts on potential unlisted heritage items or areas of potential historical archaeological remains located within or adjacent to the Proposed Activity Area.

1.0 The Proposed Activity

The Proposed Activity will include the construction, operation and maintenance of an overhead 66 kV line connecting from the UHEP to the existing Scone substation located in Lot 403 DP1119120. In addition, works will include relocating parts of an existing 11 kV line to run underneath the proposed new 66 kV line for a length of 942 m, as agreed with the Upper Hunter Shire Council (Council).

An easement will be created in order to accommodate the proposed activity. The easement is proposed to have a width of 30 m, being 15 m either side of the overhead line except for 520 m on steeper terrain on Moobi Ridge where the easement is proposed to be 36.18 m (18.09 m either side) to accommodate the terrain. Disturbance will be required associated with the installation of the poles and line, to establish the easement, vegetation clearing and pruning would also be required.

The overhead line would be attached to steel poles, approximately 20 m to 55 m high. Each pole would be spaced at a distance ranging from approximately 40 m to 520 m. All poles would be installed on direct embedment foundations around 950 mm to 1,500 mm in diameter and of varying lengths to

P 1300 793 267 E info@umwelt.com.au W umwelt.com.au NSW | ACT | WA | QLD | VIC | SA Umwelt (Australia) Pty Ltd ABN 18 059 519 041

an average depth of 3 m. The steel poles would be anchored using embedded bolts or base plates, depending on site-specific conditions.

1.1 The Proposed Activity Area

The UHEP is located approximately 10 km west of Scone in the Upper Hunter Shire Local Government Area (LGA) in NSW. The Proposed Activity Area comprises the alignment for the overhead line including the 30 m easement from the UHEP to connect to the existing electricity grid at Scone substation.

1.2 Proposed Works

The anticipated sequence of construction works for the proposed activity would include the following, noting not all works will require ground disturbance activities:

- survey work
- establishing structures such as fencing and hoarding
- installing pre-construction mitigation measures, such as erosion, sediment and water quality controls, fencing sensitive areas
- relocating utilities, services and signage
- clearing vegetation where it cannot be avoided along proposed alignment
- establishing a construction compound and stockpile sites
- establishing temporary construction facilities
- establishing proposed access via upgrading existing farm tracks
- establishing work pads within the easement
- establishing a new access track on steep terrain of the Moobi ridgeline
- erecting 81 new poles
- stringing the transmission line between erected poles
- storing and stockpiling equipment
- testing and commissioning
- relocating the existing 11 kV overhead line to be located with the Proposed Activity
- rehabilitating topsoil and re-vegetation
- restoring the Proposed Activity Area (including general site cleanup and removing site compounds, temporary construction facilitiesand temporary environmental controls).

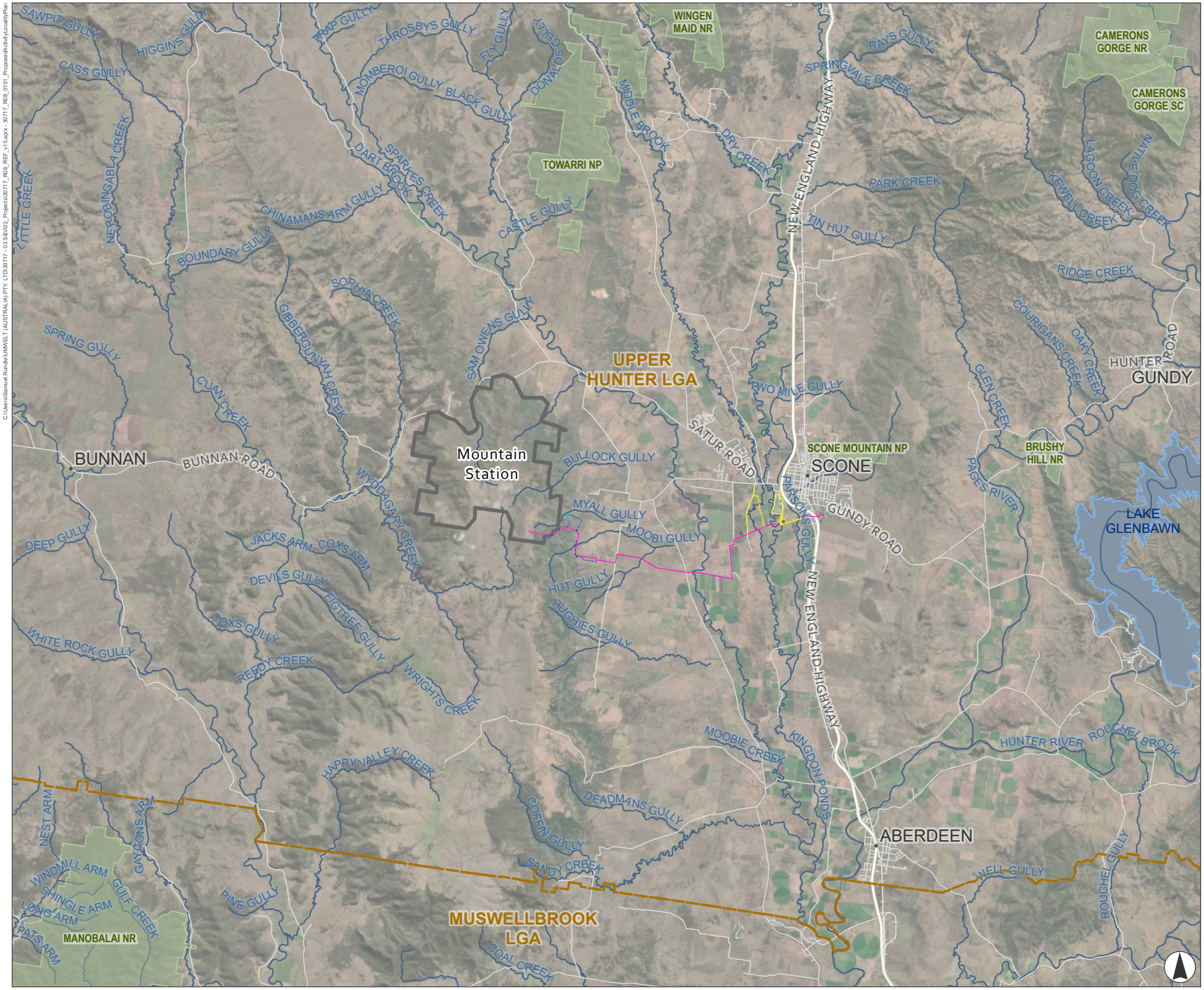


FIGURE 1.1

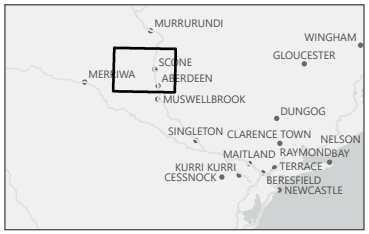
Proposed Activity Locality Plan

Legend

- Upper Hunter Energy Park Project Area
- Proposed Activity Area
- Railway
- Highway
- Main / Local Roads
- Watercourse
- Proposed 66kV Power Line Route
- Existing 11kV line
- Local Government Area
- Reserve
- Waterbody

Proposed Access Track – New

- Existing Access Routes
- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New



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GDA2020 MGA Zone 56

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Image Source: ESRI Basemap (2024) | **Data Source:** NSW DFSI (2024), YZ Consulting (2025)

2.0 Legislative Context

2.1 Statutory Listing

2.1.1 Commonwealth Legislation and Policies

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Australian Government's environment and heritage legislation. This Act is triggered by developments or actions that will impact on Matters of National Environmental Significance (MNES), including world heritage areas, Commonwealth marine areas, nationally threatened species and communities and migratory birds. The EPBC Act includes a process for the assessment of proposed actions that have, or are likely to have, a significant impact on MNES. These actions require approval from the Commonwealth Minister, Environment and Heritage.

The national heritage system was established in January 2004 under the EPBC Act. This led to the introduction of the National Heritage List, which recognises and protects places of outstanding heritage to the Nation, and the Commonwealth Heritage List, which includes Commonwealth owned or leased places of significant heritage value.

No National or Commonwealth listed heritage items, places or assets are located within the Proposed Activity Area.

2.1.2 State Legislation

2.1.2.1 Heritage Act 1977

The purpose of the *Heritage Act 1977* (NSW) is to ensure cultural heritage in NSW is adequately identified and conserved. The Heritage Act is the primary item of state legislation affording protection to items of environmental heritage (natural and cultural) in NSW.

Under the Heritage Act 'items of environmental heritage' include places, buildings, works, relics, moveable objects and precincts identified as significant based on historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic values. State significant items are listed on the NSW State Heritage Register (SHR) and are given automatic protection against any activities that may damage an item or place or affect its heritage and/or archaeological significance.

The Heritage Council of NSW, appointed by the Minister, is responsible for heritage in NSW, as constituted under the Heritage Act. The Heritage Council is a cross-section of heritage experts, with Heritage NSW (DCCEEW) being the operational arm of the Council.

No State listed heritage items are located within the Proposed Activity Area.

2.1.2.2 Relics Provision of the Heritage Act 1977

The Heritage Act affords automatic statutory protection to 'relics' which form part of archaeological deposits (except where these provisions are suspended by other prevailing legislation). The Heritage Act defines a 'relic' as any deposit, object, or material evidence that:

Relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, and is of state or local heritage significance.

There is considered to be negligible potential for significant historical archaeological 'relics' to be present within the Proposed Activity Area.

2.1.3 Environmental Planning and Assessment Act 1979

The EP&A Act governs strategic planning and development assessment processes undertaken by State and Local Government in NSW. The Proposed Activity is being assessed under Part 5 of the EP&A Act utilising Ausgrid's registration as an Authorised Network Operator (ANO) in NSW, and powers as a public consent authority under the Act.

The EP&A Act also requires that Local Governments prepare planning instruments (such as LEPs and Development Control Plans [DCPs] in accordance with the Act to provide guidance on the level of environmental assessment required.

2.1.4 Local Environmental Plan

The Proposed Activity Area falls within the Upper Hunter Shire Council LGA and is subject to the planning provisions of the Upper Hunter LEP.

Part 5 Clause 5.10 of the Upper Hunter LEP provides the statutory framework for heritage conservation including:

- To conserve the environmental heritage of the Upper Hunter.
- To conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views.
- To conserve archaeological sites.
- To conserve Aboriginal objects and Aboriginal places of heritage significance.

Two (2) items listed on Schedule 5 of the Upper Hunter LEP (2013) are located within or near the Proposed Activity Area:

- St Aubin's House (I23).
- Invermein (I24).

An overview of these identified heritage items has been outlined in **Section 3.0**, and illustrated in **Figure 2.1.**

2.1.5 The Burra Charter (The Australian ICOMOS Charter for Places of Cultural Significance (2013)

The Burra Charter is a set of best practice principles and procedures for heritage investigations and conservation. The charter was developed by the Australian group of the international professional organisation for conservation; the International Council for Monuments and Sites (ICOMOS). Although it is not a statutory document, the Burra Charter provides a best practice standard for heritage management in NSW and Australia. The policies and legislative guidelines of the Heritage Council of NSW and Heritage NSW are consistent with and guided by the Burra Charter.

2.1.6 The Register of the National Estate

The Register of the National Estate is a list of natural, Indigenous and historic heritage places throughout Australia. From 19 February 2007 the Register has been frozen, meaning that no places can be added or removed. The Invermein heritage item was listed on the Register of the National Estate.

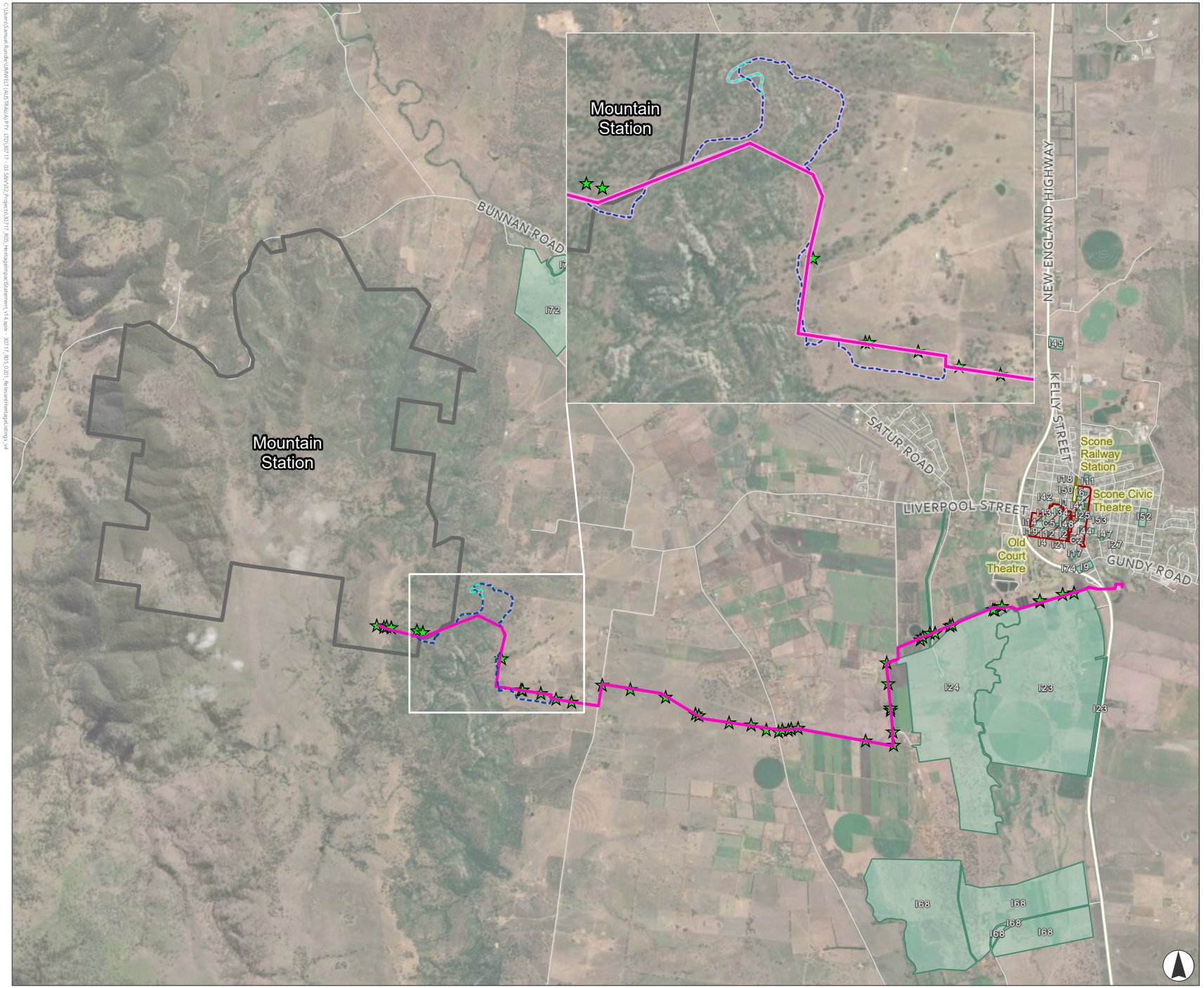

Figure 2.1

Relevant Heritage Listings

Legend

- Visual Inspection Point
- Highway
- Main / Local Roads
- Upper Hunter Energy Park Project Area
- State Heritage Register
- Proposed Activity Area

LEP Heritage Sites

- Conservation Area - General
- Item - General

Access Route

- Proposed Access Track – Upgrade of Existing Track
- Proposed Access Track – New

Proposed 66kV Power Line Route

- Proposed 66kV Power Line Route

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Kilometres

Scale 1:75,000 at A4
GDA2020 MGA Zone 56

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Image Source: ESRI Basemap (2024) | **Data Source:** NSW DFSI (2024)

3.0 Relevant Heritage Listings

To inform this assessment, searches of all relevant historical heritage databases were undertaken. This includes searches of:

- The Commonwealth Heritage List.
- Register of the National Estate (non-statutory archive).
- The National Heritage List.
- The State Heritage Register.
- Section 170 Heritage and Conservation Registers (where publicly accessible).
- Relevant Local Environmental Plans (LEPs).

As a result of these searches (as shown in **Figure 2.1**), it has been identified that:

- No heritage items or places listed on the Commonwealth or National Heritage Lists are located within or near the Proposed Activity Area.
- No State listed heritage items are located within or near the Proposed Activity Area.
- No items listed on any publicly available 170 Heritage and Conservation Registers (NSW State agency heritage registers) are located within or near the Proposed Activity Area.
- Two (2) items listed on Schedule 5 of the Upper Hunter LEP (2013) are located within or near the Proposed Activity Area.

A number of heritage items were identified as being associated with the Scone township and broader Upper Hunter locality, however these are outside the Proposed Activity Area and will not be impacted by the Proposed Activity. These items as shown in **Figure 2.1** are provided in **Table 3.1.**

Table 3.1 Identified Heritage Items Outside Proposed Activity Area

Database Searched	Heritage Listing Identified Outside Proposed Activity Area	Lot/DP
State Heritage Register	Scone Railway Station (also identified in Upper Hunter LEP as I18)	Adjacent to Lot 2, DP 1153650
	Old Court Theatre (also identified in Upper Hunter LEP as I19)	Lot 6, Section 2, DP 758898
	Scone Civic Theatre (also identified in Upper Hunter LEP as I59)	Lots 1–3, DP 214848
Upper Hunter LEP 2013	Turanville homestead and outbuildings (I68)	Lots D, E and F, DP 38812
	Yarrandi homestead (I72)	Lot 10, DP 831346; Lot 100, DP 809538
	Satur (rear of Sledmore Horse Stud) (I85)	Lot 91, DP 808298
	Roman Catholic cemetery (I49)	Lot 1, DP 366916; Lot 58, DP 1096974; Lot 90, DP 1130892
	Shops (I6)	Lot B, DP 158596
	Shops (I41)	Lot 1, DP 718295; Lot 2, DP 222497

Database Searched	Heritage Listing Identified Outside Proposed Activity Area	Lot/DP
	Dry cleaners (former Blooms Nursery) (I37)	Lot 1, DP 718296
	Scone Hospital (I52)	Lots 3 and 4, DP 583487
	St Luke's Church and rectory (I5)	Lot 101, DP 618228
	Shop (former Willow Tree Hotel and former butcher shop) (I28)	Lot A, DP 394354; Lot 6, DP 733567; Lots 21 and 22, DP 558794
	Post office (I20)	Lot 3, DP 700953; Lot 10, DP 703172
	Bank of New South Wales (I25)	Lot A, DP 332685
	Former Convent of Sisters of Mercy (I12)	Lot 201, DP 883254
	Site of Railway Gatekeeper's Cottage (I29)	Lot 1, DP 745929
	Residence (former inn) (I44)	Lot 1, DP 1100096
	Residence (I47)	Lot 167, DP 521459
	St. Mary's Roman Catholic Church (I27)	Lots 11 and 12, Section 5, DP 2958
	West Scone Conservation Area (C5)	-
	Masonic Temple (former Presbyterian church) (I21)	Lot 1, DP 819422
	Central Scone Conservation Area (C2)	-
	Residence (former hospital) (I17)	Lots 12 and 13, DP 864059
	Nandowra (I74)	Lot 2, DP 578106
	St Aubin's Arms (former Wool Pack Inn) (I9)	Lot 1, DP 881852

3.1 Identified Heritage Listings

An overview of identified heritage items within or in proximity to the Proposed Activity Area has been outlined below.

3.1.1 St Aubin's House (I23)

'St Aubin's House' is a local built heritage item under the Upper Hunter LEP 2013. This item is located adjacent to the Proposed Activity Area. The following information has been taken from the listings State Heritage Inventory (SHI) citation:

Description

A substantial brick house, cement rendered inside and out, with eight main rooms in main block off which extend two wings to form courtyard. In the centre is a fountain in Italian style, made at Bakewell potteries. Many splendid centre pieces and cornices intern with four panelled doors of oak panels and cedar frames, plaster skirting boards and fine fireplaces, hearths and mantles. Garden designed by Jocelyn Brown in 1940. Some of the outbuildings date from an earlier homestead.

Statement of Significance

The house is probably the most important early work designed by and built for William Bakewell. Built on land originally granted to William Dumaresq. Has fine interior features and is in the unusual Dutch style. Is in a pristine state of preservation with fine grounds, with many fine old pottery ornaments by the Australian pottery manufacturers, Messrs Bakewell Bros.

3.1.2 Invermein (I24)

'Invermein' is a historic item under the Upper Hunter LEP 2013. This item partially overlaps with the Proposed Activity Area. The following information has been taken from the Australian Heritage Database, Register of the National Estate listing citation:

Description

Built of brick nogging, sandstock brick in a timber frame, covered in weatherboards. Single storey. Small paned windows with French doors and six panel main door. House altered 1895. Two gables added to front elevation of hipped roof. Stone flagged verandah extended to whole front. Rear wings lengthened to join stone paved kitchen and dairy to form courtyard. Drawing room has plain cedar fireplaces and some of the original little furniture.

Statement of Significance

The property of Invermein has important historic associations with the town of Scone. District court held there until Scone was established. House is well preserved and architecturally interesting. Set in delightful garden and landscape.

4.0 Historical Context

4.1 Upper Hunter

Free settlement of the Hunter Valley opened up in 1822 following the closure of the Penal station established at Coal River Newcastle in 1804. Most convicts sent to the penal station were sent to the coal and lime mining in the area, but some were sent further out as part of timber getting gangs. These gangs moved further inland and north along the Hunter River towards the Barrington mountains. By the 1820's establishment of the towns of Maitland, Raymond Terrace and Morpeth had begun (Dunn 2017).

Exploration of the Hunter Valley by John Howes and company in 1819, which he repeated in 1820 identified access routes through the region. The expedition travelled from Windsor across to the Bulga mountains and came out around the Jerrys Plain and Singleton area. Howes noted that the countryside was ..."if for cultivation and equally so for grazing" (Dunn 2017).

The newly clearly marked track between Windsor and Hawkesbury area which was used by escaping convicts and settlers driving their cattle towards the open grassland of the Hunter Valley also contributed to the opening up of the Hunter Valley as an area for free settlement (Dunn 2017).

4.2 Scone

Surveyor Henry Dangar was the first European to arrive in the area in 1824. Dangar's report attracted wealthy European settlers and areas of land surrounding Scone were quickly taken up. Francis Little set up Invermein Station, nearby the present-day town of Scone, in 1825.

Other early large pastoral properties included Belltrees and Segenhoe. In 1826 the Governor of New South Wales, Ralph Darling, granted Richard Kelly a grant of 1,920 acres which encompassed land that became Scone's main street.

William Dumaresq purchased land from the crown in 1828 which became St Aubins estate and enclosed much of present-day Scone, resulting in the areas being known as 'St Aubins' (AMAC 2019). The township was officially gazetted as the Village of Scone in 1837, and the formal boundaries of the village were established in 1880 [1].

Scone continued to develop through the 19th century as a rural and pastoral centre of the Upper Hunter region, containing many large pastoral properties.

4.3 Proposed Activity Area

The Proposed Activity Area is situated within the Parish of Scone and the Parish of Manbus, within an area that has been utilised pastorally since the late 1820s through to modern day. The eastern portion of the Proposed Activity Area i.e., east of Dart Brook, is dominated by the original landholdings of William Dumaresq and Francis Little.

William Dumaresq arrived in Australia in 1825 and served as acting chief engineer to the Royal Staff Corps. Preferring the freedoms of a pastoralist lifestyle, he retired from service in 1829 and took up a grant of 2,560 acres in the Upper Hunter. This landholding was called 'St Aubin's and encompassed much of what is now the township of Scone. Following his death in 1868, the St Aubin's estate was purchased by Mr. W. J. Smith, a well-known businessman from Sydney. Mr Smith established a highly successful stud farm on the property [2]. By the 1920s, the St Aubin's property had swelled to over 13,000 acres of agricultural land. The property was partially subdivided in 1922, with 51 blocks available for public purchase. The land was advertised as perfect growing conditions for lucerne, for dairying, grazing and 'fattening country' [3].

Francis Little arrived and settled at Scone in 1823, forming the first European settlement in the area. Initially 'Invermein' was named in reference to a village-like settlement and not exclusively to the Invermein Estate. Francis Little served as one of three original magistrates in the region and was involved in the exploration and European discovery of the Liverpool Plains [4]. Following his death in 1860, Archibald Little (son) took over the management of the property. In 1881, Invermein Estate was

[1] 1880 'SITE FOR THE VILLAGE OF SCONE.', New South Wales Government Gazette (Sydney, NSW : 1832 - 1900), 13 September, p. 4725. , viewed 10 Dec 2024, http://nla.gov.au/nla.news-article223776681

[2] 1940 'HISTORIC HOMESTEAD AT SCONE', The Sydney Morning Herald (NSW : 1842 - 1954), 30 July, p. 10. (Women's Supplement), viewed 10 Dec 2024, http://nla.gov.au/nla.news-article17673828

[3] 1922 'ST. AUBIN'S, SCONE.', The Farmer and Settler (Sydney, NSW : 1906 - 1955), 27 October, p. 3. , viewed 10 Dec 2024, http://nla.gov.au/nla.news-article115743457

[4] 1935 'SCONE.', The Sydney Morning Herald (NSW : 1842 - 1954), 6 April, p. 21. , viewed 10 Dec 2024, http://nla.gov.au/nla.news-article17172281

put up for sale as ‘one of the grandest pastoral estates in New South Wales’. The property was further described as consisting of 10,000 acres of cultivating land with rich grass, ideal for stock [5].

The Proposed Activity Area also intersects with multiple smaller landholdings to the west, the majority of which are 40 to 100 acres in size. An outlier is the property of John Bingle, on the western banks of Dart Brook, who possessed 560 acres of land. Bingle originally acquired 2,000 acres of land, known as ‘Puen Buen’, in the 1820s, however ongoing droughts through this decade resulted in the sale of much of his pastoral land [6].

In summary, the historical context of the Proposed Activity Area indicates that the land has been utilised for pastoral purposes since the 1820s. A review of available historical imagery (1952) shows that much of the Proposed Activity Area had been extensively cleared of open bushland to facilitate the pastoral land use (**Figure 4.1**). Previous development within the Proposed Activity Area has likely remained limited to structures relating to the pastoral use of the land, such as homesteads, agricultural structures and other ancillary buildings.

Figure 4.1 1952 aerial image of the Proposed Activity Area (eastern to central portion)

The indicative location of the Proposed Activity Area is illustrated via the red dashed line.

Source: Historical Imagery Viewer

[5] 1881 'Sale of the Invermein Estate and other Properties.', The Maitland Mercury and Hunter River General Advertiser (NSW : 1843 - 1893), 27 August, p. 4. , viewed 10 Dec 2024, http://nla.gov.au/nla.news-article819504

[6] 1921 'SAILOR AND PIONEER.', The Brisbane Courier (Qld. : 1864 - 1933), 26 December, p. 9. , viewed 10 Dec 2024, http://nla.gov.au/nla.news-article20520202

5.0 Visual Inspection

A visual inspection of the Proposed Activity Area was undertaken by Umwelt Archaeologist Alison Fenwick on 15-16 October and 1 November 2024.

The Proposed Activity Area intersects with public recreational grounds and infrastructure in the east, inclusive of Scone Golf Course and the Scone Wastewater Management facility.

Two introduced or planted stone fruit trees were identified in isolation to the west of the waste facility, on the banks of Middle Brook. No structures or additional historic features were identified in association, however, this may indicate of historical land use. Within the western portion of the Proposed Activity Area, residential dwellings and ancillary structures associated with the agricultural use of the land were identified. However, such structures were located outside, but in proximity to, the Proposed Activity Area. The western portion of the Proposed Activity Area is largely dominated by privately owned agricultural land and as a result, had been cleared extensively of vegetation in order to facilitate pastural grazing of livestock. Due to this, the landscape is expansive, with few visual barriers.

The Proposed Activity Area is located in proximity to, or intersects with, two listed heritage items; 'St Aubin's House' and 'Invermein'. The proposed alignment will follow the property boundary of the 'St Aubin's House' property and will remain to the north of the property boundary fence. It is not anticipated that the Proposed Activity will physically interact with the curtilage of the item or the curtilage of the property. The proposed overhead line may, however, intersect with the curtilage of the 'Invermein' heritage item at the banks of Middle Brook creek. The proposed transmission line will cross Middle Brook and cross into the Invermein property, at a location that has been cleared of vegetation and contains no structures or features of historical significance.

Photo 5.1 to **Photo 5.7** below provides an overview of the visual inspection and the general landscape of the Proposed Activity Area. **Figure 2.1** provides an overview of the points where following photographs were taken.

Photo 5.1 **Fenceline separating the curtilage of the ‘St Aubin’s House’ heritage listing from the proposed alignment, view south**

Source: Umwelt (2024)

Photo 5.2 **Stone fruit tree located on the elevated bank of Middle Brook, view west from the proposed alignment**

Source: Umwelt (2024)

Photo 5.3 Intersection of the Proposed Activity Area and the 'Invermein' heritage listing, view south

Source: Umwelt (2024)

Note that the heritage listing is demarcated by the fence line.

Photo 5.4 View south from the proposed alignment, illustrating the proximity to Invermein homestead

Source: Umwelt (2024)

Photo 5.5 **Overview of the proposed alignment with existing powerline, vehicle track, fencing and residential structures**

Source: Umwelt (2024)

Photo 5.6 **Overview of the proposed alignment and agricultural structures, view west**

Source: Umwelt (2024)

Photo 5.7 **Example of the cleared open paddocks within the Proposed Activity Area, view south-east**

Source: Umwelt (2024)

Photo 5.8 **Overview of the proposed alignment and proximity to residential / agricultural structures, view east**

Source: Umwelt (2024)

5.1 Results

As outlined above, the visual inspection confirmed that the Proposed Activity Area primarily consists of public recreational land, public infrastructure and private agricultural land. The inspection was contained to the Proposed Activity Area, however, did consider the immediate environs of the proposed alignment.

The Proposed Activity Area will not directly intersect with the 'St Aubin's House' (I23) heritage listing, however, the proximity of the proposed alignment and the listing boundary (i.e., the property boundary fence) has the potential to result in visual impact to the item. The Proposed Activity Area may intersect with the 'Invermein' heritage item, however, the area of interaction consists of cleared paddocks and no structures or features of interest were identified. The proximity of the proposed alignment to the existing Invermein homestead may visually impact the item. A discussion of the potential impacts is outlined in **Section 6.0**.

During the course of the visual inspection, no new historical archaeological sites or potentially historically significant structures/features were identified.

6.0 Impact Assessment

6.1 Indirect Impacts

The Proposed Activity will introduce new infrastructure into a landscape which is currently dominated by open pastoral fields or recreational areas, remnant vegetation, with few dwellings and ancillary structures. As such, installation of the proposed overhead line will result in indirect (visual) impacts on the identified heritage items 'Invermein' (I24) and 'St Aubin's House' (I23).

The Proposed Activity will be located outside, and to the north, of the listed curtilage of the 'St Aubin's House' (I23) heritage item, however it may impede on views from the heritage item. The proposed works and associated infrastructure such as the transmission poles and wires may be visible from within the items curtilage, viewing northwards. Comparatively, the proposed activity will be partially located within the northern extent of the curtilage of the 'Invermein' (I24) heritage item and will impact views from the homestead structure to the wider environs. It is noted that an existing powerline / transmission line has been constructed in proximity to the 'Invermein' heritage item and would be visible from the main homestead structure (see **Photo 6.1**). Therefore, the Proposed Activity and associated infrastructure, such as the transmission line, does not represent the initial infrastructure development that would visually impact the heritage item. As such, the introduction of a secondary transmission line as part of the Proposed Activity would constituted a low visual impact.

The works proposed within the vicinity of the heritage items will result in a minor loss in the setting and landscape characteristics within and around both heritage items. This impact has been minimised through placement of poles outside of the curtilage of the heritage items (see **Section 6.2**).

Photo 6.1 View south of the Invermein homestead

Source: Umwelt (2024)

6.2 Direct Impacts

As outlined in **Section 1.2**, the proposed alignment intersects with the curtilage of the heritage item 'Invermein' (I24). The proposed alignment while inside the curtilage of the heritage item 'Invermein' (I24), is outside of the boundary of the 'Invermein' property, Lot 912 DP1152423. It is anticipated that the proposed works would be limited to the installation and erection of steel posts, which would require isolated ground disturbance. The installation of the Proposed Activity would not require the removal or intervention with any structures or contributory features of the heritage item, as no such features have been identified at the location.

A desktop review of the item curtilage would indicate that the entirety of the Lot/Deposited Plan (DP) within which the 'Invermein' item is located has been delegated as part of the heritage listing and this is not focused on individual structures or features of historical significance. It is anticipated that related construction activities of the Proposed Activity would result in negligible direct impacts to the heritage item. However, should more substantial construction activities be required in the curtilage of the 'Invermein' (I24) heritage item, this has the potential to have an adverse physical impact to the heritage listing.

The proposed alignment is located outside of the curtilage of the 'St Aubin's House' (I23) heritage listing and as such, no physical construction works are proposed to take place within the heritage item. The 'St Aubin's House' (I23) heritage listing will not be physically impacted as part of the Proposed Activity.

7.0 Historical Archaeological Potential

A visual inspection of the Proposed Activity Area and immediate surrounds did not indicate the potential for historical archaeological remains to be present. A review of historical aerial imagery and available mapping did not identify any prior significant structures within the proposed alignment. Considering the history of the region as pastoral or agriculturally based (see **Section 4.0**), there is considered to be negligible potential for significant historical archaeological remains to be present within the Proposed Activity Area. In addition, the relatively narrow easement required for the Proposed Activity, and the subsequently contained nature of the Proposed Activity Area (see **Section 1.2**), further mitigates any risk of unidentified historical structures or features being present or impacted as part of the Proposed Activity.

Although the wider curtilage of the 'Invermein' (I24) and 'St Aubin's House' (I23) heritage listings may possess historical archaeological potential, this would not extend to the areas of potential impact identified as part of the Proposed Activity. A review of historical information has identified no prior structures or features adjacent or within the Proposed Activity Area at the location of the heritage items. Due to the negligible potential for archaeological remains to be present it is highly unlikely that the Proposed Activity would impact on any significant historical archaeological remains within the heritage curtilage of the heritage items. No ground disturbance works are anticipated within the 'St Aubin's' (I23) heritage listing.

8.0 Conclusion

This assessment has considered the nature of the Proposed Activity and the significance of heritage items within, or in proximity to the Proposed Activity Area, and has assessed the potential impacts (both direct and indirect) to the heritage items. Overall, it has been found that the Proposed Activity will not physically impact the 'St Aubin's House' or 'Invermein' heritage listing. This conclusion is based on the currently available Project design details and may be subject to revision should further changes to the Proposed Activity take place.

The Proposed Activity will, however, result in a minor loss in the setting and landscape characteristics within and around the two heritage items.

The historical archaeological potential of the Proposed Activity Area has been assessed as negligible and it is considered highly unlikely that the Proposed Activity would impact on any significant historical archaeological remains within the heritage curtilage of 'Invermein' (I24) or 'St Aubin's' (I23). No prior structures or features were identified adjacent to or within the Proposed Activity Area at the location of the heritage items.

Further, a review of the available historical information and the result of the visual inspection indicates the potential for historical archaeological remains to be present within the wider Proposed Activity Area is also negligible. As such, there are no identified historical archaeological constraints associated with the Proposed Activity.

8.1 Recommendations

The Proposed Activity Area may proceed without any further archaeological assessment or investigation, provided that the impacts and extent of the proposed works are consistent with those discussed in this report. Works should, however, proceed with caution in accordance with the following recommendations:

Construction activities within the curtilage of the 'Invermein' (I24) heritage item should be avoided as far as practicable. Where pole installation is required within the mapped curtilage of the item, reasonable measures should be taken to reduce disturbance as far as reasonably practicable. We note that there is currently no construction activity proposed to take place within Lot 912 DP1152423 associated with the 'Invermein' property.

All on-site personnel are to be made aware of their obligations under *Heritage Act 1977* (NSW).

In the unlikely event that unexpected historical archaeological material is discovered during works, work must cease, an appropriately qualified archaeologist consulted with. If appropriate, the Heritage Council should be notified in accordance with Section 146 of the *Heritage Act 1977*.

Please do not hesitate to contact the undersigned should you require clarification or further information.

Yours sincerely

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9.0 References

1880 'SITE FOR THE VILLAGE OF SCONE.', New South Wales Government Gazette (Sydney, NSW : 1832 - 1900), 13 September, p. 4725. , viewed 10 Dec 2024, http://nla.gov.au/nla.news-article223776681

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Dunn, M., 2017. Upper Hunter Heritage Study: Thematic History. Prepared for the Upper Hunter Shire Council

Appendix A Consultation Log

Submission ID	Stakeholder	Stakeholder Proximity	Date Received	Submission Content	Response	Date Response Provided	Change to Assessment Required	Change to Mitigation or Management Measure Required
1	Community Member	Local Resident	24 February 2026	I am writing to formally object to the proposed wind farm development in and around Scone, an area internationally recognised as the Horse Capital of Australia. This development raises serious concerns regarding its impact on local wildlife, the welfare of horses, and the long-term viability of the equine industry that underpins the identity, economy, and community of this region. Scone and the surrounding Upper Hunter are home to diverse native wildlife populations. Large-scale wind turbines pose documented risks to birds, bats, and other fauna through habitat disruption, noise pollution, and collision hazards. The cumulative environmental stress caused by turbine construction and ongoing operation threatens to disturb established ecosystems that cannot be easily restored once damaged. Of particular concern is the effect this development may have on horses. Horses are highly sensitive animals, especially to low-frequency noise, vibration, shadow flicker, and changes in landscape. These stressors have the potential to negatively impact behaviour, fertility, performance, and overall welfare. Given the concentration of stud farms, training facilities, and performance horses in this region, any additional stress imposed on these animals is unacceptable and could have serious economic and animal-welfare consequences. Scone's reputation as the Horse Capital of Australia is not merely symbolic—it represents generations of investment, expertise, and global recognition. The equine industry supports local employment, tourism, and international trade. Introducing industrial-scale infrastructure into this unique rural and equine landscape risks irreparable harm to an industry that cannot simply relocate. I respectfully urge the relevant authorities to reconsider this proposal and prioritise the protection of local wildlife, animal welfare, and the long-standing agricultural and equine heritage of the Scone region. Renewable energy development should not come at the expense of areas with such significant environmental, cultural, and economic value. Thank you for considering this objection. I trust that these concerns will be given serious and appropriate consideration in the assessment of this proposal.	A response was provided which thanked the stakeholder for their detailed concerns about the wind farm project, acknowledged the importance of environmental and animal welfare issues, and explained that a comprehensive assessment has been undertaken. The response provided a commitment to ongoing open engagement and invited the stakeholder to a face-to-face meeting to discuss the concerns and answer any questions. This submission has not been considered further in the Review of Environmental Factors (REF) as impacts from the components of the UHEP project (including wind turbines) are outside of the proposed powerline (Proposed Activity) scope. This submission will be separately considered in further investigations for the UHEP project.	25 February 2026	No	No

Submission ID	Stakeholder	Stakeholder Proximity	Date Received	Submission Content	Response	Date Response Provided	Change to Assessment Required	Change to Mitigation or Management Measure Required
2	Community Member	Neighbouring landowner to UHEP Project	26 February 2026	We are adjacent land owners to the proposed wind farm in Bunnan Road, Owens Gap. We have previously received a Neighbour Agreement from YZ Consulting and we have rejected it as it is one sided in favour of UHEP. There are other matters that former Australian Energy Infrastructure Commissioner Andrew Dyer said could be included in such an agreement, on behalf of the adjacent landowners, but which have not been mentioned in the document. We are aware that YZ have contacted us and given us the agreement because we and two other neighbours are the closest and will be the worst affected adjacent landowners to the project. We are of retirement age and expect we will need to sell our property long before the 25 to 30 years of the project expire. We are concerned about the potential problem of trying to sell our property when the time comes, and how the wind farm will affect the price we can expect to sell for, if the project goes ahead. We do not want a wind farm across the road from our property and so close to our home. YZ acknowledged there will be noise, construction dust, vibration, and other issues. The winds in summer, which are often strong gales, blow directly onto our home from the direction where some of the wind turbines would be located. That would bring the noise and dust straight to our home. This will have a direct impact on our daily living, and we do not want to have this impact. YZ have estimated that the nearest turbine will be 1.45kms from our home. We are requesting that UHEP provides us with the final, definitive map of the locations of the turbines, and the definite distances from our home, the height, and dB readings expected at the turbines that would be installed, and demonstrate how that compares with the development application approval. Further we want UHEP to demonstrate how the turbines would visually impact our home. Also, are you required to enter into Neighbour Agreements because your project is expected to exceed permit approvals and/or because the default setback distances are compromised? We will consider the purchase of our property by UHEP for an amount of $2,000,000 so we can purchase an equivalent property, in close proximity to a major town, with the same kind of lifestyle and outlook as we currently enjoy. We are also very concerned about the impact this project will have on our other neighbours if it goes ahead.	A response was provided which thanked the community member for their feedback and follow-up call about the wind farm project. The response confirmed their concerns had been shared with the project proponent and suggested that a face-to-face meeting would be the best way to address questions and provide context. The response concluded by expressing appreciation for ongoing engagement and a willingness to continue the discussion. This submission has not been considered further in the Review of Environmental Factors (REF) as impacts from the components of the UHEP project (including wind turbines) are outside of the proposed powerline (Proposed Activity) scope. This submission will be separately considered in further investigations for the UHEP project.	26 February 2026	No	No

Submission ID	Stakeholder	Stakeholder Proximity	Date Received	Submission Content	Response	Date Response Provided	Change to Assessment Required	Change to Mitigation or Management Measure Required
3	Community Member	Local Resident	4 March 2026	To Whom It May Concern, I am writing as a long-term local resident to formally object to the proposed Upper Hunter Energy Park wind turbine development at Mountain Station, as well as the proposed overhead transmission line route associated with the project. This proposal is not appropriate for our local community and raises serious concerns regarding environmental impact, visual amenity, infrastructure burden, and the long-term wellbeing of our children and future generations. **Impact on Community and Rural Character:** Our area is defined by its rural landscape, open spaces, agricultural productivity, and peaceful lifestyle. The introduction of large-scale industrial wind turbines across Mountain Station would permanently alter the visual landscape and fundamentally change the character of our community. These turbines are not small structures — they are industrial-scale developments that would dominate ridgelines and be visible across vast distances. This is not the legacy we want for our children. The transformation of our natural landscape into an industrial energy zone undermines the identity of our region and diminishes the amenity that local families rely on and value. **Concerns Regarding the Proposed Overhead Transmission Lines:** The proposed overhead transmission line route is equally concerning. Overhead lines will further fragment the landscape, require significant vegetation clearing, and create ongoing visual and environmental impacts. They may also affect farming operations, property access, and land values. The cumulative effect of turbines plus overhead transmission infrastructure compounds the overall industrialisation of our district. **Environmental and Agricultural Impacts:** Mountain Station and the surrounding areas are important for biodiversity, native wildlife corridors, and productive agricultural land. Construction activity, vegetation clearing, road upgrades, and heavy vehicle movement pose long-term risks to soil health, water systems, and wildlife habitats. As a community built on primary production and rural enterprise, we cannot afford decisions that compromise agricultural sustainability for future generations. **Impact on Property Values and Community Cohesion**	The response thanked the community member for expressing their concerns about the proposed wind farm and transmission infrastructure, acknowledged the importance of the issues raised, and explained that the UHEP project has undergone detailed assessment. The response reiterated a commitment to ongoing open engagement with locals and proposed a face-to-face meeting to discuss specific concerns and share further information. The response concluded with appreciation for their input and a willingness to continue the conversation. Engagement with this stakeholder is ongoing and will be recorded in accordance with the community engagement plan. The concerns of the submission have been considered and responded to in the REF in **Section 2.5.**	5 March 2026	No	No

Submission ID	Stakeholder	Stakeholder Proximity	Date Received	Submission Content	Response	Date Response Provided	Change to Assessment Required	Change to Mitigation or Management Measure Required
				Developments of this scale can negatively impact property values and create division within small communities. The social fabric of rural towns is fragile. Projects that benefit a small number of landholders while imposing impacts on many neighbouring families create lasting tension and inequity. **Future Generations** Most importantly, decisions made today will shape the environment our children inherit. Our children deserve a healthy, natural landscape — not one dominated by industrial infrastructure. Renewable energy is essential, but it must be located appropriately, with genuine community support and minimal long-term impact. I am also concerned about potential impacts including: • Visual intrusion across rural properties and public viewpoints • Noise impacts and long-term health concerns • Reduced property values • Environmental and biodiversity impacts • Impacts on farming productivity • Increased traffic and disruption during construction • Long-term legacy infrastructure affecting future generations Our children deserve to grow up in a safe, healthy, and stable rural environment. Large-scale industrial infrastructure in close proximity to homes and farming land is not consistent with that vision. Once constructed, this infrastructure cannot simply be undone — the impacts will be permanent. For these reasons, I strongly oppose: • The placement of wind turbines at Mountain Station. • The proposed overhead transmission line route through our community. I respectfully request that this proposal be rejected and that alternative sites and infrastructure solutions be explored that better balance energy needs with community wellbeing, environmental protection, and agricultural sustainability. Thank you for considering my submission.				
4	Community Member	Neighbouring landowner to the Proposed Activity	12 January 2026	In regards to your letter in December 2025 re: Upper hunter energy park update. I would like: • A better topographical map of the proposed area of the power lines,	A meeting was held with the submitter in February 2026 and a formal response was provided on 23 February 2026. The response thanked the landowner for meeting and outlined follow-up information provided on their key requests. The response included a draft design for the 66kV overhead line, details about pole specifications	23 February 2026	No	No

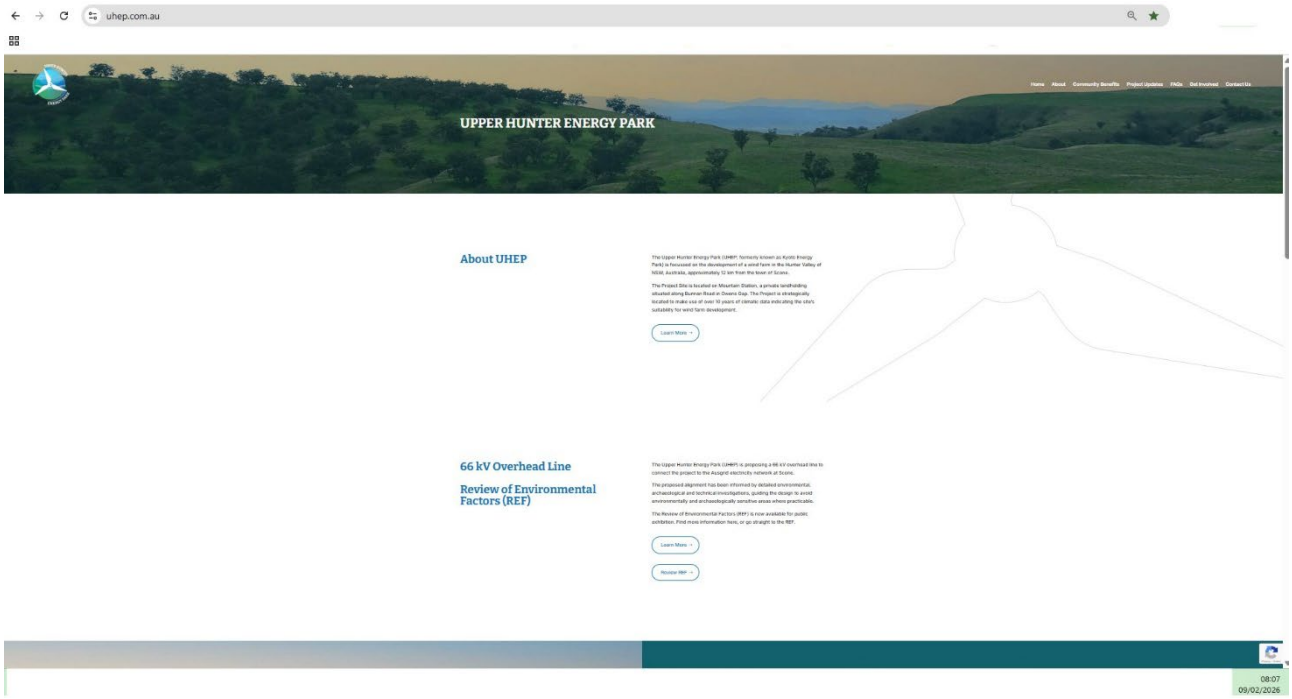
Submission ID	Stakeholder	Stakeholder Proximity	Date Received	Submission Content	Response	Date Response Provided	Change to Assessment Required	Change to Mitigation or Management Measure Required
				• An image and dimensions of the proposed poles and how many meters apart they will be, • A report on radiation, emf emotions on both poles, windmills and electrical cables, • I would like to know how far off my fence line they are, • How are you going to access the area to put the poles and the wind turbines in and provide maintenance, • Infra sound and noise reports as I have young children and breed animals, • How you intend to minimise shadow flicker that will annoy and stress my animals and be distracting while working on farm, • By reports these also cause sleep disturbances, my husband is already having to be on call while doing emergency clinic work and has to have quality sleep when it is available, • Tell me how you are going to minimise the health effects cause by these powerlines and windmills, • Do you intend to make financial restitution to an active farm, horse breeding business, our livelihood and decrease the land value in which we have worked so hard to purchase and keep. • Please can you give me your reasoning as to why you have decided to construct your power poles along our fence line when it will clearly affect our wellbeing and our financial status.	and placement, and indicative construction timelines for both the overhead line and wind farm. The response also summarised community engagement activities to date, including letter drops, meetings, and responses to enquiries, and provided specific health information related to both people and animals. It also addressed property value concerns with attached documentation. The response reiterated a willingness to discuss any issues further and maintained an open invitation for more conversations or meetings.			
5	Community Member	Local Resident	28 February 2026	To whom it may concern, I wish to lodge a formal objection to the Review of Environmental Factors (REF) for the proposed 66 kV overhead line associated with the Upper Hunter Energy Park project. My primary concern relates to the environmental impacts arising from the removal and disturbance of native vegetation and habitat, particularly within endangered ecological communities identified within the project area. The REF acknowledges vegetation clearing and habitat fragmentation associated with construction of transmission infrastructure; however, the broader and cumulative impacts of the overall project appear understated. While the REF characterises many impacts from the overhead power line as indirect, residents and landholders in the project vicinity will experience direct environmental consequences resulting from turbine construction, associated infrastructure, access roads, and ongoing operational activities. These works will contribute to	A response was provided to inform that the submission had been formally registered as part of the REF assessment process and would be provided to Ausgrid for consideration as part of its assessment of the REF. The concerns of the submission have been considered and responded to in the REF in **Section 2.5**.	2 March 2026	No	No

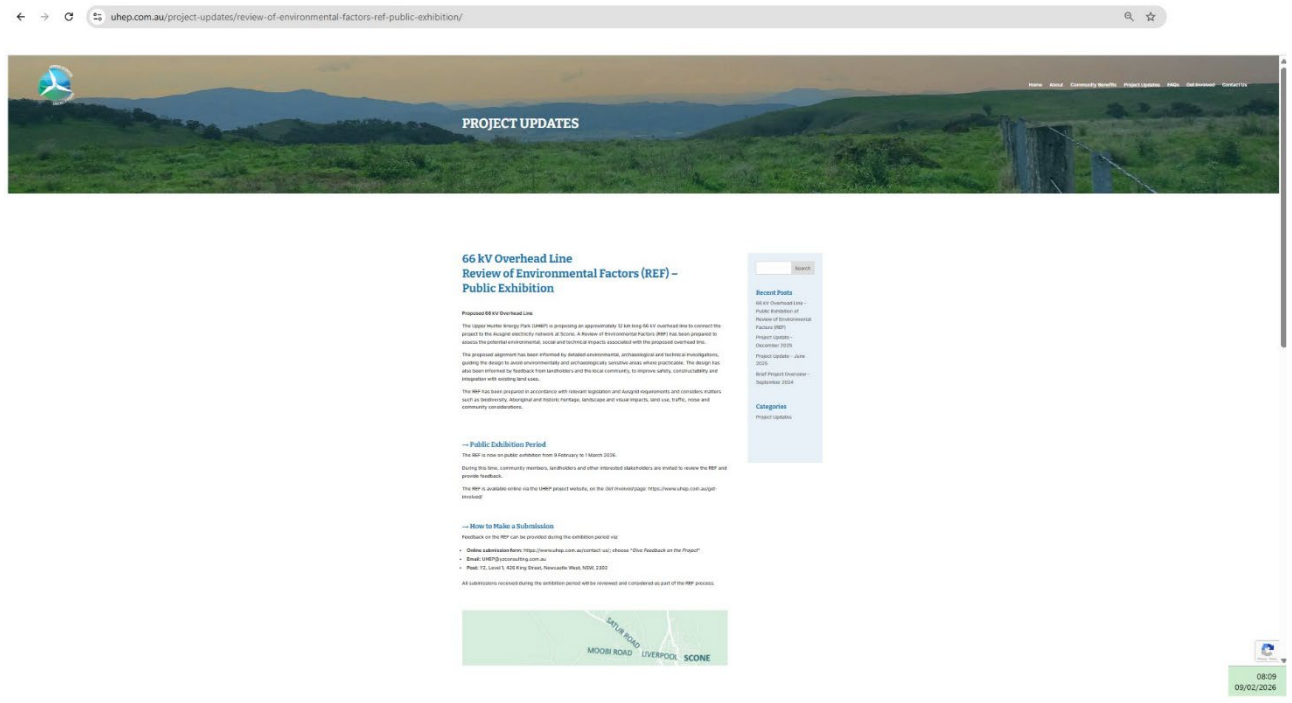
Submission ID	Stakeholder	Stakeholder Proximity	Date Received	Submission Content	Response	Date Response Provided	Change to Assessment Required	Change to Mitigation or Management Measure Required
				permanent habitat loss, fragmentation of wildlife corridors, and increased pressure on already vulnerable ecosystems and species such as critically endangered Regent honeyeaters and Swift Parrots as well as Koala's and Legless Lizards. The clearing, construction and ongoing implementation of the project are likely to mitigate pest animal and weed control activities that can be conducted both on the ground and aerially, thus placing further pressure on the environment and agricultural lands. The Upper Hunter region supports environmentally significant landscapes and biodiversity values that warrant a more precautionary approach. The extent of vegetation removal and disturbance within endangered ecological communities raises serious concerns regarding the adequacy of avoidance, mitigation, and offset measures proposed. In my view, the environmental assessment does not sufficiently demonstrate that impacts have been avoided or minimised to the greatest extent possible. Given the scale of clearing and the long-term operational footprint of the project, I request that the REF not be approved in its current form and that a more comprehensive environmental assessment be undertaken to fully evaluate cumulative impacts to biodiversity, habitat connectivity, and endangered ecological communities. Thank you for the opportunity to provide this submission.				
6	Community Member	Neighbouring landowner to the Proposed Activity	1 March 2026	To whom it may concern, I wish to lodge a formal objection to the Review of Environmental Factors (REF) for the proposed 66 kV overhead line associated with the Upper Hunter Energy Park project. One of our primary concerns is in relation to the quality of our lifestyle and health with the installation of both the turbines and overhead power lines within such close proximity to our home and agricultural properties. We have invested significant time and money in not only our business and our home but also in our local community for over 40 years. No doubt there will be disturbances to residences, livestock, equine operations and farm activities not to mention the dust drift that will affect homes and water courses. The potential reduction in air quality is a serious issue for us with two diagnosed asthmatics in our family. Add to this the concerns in regards to EMF and the anxiety induced stress related to the possibility of reduced property values and diminished quality of life.	A meeting was held with the submitters and a formal response to the submission was provided following. The response provided supporting information relating to windfarms and health and powerlines and health. The concerns of the submission have been considered and responded to in the REF in **Section 2.5**.	5 March 2026	No	No

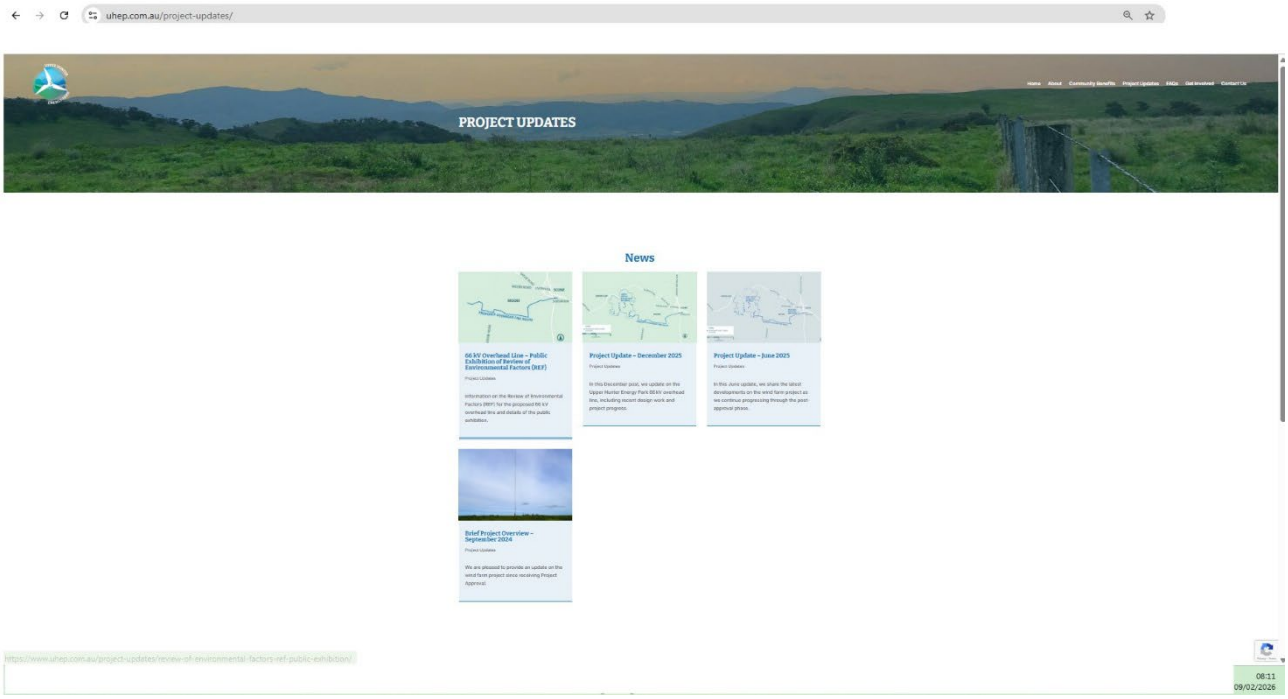
Submission ID	Stakeholder	Stakeholder Proximity	Date Received	Submission Content	Response	Date Response Provided	Change to Assessment Required	Change to Mitigation or Management Measure Required
				Although the REF concludes that no significant long term impacts are expected, those of us within close proximity will still experience meaningful short term and localised negative impacts. These will be exacerbated during construction and include the loss of our rural landscape, construction noise, vibration and dust. There are serious weed and biosecurity risks, huge potential habitat destruction and increased bushfire threat. Apparently all impacts are considered manageable through detailed mitigation measures but they remain very real material considerations for affected landholders. Another major concern relates to the environmental impacts arising from the removal and disturbance of native vegetation and habitat, particularly within endangered ecological communities identified within the project area. The REF acknowledges vegetation clearing and habitat fragmentation associated with construction of transmission infrastructure; however, the broader and cumulative impacts of the overall project appear understated. While the REF characterises many impacts from the overhead power line as indirect, residents and landholders in the project vicinity will experience direct environmental consequences resulting from turbine construction, associated infrastructure, access roads, and ongoing operational activities. These works will contribute to permanent habitat loss, fragmentation of wildlife corridors, and increased pressure on already vulnerable ecosystems and species such as critically endangered Regent honeyeaters and Swift Parrots as well as Koala's and Legless Lizards. The clearing, construction and ongoing implementation of the project are likely to mitigate pest animal and weed control activities that can be conducted both on the ground and aerially, thus placing further pressure on the environment and agricultural lands. The Upper Hunter region supports environmentally significant landscapes and biodiversity values that warrant a more precautionary approach. The extent of vegetation removal and disturbance within endangered ecological communities raises serious concerns regarding the adequacy of avoidance, mitigation, and offset measures proposed. In my view, the environmental assessment does not sufficiently demonstrate that impacts have been avoided or minimised to the greatest extent possible. Given the scale of clearing and the long-term operational footprint of the project, I request that the REF not be				

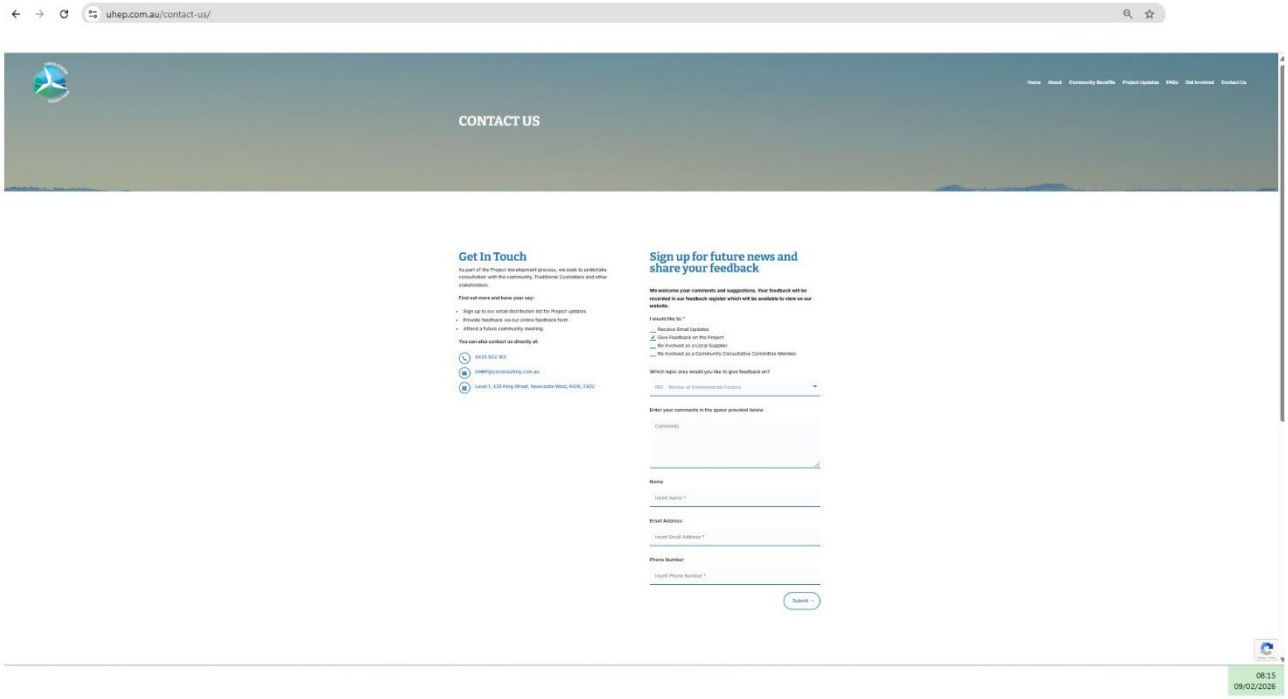
Submission ID	Stakeholder	Stakeholder Proximity	Date Received	Submission Content	Response	Date Response Provided	Change to Assessment Required	Change to Mitigation or Management Measure Required
				approved in its current form and that a more comprehensive environmental assessment be undertaken to fully evaluate cumulative impacts to biodiversity, habitat connectivity, and endangered ecological communities. Thank you for the opportunity to provide this submission.				
7	Community Member	Local Resident	11 February 2026	Can you please tell me where the exhibition is relating the 66kV overhead line? It is referred to in doco but the location is not detailed?	A response was provided which linked all the relevant documents on exhibition and invited the submitter to review and provide feedback. No further feedback was received.	11 February 2026	No	No
8	Community Member	Neighbouring landowner to the Proposed Activity	27 February 2026	I refer to your email below from July 2024 in which you state that you will keep me updated. You have failed to do this as you had a duty to do so. I have not been informed as to where exactly the line is now proposed to be positioned except for your verbal comment that it will be extremely close to both sides of my boundary. My property will be affected by the positioning of the powerline. I am waiting for advice from a surveyor regarding this Due to your lack of transparency and failure to consult I hereby object to the position of the proposed powerline until I can be provided me with complete clarity.	A response was provided which reiterated a commitment to ongoing open engagement with locals and proposed a face-to-face meeting to discuss specific concerns and share further information. Engagement with this stakeholder is ongoing and will be recorded in accordance with the community engagement plan. The concerns of the submission have been considered and responded to in the REF in **Section 2.5**.	27 February 2026		

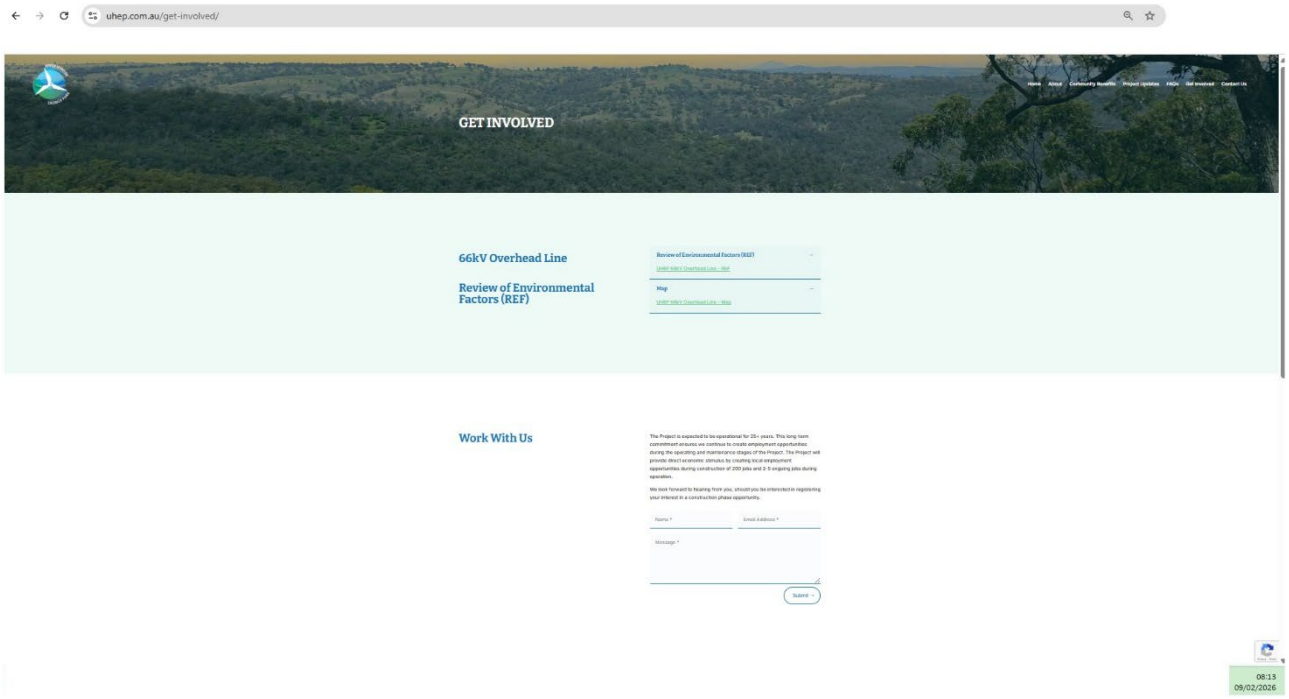
A.1 Website Pages






uhep.com.au/project-updates/
PROJECT UPDATES
News
66 kV Overhead Line – Public Exhibition of Review of Environmental Factors (REF)
Project Update – December 2025
Project Update – June 2025
Brief Project Overview – September 2024
08:11
09/02/2026


uhep.com.au/contact-us/
CONTACT US
Get In Touch
Sign up for future news and share your feedback
Name
Email Address
Phone Number
Submit
08:15
09/02/2026


uhep.com.au/get-involved/
GET INVOLVED
66kV Overhead Line
Review of Environmental Factors (REF)
Work With Us
08:13
09/02/2026

A.2 Resident Letters

February 2025

RE: Upper Hunter Energy Park – Project Update and Notification of Proposed Overhead Line

Dear Resident,

I hope this letter finds you well.

I am writing to introduce myself and YZ Consulting as the coordinators of the Upper Hunter Energy Park (UHEP), previously known as the Kyoto Energy Park. The UHEP is a wind farm project located in the Hunter Valley of NSW, about 12 km from Scone, on private land known as Mountain Station along Bunnan Road in Owens Gap.

Please find attached to this letter a Project Information Sheet which provides a Project update on the UHEP and information on how you can get involved or learn more about the Project.

As a resident/landholder close to the proposed overhead line alignment, we are reaching out to you to share information about our proposal. We are proposing a new route to connect UHEP into the electricity grid for which we are currently preparing a Review of Environmental Factors (REF). We will then submit the REF to Ausgrid, who will own and operate the line. They will assess the REF in their role as an Authorised Network Operator.

The proposed line will use 66 kV overhead lines and steel poles to connect to the existing distribution network in Scone. The proposed route largely follows existing roads and property boundaries, minimising impacts on other land uses and residences.

For background, the Development Approval (received in 2010) had two options for connecting the Project to the electricity grid; however, one has been deemed not practical due to its length (connecting in Muswellbrook), and the other was planned prior to the new Scone Bypass, making the route no longer viable.

While we anticipate minor environmental impacts during the construction of the proposed overhead line, particularly for vegetation disturbance, the new overhead line has been designed to reduce the distance between the wind farm and the nearest connection point, to minimise the impact on vegetation and agricultural land uses, and to reduce the visual impacts on neighbours.

Ecological and archaeological surveys were undertaken in the month of October 2024 to inform the Review of Environmental Factors (REF) and ensure that the planning and design of the line consider all matters affecting the environment to the greatest extent possible.

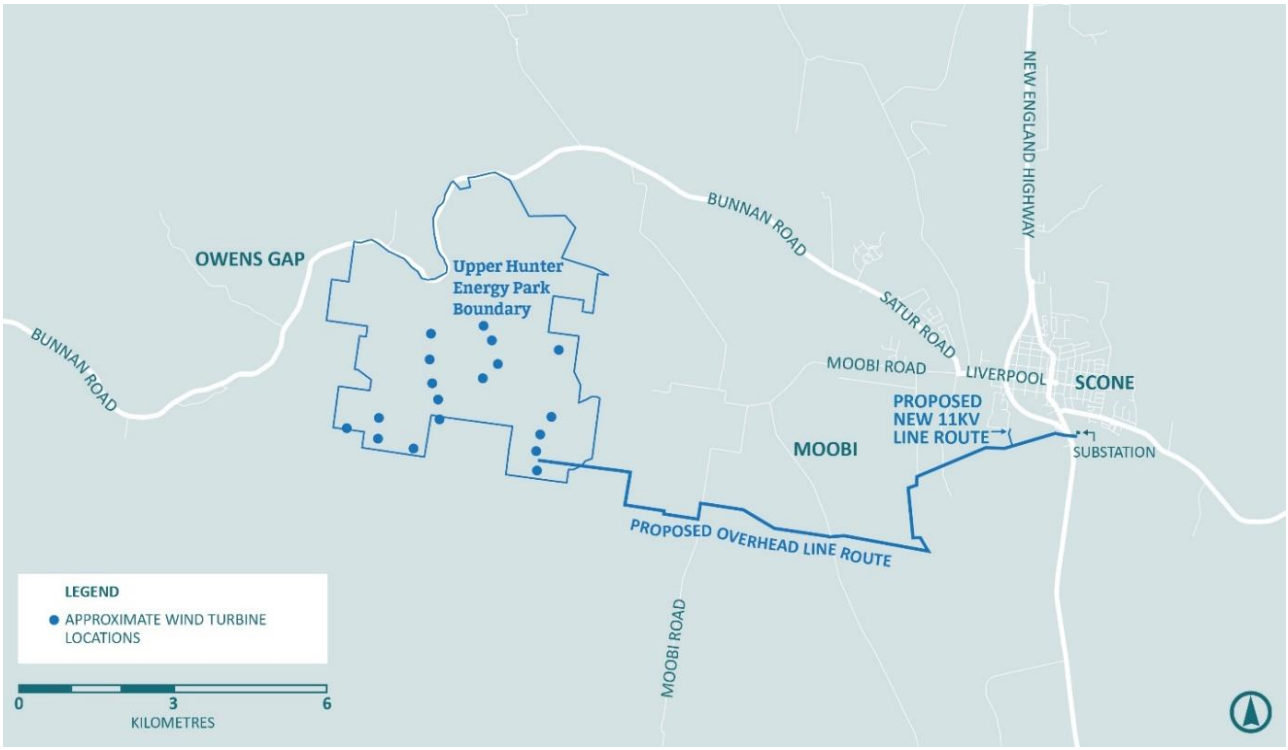


Figure: UHEP layout and proposed overhead line alignment

We are committed to sharing further activities or anticipated impacts of the overhead line during its construction in advance of activities taking place.

If you wish to gather further information or to receive broader updates on the Project moving forward, please get in contact with us via the contact methods below or by signing up for email updates via our website.

As part of the REF, you are also able to make a submission on the proposed overhead line via the contact methods below. All submissions will be considered and documented as part of the REF process, for Ausgrid's assessment and determination of the line.

Kind regards,

Yannick Zapf
Upper Hunter Energy Park
Phone: 0435 922 163 | Email: UHEP@yzconsulting.com.au
Address: Level 1, 426 King Street, Newcastle West, NSW, 2302 | Website: UHEP.com.au

Upper Hunter Energy Park

PROJECT INFORMATION SHEET

FEBRUARY 2025

The Upper Hunter Energy Park (UHEP or 'the Project'), formerly known as Kyoto Energy Park, located on the Mountain Station site on Bunnan Road in Owens Gap near Scone, NSW, was approved on 31 January 2010 by the NSW Government, and has been designed to include a range of energy generation and support facilities. This Project Information Sheet intends to re-introduce the Project and provides an update on its status and latest plans.

The Project

The Project is now owned by Maven Renewable Energy Pty Ltd Australia and is moving through its construction planning. The Project plans to proceed with the development of the following key components:

18 wind turbines

66/33kV substation

An operation & maintenance facility

21km of **33kV** underground cabling connecting Wind Turbine Generators to the Site Substation

13km of **66kV** powerline connecting the site to the existing substation near Scone

Internal access tracks and hardstands

The Project will:

Power an equivalent of **27,000** homes annually

Provide **200** new job opportunities during construction and up to 5 during operations, supporting the regional economy and community

Reduce C02 emissions by **135,000** tonnes annually

Have a total generation capacity of **75.6MW**

The Proponent

Since 2022, the development, construction and operation of the Project have been owned by Maven Renewable Energy Pty Ltd, a NSW-based business.

The Project is being coordinated by YZ Consulting Pty Ltd, which is a Newcastle based advisory services business to the renewable energy sector.

How can I be involved?

From early 2025, the local community is being engaged to rebuild awareness of the Project, to provide an opportunity to learn about the changes to the Project and upcoming activities, and to provide the opportunity to get involved with the Upper Hunter Energy Park Community Consultive Committee (CCC) or one of the foundations.

Community Consultative Committee (CCC)

The Upper Hunter Energy Park is committed to re-engaging the community in effective and meaningful ways. In the coming months, we would like to re-establish the Community Consultative Committee (CCC). This will serve as a platform for open discussions among project representatives, community members, the council, and other stakeholders, with the aim of keeping the community informed and engaged on these matters.

Please see the Project website to register your interest.

The Foundations

The UHEP is committed to sharing benefits with the local community. UHEP is working to re-establish local shared benefit schemes for the Project, including the previously planned Moobi Foundation and the Wanaruah Foundation.

The foundations will see annual funding allocated to local community initiatives relating to education, health and wellbeing, community and culture, environment, and the support of businesses in the community. We look forward to working closely with local partners to see these established.

Please see the Project website to learn more or to get involved with one of the foundations.

Work With Us

The Project is expected to be operational for 25+ years. This long-term commitment ensures we continue to create employment opportunities during the operating and maintenance stages of the Project. The Project will provide direct economic stimulus by creating local employment opportunities of 200 jobs during construction and 3-5 ongoing jobs during operation.

Please see the Project website to register your interest.

Project Timeline

The Project is currently working through detailed design and procurement to prepare for construction activities to commence in late 2025.

Phase 1
Project Awareness

Phase 2
Project Investigations

Phase 3
Project Development & Approvals

We Are Here

Phase 4
Post Development Approval and Pre-Construction

Phase 5
Construction & Commissioning

Phase 6
Operations & Decommissioning

FAQs

Why has the Project name changed?

The Project was formerly known as “Kyoto Energy Park” and was renamed Upper Hunter Energy Park in 2018, as by 2018, the original namesake (the Kyoto Protocol) was well superseded by the Paris Accord. Therefore, a name that tied the Project to the region was deemed more appropriate and chosen in consultation with some local residents, Upper Hunter Shire Council, and Office of Heritage.

What is the history/background of the Project?

In 1998, Scone was identified as one of 11 sites suitable for wind farm development in NSW by the NSW Sustainable Energy and Development Authority (SEDA). In January 2007, following the Upper Hunter Shire Council amendments to the Local Environmental Plan to allow development applications for alternative forms of energy generating activities, Pamada Pty Ltd (the former Proponent) began application activities, including a commitment to community consultation with the Scone community. In January 2010, the Project gained approval by the NSW State Government. Construction work commenced on site in December 2014 with an upgrade to the access road to Mountain Station.

What are the reasons for the site selection?

The Project site was selected based on the findings of the Sustainable Energy Development Authority (SEDA) in 1998 that declared the site suitable for wind farm development. In 2007, the Upper Hunter Shire Council amended the Local Environmental Plan (LEP) to allow renewable energy development applications, and Pamada Pty Ltd (the former Proponent) selected the site based on over 10 years of climatic data and technical studies identifying the efficiency and price of infrastructure for overall energy output.

Where will the construction workers live?

Nearby towns offer a variety of short-stay accommodation options. We expect these existing facilities to be sufficient to support the project through the construction.

What will happen when the Project is no longer used?

Unless the components are refurbished or replaced with new available technology (subject to relevant planning approval), the project will be fully decommissioned and rehabilitated. This would include dismantling and removal of all generating components and associated infrastructure (including underground internal cabling and substation) and rehabilitation of associated disturbance areas, including access tracks. The ongoing function of the overhead line connection would be subject to normal network planning and management decisions by the network operator.

Contact Us

As part of the Project development process, we seek to work closely with the local community. Find out more and have your say at the contact details below.

Phone: 0435 922 163

Postal Address: Level 1, 426 King Street, Newcastle West, NSW, 2302

Email: UHEP@yzconsulting.com.au

Website: UHEP.com.au

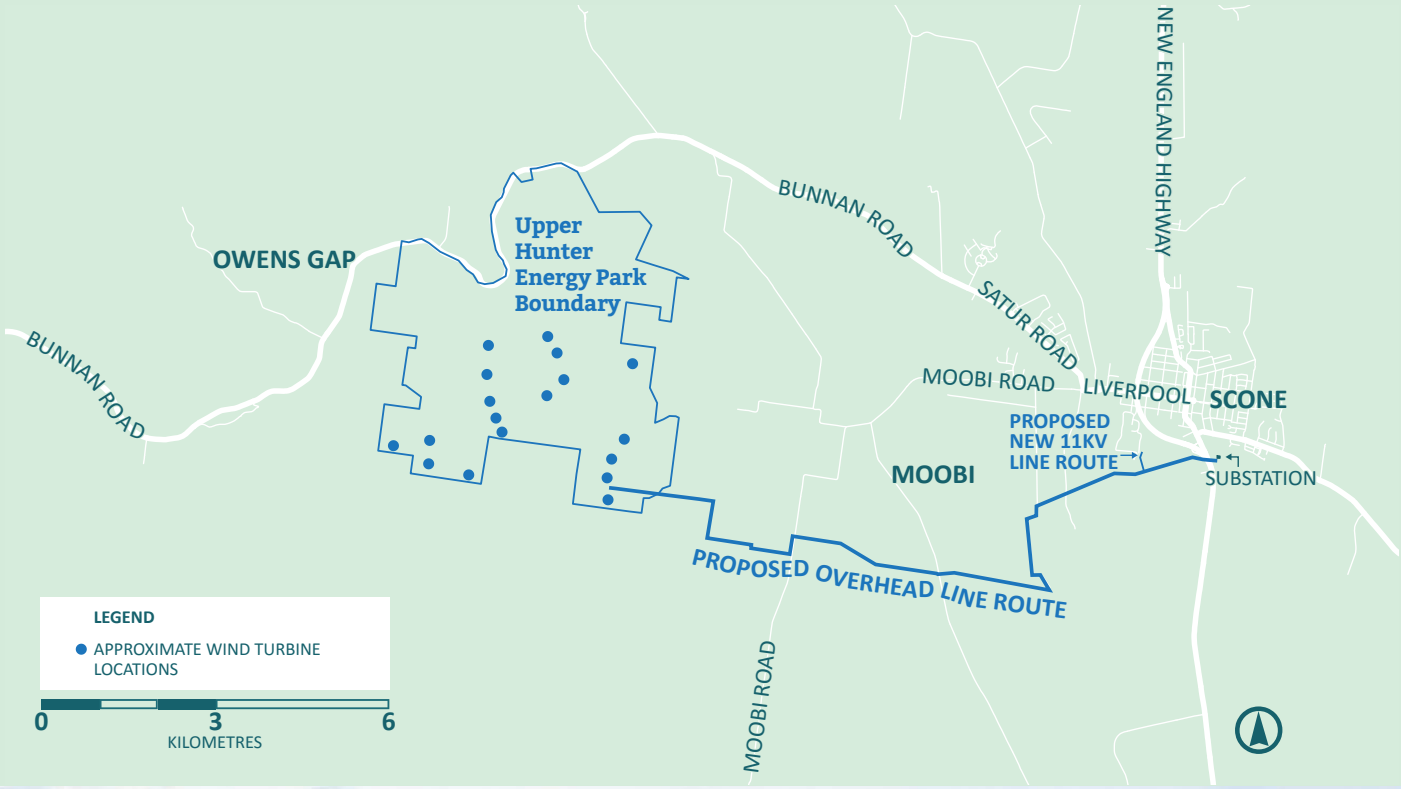
Mountain Station is a private landholding situated along Bunnan Road in Owens Gap, 10-12km west of the township of Scone in the Hunter Valley of NSW, Australia.

The Project previously received approval for two options for an overhead powerline connection to the existing electricity grid. The Project is proposing a revised power line route for a 66kV line to Scone.

We are currently preparing a Review of Environmental Factors (REF) for the proposed power line route. Later this year, we will submit the REF to Ausgrid, who will own and operate the connection. They will assess the REF in their role as an Authorised Network Operator.

The proposed overhead line route aims to reduce the distance between the wind farm and the nearest connection point, minimise the impact on vegetation and agricultural land uses, and reduce the visual impact on neighbours.

We're enhancing the golf experience by relocating the 11kV line to connect with the planned 66kV line. This improvement will eliminate disruptions, providing a serene environment for golfers to enjoy their game.



December 2025

RE: Upper Hunter Energy Park – Update on Proposed Overhead Line

Dear Local Resident,

I hope you are doing well during this busy time of year. As we approach the end of 2025, we wanted to provide you with a brief update on the Upper Hunter Energy Park (UHEP) project and the proposed overhead line.

YZ Consulting continues to coordinate the work for UHEP (formerly Kyoto Energy Park), a wind farm project located on private land approximately 12 km west of Scone. Earlier this year, in February 2025, we contacted you regarding the proposed route for the overhead power line, which will connect UHEP to the existing distribution network in Scone. Since then, additional surveys, assessments, and design work have been completed, and we would like to inform you of a few refinements to the alignment. An updated map showing the refined route is included with this letter.

In the western section of the alignment near Owens Gap, the route has been adjusted to avoid areas of environmental and archaeological sensitivity identified during our surveys, including vegetation of higher conservation value and several cave features, which require protection. These refinements help reduce potential impacts on native habitat and preserve areas of cultural and scientific significance.

In the central section near Cliftlands Road, the alignment has been shifted further away from neighbouring homes to reduce potential residential impacts and to respond constructively to community feedback provided earlier in the year. Apart from these targeted refinements, the proposed 66 kV overhead line continues to follow existing property boundaries and road corridors wherever practical.

In the eastern section across the Scone golf course, the design for relocating the existing 11kV powerline has been updated. The refined design removes several poles and sections of line that currently sit within the golf course and no longer requires any additional poles or wires to be installed within the playing areas. This reduces visual and physical obstruction for golfers and responds to Council's request for a clearer configuration.

We are in the final stages of preparing the Review of Environmental Factors (REF), which assesses the environmental, social and technical considerations associated with the proposed overhead line. The REF will be submitted to Ausgrid in January 2026. It is scheduled to be placed on public exhibition in February 2026 for three weeks. During this period, you will be able to review the full assessment and make a submission if you wish.

Information on how to view the exhibition and to make a submission will be provided on the UHEP website under *Project Updates,* and the complete assessment will be made available under the website's *Get Involved* page closer to the exhibition opening. All submissions will be considered as part of Ausgrid's determination process.

We remain committed to keeping you updated as the project progresses. If you have any questions, would like to discuss any aspect of the alignment, or wish to receive email updates, please reach out using the contact details below or get in touch via our website.

Kind regards,

Yannick Zapf
Upper Hunter Energy Park
Phone: 0435 922 163 | Email: UHEP@yzconsulting.com.au
Address: Level 1, 426 King Street, Newcastle West, NSW, 2302 | Website: UHEP.com.au

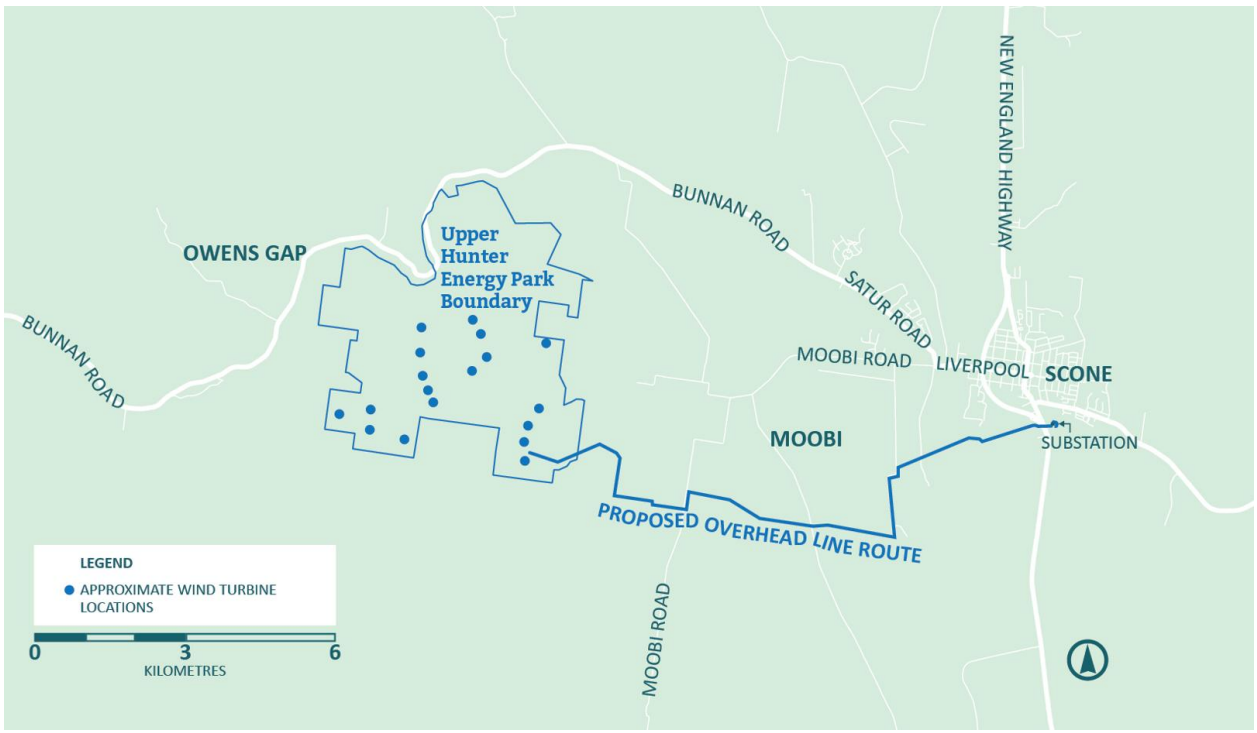


Figure: UHEP layout and proposed overhead line alignment

A.3 Information Sheet published on the Upper Hunter Shire Council notice board

Upper Hunter Energy Park

PROJECT INFORMATION SHEET

FEBRUARY 2025

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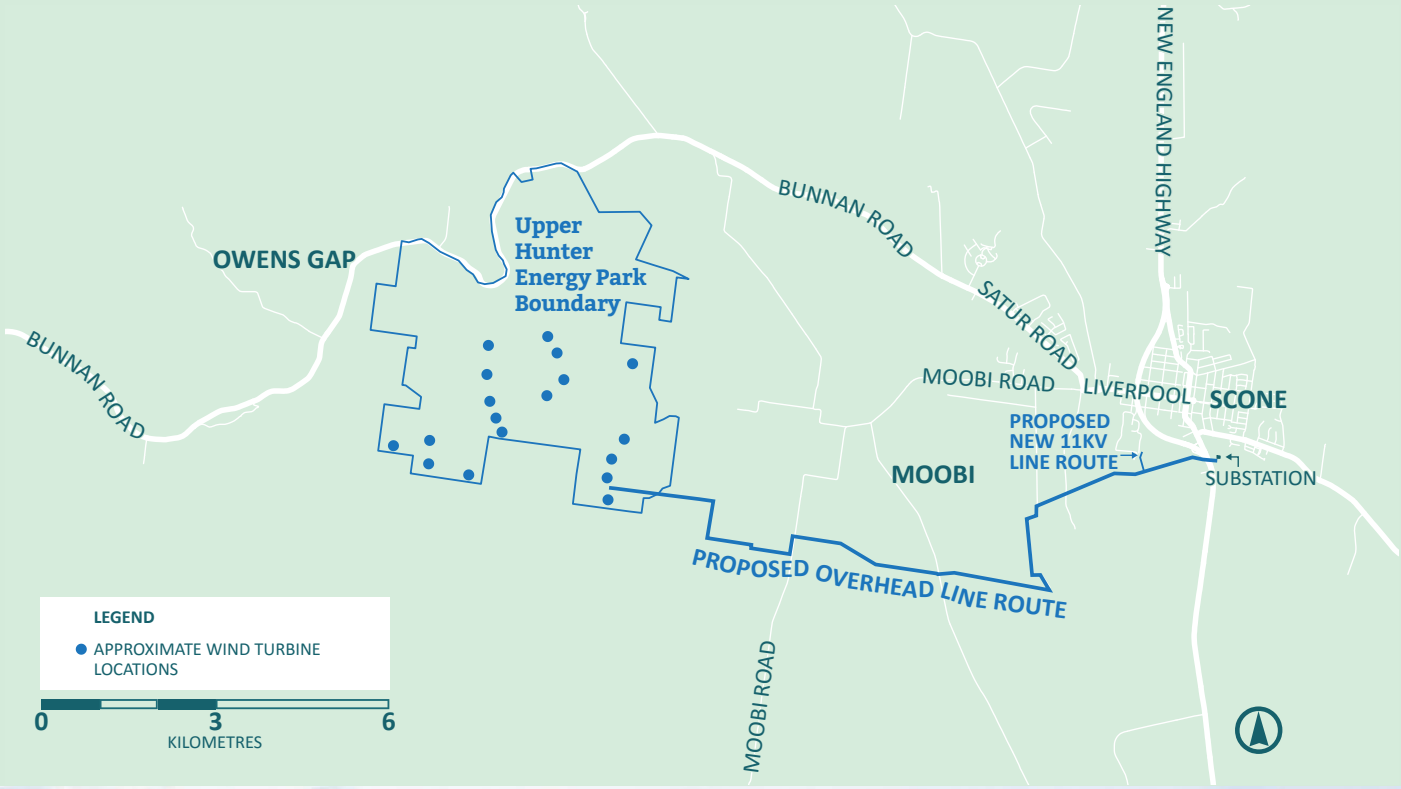
The proposed overhead line route aims to reduce the distance between the wind farm and the nearest connection point, minimise the impact on vegetation and agricultural land uses, and reduce the visual impact on neighbours.

We're enhancing the golf experience by relocating the 11kV line to connect with the planned 66kV line. This improvement will eliminate disruptions, providing a serene environment for golfers to enjoy their game.



The Upper Hunter Energy Park management informs:

Review of Environmental Factors (REF) – Public Exhibition

Proposed 66 kV Overhead Power Line

The Upper Hunter Energy Park (UHEP) is proposing an approximately 12 km long 66 kV overhead power line to connect the project to the Ausgrid electricity network at Scone. A Review of Environmental Factors (REF) has been prepared to assess the potential environmental, social and technical impacts associated with the proposed overhead power line.

The proposed alignment has been informed by detailed environmental, archaeological and technical investigations, guiding the design to avoid environmentally and archaeologically sensitive areas where practicable. The design has also been informed by feedback from landholders and the local community, to improve safety, constructability and integration with existing land uses.

The REF has been prepared in accordance with relevant legislation and Ausgrid requirements and considers matters such as biodiversity, Aboriginal and historic heritage, landscape and visual impacts, land use, traffic, noise and community considerations.

Public Exhibition Period

The REF is on public exhibition from 9 February to 1 March 2026.

During this time, community members, landholders and other interested stakeholders are invited to review the REF and provide feedback.

The REF will be available online via the UHEP project website, on the *Get Involved* page: https://www.uhep.com.au/get-involved/ - QR code here:

How to Make a Submission

Feedback on the REF can be provided during the exhibition period via:

- **Online submission form:** https://www.uhep.com.au/contact-us/; or use the QR code to the left - choose "*Give Feedback on the Project*"
- **Email:** UHEP@yzconsulting.com.au
- **Post:** YZ, Level 1, 426 King Street, Newcastle West, NSW, 2302

All submissions received during the exhibition period will be reviewed and considered as part of the REF process.

We appreciate the community's ongoing interest and engagement as the project progresses.

A.4 Agency Consultation

[redacted]

From: [redacted]
Sent: Wednesday, 17 December 2025 11:27 AM
To: [redacted]
Cc:
Subject: FW: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW
Attachments: UHEP Project Update for RFS_Dec25.pdf

Hello [redacted]

The NSW RFS has received and reviewed your request below and the attached document.

The NSW RFS advises that the REF shall identify bushfire risk during both construction and operation phases of the transmission line and recommend mitigation measures to minimise risk from potential bushfire threats.

Regards

[redacted]

RFS [redacted]

From: [redacted]
Sent: Wednesday, 17 December 2025 11:12 AM
To: [redacted]
Subject: FW: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

Hi [redacted]

Received to PES Inbox – FYA

Thanks
[redacted]

From: [redacted]
Sent: Wednesday, 17 December 2025 8:40 AM
To: Planning & Environment Services [redacted]
Cc: [redacted]
Subject: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

> You don't often get email from [redacted]

Hello,

We are writing to follow up on our correspondence earlier this year regarding the proposed 66 kV overhead line associated with the Upper Hunter Energy Park (UHEP) in Scone, NSW.

Since our previous update in February 2025, further environmental investigations and design development have been completed. These have informed a small number of refinements to the proposed overhead line alignment, as well as changes to the design of the relocated 11 kV line. Details of these updates, together with an outline of the next steps for the Review of Environmental Factors (REF), are provided in the attached letter.

The REF is being prepared under Part 5 of the Environmental Planning and Assessment Act 1979 on behalf of Ausgrid as the determining authority. We would welcome any comments or advice your agency may wish to provide for consideration prior to finalisation of the REF, particularly in relation to matters within your jurisdiction.

If you would like to discuss any aspect of the proposal or require further information, please do not hesitate to contact either myself or [redacted] (Cc'd).

Thank you very much!

Kind regards,

[redacted]

[redacted]

From: [redacted]
Sent: 14 February 2025 17:38
To: [redacted]
Cc: [redacted]
Subject: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

Hello,

Umwelt has been engaged by Maven Renewable Energy Pty Ltd to manage the development approval process and prepare a Review of Environmental Factors (REF), under Part 5 of the *Environmental Planning and Assessment Act* (EP&A Act 1979). This is being conducted on behalf of Ausgrid for a proposed 66 kV overhead line in Scone, NSW. Please see the attached letter providing further information of the Proposed Activity.

The REF assessing the potential environmental and social impacts of the Proposed Activity is currently being prepared. We would like to provide NSW Rural Fire Service the opportunity to identify any potential issues that may require further consideration as part of the preparation of the REF.

Please note that the relevant contact for this project is:

[redacted]

Principal Advisor
[redacted]

However, if you have any environmental or planning related questions, please don't hesitate to reach out to myself directly.

Thanks,

[redacted]

[redacted]

My workday may look different from your workday. Please do not feel obligated to respond outside of your normal working hours.

[redacted]

From: [redacted]
Sent: Wednesday, 17 December 2025 7:40 AM
To: [redacted]
Cc: [redacted]
Subject: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW...
Attachments: UHEP Project Update for RFS_Dec25.pdf

Hello,

We are writing to follow up on our correspondence earlier this year regarding the proposed 66 kV overhead line associated with the Upper Hunter Energy Park (UHEP) in Scone, NSW.

Since our previous update in February 2025, further environmental investigations and design development have been completed. These have informed a small number of refinements to the proposed overhead line alignment, as well as changes to the design of the relocated 11 kV line. Details of these updates, together with an outline of the next steps for the Review of Environmental Factors (REF), are provided in the attached letter.

The REF is being prepared under Part 5 of the Environmental Planning and Assessment Act 1979 on behalf of Ausgrid as the determining authority. We would welcome any comments or advice your agency may wish to provide for consideration prior to finalisation of the REF, particularly in relation to matters within your jurisdiction.

If you would like to discuss any aspect of the proposal or require further information, please do not hesitate to contact either myself or [redacted]

Thank you very much!

Kind regards,

[redacted]

From: [redacted]
Sent: 14 February 2025 17:38
To: [redacted]
Cc: [redacted]

[redacted]

Subject: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

Hello,

Umwelt has been engaged by Maven Renewable Energy Pty Ltd to manage the development approval process and prepare a Review of Environmental Factors (REF), under Part 5 of the *Environmental Planning and Assessment Act* (EP&A Act 1979). This is being conducted on behalf of Ausgrid for a proposed 66 kV overhead line in Scone, NSW. Please see the attached letter providing further information of the Proposed Activity.

The REF assessing the potential environmental and social impacts of the Proposed Activity is currently being prepared. We would like to provide NSW Rural Fire Service the opportunity to identify any potential issues that may require further consideration as part of the preparation of the REF.

Please note that the relevant contact for this project is:

[redacted]

However, if you have any environmental or planning related questions, please don't hesitate to reach out to myself directly.

Thanks,

[redacted]

My workday may look different from your workday. Please do not feel obligated to respond outside of your normal working hours.

[redacted]

From: [redacted]
Sent: Wednesday, 17 December 2025 7:40 AM
To: [redacted]
Cc: [redacted]
Subject: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW..
Attachments: UHEP Project Update for ARTC_Dec25.pdf

Hello,

We are writing to follow up on our correspondence earlier this year regarding the proposed 66 kV overhead line associated with the Upper Hunter Energy Park (UHEP) in Scone, NSW.

Since our previous update in February 2025, further environmental investigations and design development have been completed. These have informed a small number of refinements to the proposed overhead line alignment, as well as changes to the design of the relocated 11 kV line. Details of these updates, together with an outline of the next steps for the Review of Environmental Factors (REF), are provided in the attached letter.

The REF is being prepared under Part 5 of the Environmental Planning and Assessment Act 1979 on behalf of Ausgrid as the determining authority. We would welcome any comments or advice your agency may wish to provide for consideration prior to finalisation of the REF, particularly in relation to matters within your jurisdiction.

If you would like to discuss any aspect of the proposal or require further information, please do not hesitate to contact either myself or [redacted]

Thank you very much!

Kind regards,

[redacted]

From: [redacted]
Sent: 14 February 2025 17:38
To: [redacted]
Cc: [redacted]

[redacted]

Subject: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

Hello,

Umwelt has been engaged by Maven Renewable Energy Pty Ltd to manage the development approval process and prepare a Review of Environmental Factors (REF), under Part 5 of the *Environmental Planning and Assessment Act* (EP&A Act 1979). This is being conducted on behalf of Ausgrid for a proposed 66 kV overhead line in Scone, NSW. Please see the attached letter providing further information of the Proposed Activity.

The REF assessing the potential environmental and social impacts of the Proposed Activity is currently being prepared. We would like to provide the Hunter Valley Property Team at Australian Rail Track Corporation the opportunity to identify any potential issues that may require further consideration as part of the preparation of the REF.

Please note that the relevant contact for this project is:

[redacted]

However, if you have any environmental or planning related questions, please don't hesitate to reach out to myself directly.

Thanks,

[redacted]

[redacted]

My workday may look different from your workday. Please do not feel obligated to respond outside of your normal working hours.

[redacted]

From: [redacted]
Sent: Wednesday, 17 December 2025 7:41 AM
To: [redacted]
Cc: [redacted]
Subject: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW.
Attachments: UHEP Project Update for TfNSW_Dec25.pdf

Hello [redacted]

We are writing to follow up on our correspondence earlier this year regarding the proposed 66 kV overhead line associated with the Upper Hunter Energy Park (UHEP) in Scone, NSW.

Since our previous update in February 2025, further environmental investigations and design development have been completed. These have informed a small number of refinements to the proposed overhead line alignment, as well as changes to the design of the relocated 11 kV line. Details of these updates, together with an outline of the next steps for the Review of Environmental Factors (REF), are provided in the attached letter.

The REF is being prepared under Part 5 of the Environmental Planning and Assessment Act 1979 on behalf of Ausgrid as the determining authority. We would welcome any comments or advice your agency may wish to provide for consideration prior to finalisation of the REF, particularly in relation to matters within your jurisdiction.

If you would like to discuss any aspect of the proposal or require further information, please do not hesitate to contact either myself or [redacted]

Thank you very much!

Kind regards,

[redacted]

From: [redacted]
Sent: 14 February 2025 17:38
To: [redacted]

[redacted]

Subject: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

Hello [redacted]

Umwelt has been engaged by Maven Renewable Energy Pty Ltd to manage the development approval process and prepare a Review of Environmental Factors (REF), under Part 5 of the *Environmental Planning and Assessment Act* (EP&A Act 1979). This is being conducted on behalf of Ausgrid for a proposed 66 kV overhead line in Scone, NSW. Please see the attached letter providing further information of the Proposed Activity.

The REF assessing the potential environmental and social impacts of the Proposed Activity is currently being prepared. We would like to provide TfNSW the opportunity to identify any potential issues that may require further consideration as part of the preparation of the REF.

Please note that the relevant contact for this project is:

[redacted]

However, if you have any environmental or planning related questions, please don't hesitate to reach out to myself directly.

Thanks,

[redacted]

[redacted]

My workday may look different from your workday. Please do not feel obligated to respond outside of your normal working hours.

[redacted]

From: [redacted]
Sent: Wednesday, 17 December 2025 7:41 AM
To: [redacted]
Cc: [redacted]
Subject: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW
Attachments: UHEP Project Update for NSWFR_Dec25.pdf

Hello,

We are writing to follow up on our correspondence earlier this year regarding the proposed 66 kV overhead line associated with the Upper Hunter Energy Park (UHEP) in Scone, NSW.

Since our previous update in February 2025, further environmental investigations and design development have been completed. These have informed a small number of refinements to the proposed overhead line alignment, as well as changes to the design of the relocated 11 kV line. Details of these updates, together with an outline of the next steps for the Review of Environmental Factors (REF), are provided in the attached letter.

The REF is being prepared under Part 5 of the Environmental Planning and Assessment Act 1979 on behalf of Ausgrid as the determining authority. We would welcome any comments or advice your agency may wish to provide for consideration prior to finalisation of the REF, particularly in relation to matters within your jurisdiction.

If you would like to discuss any aspect of the proposal or require further information, please do not hesitate to contact either myself or [redacted]

Thank you very much!

Kind regards,

[redacted]

[redacted]

Accelerating Renewable Energy

[redacted]

From: [redacted]
Sent: 14 February 2025 17:39
To: [redacted]
Cc: [redacted]

[redacted]

Subject: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

Hello,

Umwelt has been engaged by Maven Renewable Energy Pty Ltd to manage the development approval process and prepare a Review of Environmental Factors (REF), under Part 5 of the *Environmental Planning and Assessment Act* (EP&A Act 1979). This is being conducted on behalf of Ausgrid for a proposed 66 kV overhead line in Scone, NSW. Please see the attached letter providing further information of the Proposed Activity.

The REF assessing the potential environmental and social impacts of the Proposed Activity is currently being prepared. We would like to provide NSW Fire and Rescue the opportunity to identify any potential issues that may require further consideration as part of the preparation of the REF.

Please note that the relevant contact for this project is:

[redacted]

However, if you have any environmental or planning related questions, please don't hesitate to reach out to myself directly.

Thanks,

[redacted]

[redacted]

My workday may look different from your workday. Please do not feel obligated to respond outside of your normal working hours.

[redacted]

From: [redacted]
Sent: Thursday, 18 December 2025 8:25 AM
To: [redacted]
Cc: [redacted]
Subject: RE: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

Hello [redacted]

Thank you so much for your swift response!

I can confirm that the REF will identify bushfire risk during both construction and operation phases of the transmission line, as well as recommend mitigation measures to minimise risk from potential bushfire threats.

Again, thank you very much for your feedback!

Best regards,

[redacted]

[redacted]

Accelerating Renewable Energy

[redacted]

From: [redacted]
Sent: 17 December 2025 12:27
To: [redacted]
Cc: [redacted]
Subject: FW: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

Hello [redacted]

The NSW RFS has received and reviewed your request below and the attached document.

The NSW RFS advises that the REF shall identify bushfire risk during both construction and operation phases of the transmission line and recommend mitigation measures to minimise risk from potential bushfire threats.

Regards

[redacted]

RFS [redacted]

[redacted]
Sent: Wednesday, 17 December 2025 11:12 AM
To: [redacted]
Subject: FW: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

Hi [redacted]

Received to PES Inbox – FYA

Thanks
[redacted]

From: [redacted]
Sent: Wednesday, 17 December 2025 8:40 AM
To: Planning & Environment Services [redacted]
Cc: [redacted]
Subject: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

> You don't often get email from [redacted]

Hello,

We are writing to follow up on our correspondence earlier this year regarding the proposed 66 kV overhead line associated with the Upper Hunter Energy Park (UHEP) in Scone, NSW.

Since our previous update in February 2025, further environmental investigations and design development have been completed. These have informed a small number of refinements to the proposed overhead line alignment, as well as changes to the design of the relocated 11 kV line. Details of these updates, together with an outline of the next steps for the Review of Environmental Factors (REF), are provided in the attached letter.

The REF is being prepared under Part 5 of the Environmental Planning and Assessment Act 1979 on behalf of Ausgrid as the determining authority. We would welcome any comments or advice your agency may wish to provide for consideration prior to finalisation of the REF, particularly in relation to matters within your jurisdiction.

If you would like to discuss any aspect of the proposal or require further information, please do not hesitate to contact either myself or [redacted]

Thank you very much!

Kind regards,

[redacted]

[redacted]

Accelerating Renewable Energy

[redacted]

From: [redacted]
Sent: 14 February 2025 17:38
To: [redacted]
Cc: [redacted]
Subject: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

Hello,

Umwelt has been engaged by Maven Renewable Energy Pty Ltd to manage the development approval process and prepare a Review of Environmental Factors (REF), under Part 5 of the *Environmental Planning and Assessment Act* (EP&A Act 1979). This is being conducted on behalf of Ausgrid for a proposed 66 kV overhead line in Scone, NSW. Please see the attached letter providing further information of the Proposed Activity.

The REF assessing the potential environmental and social impacts of the Proposed Activity is currently being prepared. We would like to provide NSW Rural Fire Service the opportunity to identify any potential issues that may require further consideration as part of the preparation of the REF.

Please note that the relevant contact for this project is:

[redacted]

However, if you have any environmental or planning related questions, please don't hesitate to reach out to myself directly.

Thanks,

[redacted]

[redacted]

My workday may look different from your workday. Please do not feel obligated to respond outside of your normal working hours.

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: TfNWS - Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW
Attachments: image006.png
image008.jpg
image009.gif
image010.gif
image011.gif
image012.gif
Typical TfNSW SEARS advice.pdf

Hello [redacted]

TfNWS reached out after receiving our update on the REF.

We clarified that we didn't need another meeting, as we already discussed the issues they raised in April and implemented changes to the REF to address these.

However, they shared some typical TfNSW traffic advice, which they have noted is geared towards SSD/EIS projects and provided for reference only.
Could you please do a quick sense check that the existing REF traffic assessment is broadly aligned with TfNSW expectations at an REF-appropriate level (including TIA scope and any OSOM considerations), and let us know if you see any obvious gaps? Just a confirmation check.

Thank you very much!

Kind regards,

[redacted]

From: [redacted]
Sent: 23 December 2025 16:08
To: [redacted]
Cc: [redacted]

Subject: RE: REN25/00053/005: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

Hi [redacted]

Me too!

I realise that the power line project did not require a SEARs, but I will attach the typical advice we provide for – although it is geared towards the SSD applications/EIS, it will include what we require from traffic assessments, including any OSOM assessments. It may be beneficial for your team to check your REF/traffic assessment against.

Kind regards,

[redacted]
Transport for NSW

P [redacted]

Please be aware that the Transport for NSW office's will be closed for the Christmas and New Year holiday period. Our last business day will be Wednesday the 24th of December 2025, and we will return on Monday the 12th of January 2026.
Development Services Renewables will prioritise responding to projects within the Major Projects Portal until 24th of December 2025. Any requests or responses outside the Major Projects Portal will be reviewed and allocated to a team member to respond to your enquiry or request within 21 days. Note that design reviews for strategic designs require 14 days for internal review and all meeting requests are to be requested for January 2026.

[redacted]

OFFICIAL

From: [redacted]
Sent: Tuesday, 23 December 2025 4:00 PM
To: [redacted]
Cc: [redacted]
Subject: RE: REN25/00053/005: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

CAUTION: This email is sent from an external source. Do not click any links or open attachments unless you recognise the sender and know the content is safe.

Hello [redacted]

I'm glad we clarified this – thank you so much for your advice!

Yes, I can confirm that we implemented all the changes to the REF that we discussed last time.

Thank you, [redacted] Have a lovely break, too!

Best regards,

[redacted]

From: [redacted]
Sent: 23 December 2025 15:47
To: [redacted]
Cc: [redacted]
Subject: RE: REN25/00053/005: Proposed 66kV Power Line for the Upper Hunter Energy Park in Scone, NSW

Hi [redacted]

Ah, there must've been some misunderstanding along the line, sorry!
In that case, it may be good to not have the meeting and save us all some time from our busy schedules then!

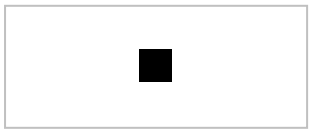
As long as UHEF follows the advice provided in our Response to SEARs and that we have provided in our previous meeting, there shouldn't be too much of an issue with your application.

Have a great break
Kind regards,

[redacted]
Transport for NSW

[redacted]

Please be aware that the Transport for NSW office's will be closed for the Christmas and New Year holiday period. Our last business day will be Wednesday the 24th of December 2025, and we will return on Monday the 12th of January 2026.
Development Services Renewables will prioritise responding to projects within the Major Projects Portal until 24th of December 2025. Any requests or responses outside the Major Projects Portal will be reviewed and allocated to a team member to respond to your enquiry or request within 21 days. Note that design reviews for strategic designs require 14 days for internal review and all meeting requests are to be requested for January 2026.



A.5 Email Records of Submissions and Responses

Submission ID 1

-----Original Message-----
From: [redacted]
Sent: 24 February 2026 18:55
To: [redacted]
Subject: New Message From Upper Hunter Energy Park - We welcome your comments and suggestions. Your feedback will be recorded in our feedback register which will be available to view on our website.

Preference: Give Feedback on the Project
Comments:
To Whom It May Concern,

I am writing to formally object to the proposed wind farm development in and around Scone, an area internationally recognised as the Horse Capital of Australia.

This development raises serious concerns regarding its impact on local wildlife, the welfare of horses, and the long-term viability of the equine industry that underpins the identity, economy, and community of this region.

Scone and the surrounding Upper Hunter are home to diverse native wildlife populations. Large-scale wind turbines pose documented risks to birds, bats, and other fauna through habitat disruption, noise pollution, and collision hazards. The cumulative environmental stress caused by turbine construction and ongoing operation threatens to disturb established ecosystems that cannot be easily restored once damaged.

Of particular concern is the effect this development may have on horses. Horses are highly sensitive animals, especially to low-frequency noise, vibration, shadow flicker, and changes in landscape. These stressors have the potential to negatively impact behaviour, fertility, performance, and overall welfare. Given the concentration of stud farms, training facilities, and performance horses in this region, any additional stress imposed on these animals is unacceptable and could have serious economic and animal-welfare consequences.

Scone's reputation as the Horse Capital of Australia is not merely symbolic—it represents generations of investment, expertise, and global recognition. The equine industry supports local employment, tourism, and international trade. Introducing industrial-scale infrastructure into this unique rural and equine landscape risks irreparable harm to an industry that cannot simply relocate.

I respectfully urge the relevant authorities to reconsider this proposal and prioritise the protection of local wildlife, animal welfare, and the long-standing agricultural and equine heritage of the Scone region. Renewable energy development should not come at the expense of areas with such significant environmental, cultural, and economic value.

Thank you for considering this objection. I trust that these concerns will be given serious and appropriate consideration in the assessment of this proposal.

Yours sincerely,
[redacted]

Feedback: Environmental Matters
Name: [redacted]
Email Address: [redacted]
Phone: [redacted]

[redacted]

From: [redacted]
Sent: Wednesday, 25 February 2026 2:56 PM
To: [redacted]
Subject: Upper Hunter Energy Park - Your recent email & invitation to meet

[redacted]

Thank you for taking the time to share your detailed email and for outlining your concerns regarding the wind farm project. We appreciate the care and thought you have put into raising these matters and recognise how important the local environment, animal welfare, and the equine industry are to the region and its community.

The project has been subject to a detailed assessment process, during which potential impacts on wildlife, livestock, surrounding land uses, and the local community were carefully considered. We nevertheless understand that questions and concerns can remain, and we are committed to maintaining open and respectful engagement with neighbours and stakeholders as the project progresses.

We take feedback like yours seriously, and it is important to us to understand the perspectives of people who live and work locally. Rather than trying to respond to everything in writing, I believe it would be much more helpful to sit down together and talk through your concerns, share the information available, and answer any questions you may have.

If you are available, I would very much welcome the opportunity to meet with you in person next week, ideally on 3 March in the early afternoon. Please let me know if this timing could work for you, or if another time would be more convenient; I will do my best to accommodate.

Thank you again for reaching out and for sharing your perspective. I look forward to continuing the conversation.

Kind regards,

[redacted]

[redacted]

[redacted]

Submission ID 2

[redacted]

[redacted]

Sent: Thursday, 26 February 2026 1:41 PM
To: UHEP
Subject: New Message From Upper Hunter Energy Park - We welcome your comments and suggestions. Your feedback will be recorded in our feedback register which will be available to view on our website.

Anonymous:
Preference: Give Feedback on the Project
Comments: We are adjacent land owners to the proposed wind farm in Bunnan Road, Owens Gap. We have previously received a Neighbour Agreement from YZ Consulting and we have rejected it as it is one sided in favour of UHEP. There are other matters that former Australian Energy Infrastructure Commissioner Andrew Dyer said could be included in such an agreement, on behalf of the adjacent landowners, but which have not been mentioned in the document. We are aware that YZ have contacted us and given us the agreement because we and two other neighbours are the closest and will be the worst affected adjacent landowners to the project.
We are of retirement age and expect we will need to sell our property long before the 25 to 30 years of the project expire. We are concerned about the potential problem of trying to sell our property when the time comes, and how the wind farm will affect the price we can expect to sell for, if the project goes ahead.
We do not want a wind farm across the road from our property and so close to our home. YZ acknowledged there will be noise, construction dust, vibration, and other issues. The winds in summer, which are often strong gales, blow directly onto our home from the direction where some of the wind turbines would be located. That would bring the noise and dust straight to our home. This will have a direct impact on our daily living, and we do not want to have this impact. YZ have estimated that the nearest turbine will be 1.45kms from our home.
We are requesting that UHEP provides us with the final, definitive map of the locations of the turbines, and the definite distances from our home, the height, and dB readings expected at the turbines that would be installed, and demonstrate how that compares with the development application approval. Further we want UHEP to demonstrate how the turbines would visually impact our home. Also, are you required to enter into Neighbour Agreements because your project is expected to exceed permit approvals and/or because the default setback distances are compromised?
We will consider the purchase of our property by UHEP for an amount of $2,000,000 so we can purchase an equivalent property, in close proximity to a major town, with the same kind of lifestyle and outlook as we currently enjoy.
We are also very concerned about the impact this project will have on our other neighbours if it goes ahead.

[redacted]

[redacted]

From: [redacted]
Sent: Friday, 27 February 2026 9:24 AM
To: [redacted]
Subject: Thank You for Sharing Your Feedback on the Upper Hunter Energy Park Project

Dear [redacted]

Thank you very much for submitting your feedback through the project website and for your follow-up call.

As requested, I have shared your feedback with the project proponent.

We appreciate you taking the time to outline your views and concerns. Rather than responding to each matter in detail by email, we believe it would be more helpful to discuss these topics together in person, so we can walk through your questions and provide helpful context.

As mentioned previously, we would welcome the opportunity to meet with you on 3 March. If that date is not suitable, we would be happy to look at an alternative weekday that works for you. We understand weekends are generally more convenient; however, unfortunately, we are not able to accommodate weekend meetings.

If meeting in person proves difficult, we would of course be happy to arrange a call in the late afternoon instead.

Thank you again for your continued engagement, and we look forward to continuing the conversation.

Kind regards,

The UHEP Team

[redacted]

[redacted]

-----Original Message-----

Preference: Give Feedback on the Project
Comments: We are adjacent land owners to the proposed wind farm in Bunnan Road, Owens Gap. We have previously received a Neighbour Agreement from YZ Consulting and we have rejected it as it is one sided in favour of UHEP. There are other matters that former Australian Energy Infrastructure Commissioner Andrew Dyer said could be included in such an agreement, on behalf of the adjacent landowners, but which have not been mentioned in the document. We are aware that YZ have contacted us and given us the agreement because we and two other neighbours are the closest and will be the worst affected adjacent landowners to the project.
We are of retirement age and expect we will need to sell our property long before the 25 to 30 years of the project expire. We are concerned about the potential problem of trying to sell our property when the time comes, and how the wind farm will affect the price we can expect to sell for, if the project goes ahead.
We do not want a wind farm across the road from our property and so close to our home. YZ acknowledged there will be noise, construction dust, vibration, and other issues. The winds in summer, which are often strong gales, blow directly onto our home from the direction where some of the wind turbines would be located. That would bring the noise and dust straight to our home. This will have a direct impact on our daily living, and we do not want to have this impact. YZ have estimated that the nearest turbine will be 1.45kms from our home.
We are requesting that UHEP provides us with the final, definitive map of the locations of the turbines, and the definite distances from our home, the height, and dB readings expected at the turbines that would be installed, and demonstrate how that compares with the development application approval. Further we want UHEP to demonstrate how the turbines would visually impact our home. Also, are you required to enter into Neighbour Agreements because your project is expected to exceed permit approvals and/or because the default setback distances are compromised?
We will consider the purchase of our property by UHEP for an amount of $2,000,000 so we can purchase an equivalent property, in close proximity to a major town, with the same kind of lifestyle and outlook as we currently enjoy.
We are also very concerned about the impact this project will have on our other neighbours if it goes ahead.
Feedback: Other
Name: [redacted]
Email Address: [redacted]
Phone: [redacted]

Submission ID 3

[redacted]

From: [redacted]
[redacted]
Wednesday, 4 March 2026 11:57 AM
To: UHEP
Subject: New Message From Upper Hunter Energy Park - We welcome your comments and suggestions. Your feedback will be recorded in our feedback register which will be available to view on our website.

Anonymous:
Preference: Receive Email Updates
Comments: Submission Opposing the Upper Hunter Energy Park – Wind Turbines at Mountain Station and Proposed Overhead Transmission Line Route

To Whom It May Concern,

I am writing as a long-term local resident to formally object to the proposed Upper Hunter Energy Park wind turbine development at Mountain Station, as well as the proposed overhead transmission line route associated with the project.

This proposal is not appropriate for our local community and raises serious concerns regarding environmental impact, visual amenity, infrastructure burden, and the long-term wellbeing of our children and future generations.

Impact on Community and Rural Character

Our area is defined by its rural landscape, open spaces, agricultural productivity, and peaceful lifestyle. The introduction of large-scale industrial wind turbines across Mountain Station would permanently alter the visual landscape and fundamentally change the character of our community. These turbines are not small structures — they are industrial-scale developments that would dominate ridgelines and be visible across vast distances.

This is not the legacy we want for our children. The transformation of our natural landscape into an industrial energy zone undermines the identity of our region and diminishes the amenity that local families rely on and value.

Concerns Regarding the Proposed Overhead Transmission Lines

The proposed overhead transmission line route is equally concerning. Overhead lines will further fragment the landscape, require significant vegetation clearing, and create ongoing visual and environmental impacts. They may also affect farming operations, property access, and land values.

The cumulative effect of turbines plus overhead transmission infrastructure compounds the overall industrialisation of our district.

Environmental and Agricultural Impacts

Mountain Station and the surrounding areas are important for biodiversity, native wildlife corridors, and productive agricultural land. Construction activity, vegetation clearing, road upgrades, and heavy vehicle movement pose long-term risks to soil health, water systems, and wildlife habitats.

As a community built on primary production and rural enterprise, we cannot afford decisions that compromise agricultural sustainability for future generations.

Impact on Property Values and Community Cohesion

Developments of this scale can negatively impact property values and create division within small communities. The social fabric of rural towns is fragile. Projects that benefit a small number of landholders while imposing impacts on many neighbouring families create lasting tension and inequity.

Future Generations

Most importantly, decisions made today will shape the environment our children inherit. Our children deserve a healthy, natural landscape — not one dominated by industrial infrastructure. Renewable energy is essential, but it must be located appropriately, with genuine community support and minimal long-term impact.

I am also concerned about potential impacts including:

Visual intrusion across rural properties and public viewpoints

Noise impacts and long-term health concerns

Reduced property values

Environmental and biodiversity impacts

Impacts on farming productivity

Increased traffic and disruption during construction

Long-term legacy infrastructure affecting future generations

Our children deserve to grow up in a safe, healthy, and stable rural environment. Large-scale industrial infrastructure in close proximity to homes and farming land is not consistent with that vision. Once constructed, this infrastructure cannot simply be undone — the impacts will be permanent.

For these reasons, I strongly oppose:

The placement of wind turbines at Mountain Station.

The proposed overhead transmission line route through our community.

I respectfully request that this proposal be rejected and that alternative sites and infrastructure solutions be explored that better balance energy needs with community wellbeing, environmental protection, and agricultural sustainability.

Thank you for considering my submission.
Feedback:
[redacted]

[redacted]

From: [redacted]
Sent: Thursday, 5 March 2026 2:53 PM
To: [redacted]
Subject: Upper Hunter Energy Park - Your recent email & invitation to meet

[redacted]

Thank you for taking the time to share your detailed email and for outlining your concerns regarding the proposed wind farm and transmission infrastructure. We appreciate the care you have taken in expressing your views and understand that topics such as landscape character, environmental protection, agricultural land use, and the long-term well-being of local communities are important considerations for many people in the region.

The project has been subject to a detailed assessment process, during which potential impacts on the environment, surrounding land uses, and the local community were carefully considered. Nevertheless, we understand that questions and concerns can remain, and we are committed to continuing open and respectful engagement with neighbours and stakeholders.

We take feedback like yours seriously, and it is important to us to understand the perspectives of people who live and work locally. Rather than attempting to respond to each of the matters you have raised in writing, I believe it would be much more helpful to meet in person and discuss your concerns in more detail, share the information available, and answer any questions you may have.

If you are available, we plan to be in the area on Tuesday, 10 March, and would welcome the opportunity to meet with you between 10 am and 2 pm. Please let me know if this time works for you or if there is another time that is more convenient. I will do my best to accommodate.

Thank you again for taking the time to share your perspective. I look forward to continuing the conversation.

Kind regards,

[redacted]

[redacted]

[redacted]

-----Original Message-----
From: [redacted]
Sent: 04 March 2026 12:57
To: [redacted]
Subject: New Message From Upper Hunter Energy Park - We welcome your comments and suggestions. Your feedback will be recorded in our feedback register which will be available to view on our website.

Anonymous:
Preference: Receive Email Updates
Comments: Submission Opposing the Upper Hunter Energy Park – Wind Turbines at Mountain Station and Proposed Overhead Transmission Line Route

To Whom It May Concern,

I am writing as a long-term local resident to formally object to the proposed Upper Hunter Energy Park wind turbine development at Mountain Station, as well as the proposed overhead transmission line route associated with the project.

This proposal is not appropriate for our local community and raises serious concerns regarding environmental impact, visual amenity, infrastructure burden, and the long-term wellbeing of our children and future generations.

Impact on Community and Rural Character

Our area is defined by its rural landscape, open spaces, agricultural productivity, and peaceful lifestyle. The introduction of large-scale industrial wind turbines across Mountain Station would permanently alter the visual landscape and fundamentally change the character of our community. These turbines are not small structures — they are industrial-scale developments that would dominate ridgelines and be visible across vast distances.

This is not the legacy we want for our children. The transformation of our natural landscape into an industrial energy zone undermines the identity of our region and diminishes the amenity that local families rely on and value.

Concerns Regarding the Proposed Overhead Transmission Lines

The proposed overhead transmission line route is equally concerning. Overhead lines will further fragment the landscape, require significant vegetation clearing, and create ongoing visual and environmental impacts. They may also affect farming operations, property access, and land values.

The cumulative effect of turbines plus overhead transmission infrastructure compounds the overall industrialisation of our district.

Environmental and Agricultural Impacts

Mountain Station and the surrounding areas are important for biodiversity, native wildlife corridors, and productive agricultural land. Construction activity, vegetation clearing, road upgrades, and heavy vehicle movement pose long-term risks to soil health, water systems, and wildlife habitats.

As a community built on primary production and rural enterprise, we cannot afford decisions that compromise agricultural sustainability for future generations.

Impact on Property Values and Community Cohesion

Developments of this scale can negatively impact property values and create division within small communities. The social fabric of rural towns is fragile. Projects that benefit a small number of landholders while imposing impacts on many neighbouring families create lasting tension and inequity.

Future Generations

Most importantly, decisions made today will shape the environment our children inherit. Our children deserve a healthy, natural landscape — not one dominated by industrial infrastructure. Renewable energy is essential, but it must be located appropriately, with genuine community support and minimal long-term impact.

I am also concerned about potential impacts including:

Visual intrusion across rural properties and public viewpoints

Noise impacts and long-term health concerns

Reduced property values

Environmental and biodiversity impacts

Impacts on farming productivity

Increased traffic and disruption during construction

Long-term legacy infrastructure affecting future generations

Our children deserve to grow up in a safe, healthy, and stable rural environment. Large-scale industrial infrastructure in close proximity to homes and farming land is not consistent with that vision. Once constructed, this infrastructure cannot simply be undone — the impacts will be permanent.

For these reasons, I strongly oppose:

The placement of wind turbines at Mountain Station.

The proposed overhead transmission line route through our community.

I respectfully request that this proposal be rejected and that alternative sites and infrastructure solutions be explored that better balance energy needs with community wellbeing, environmental protection, and agricultural sustainability.

Thank you for considering my submission.
Feedback:
Name: [redacted]
Email Address: [redacted]
Phone: [redacted]

Submission ID 4

[redacted]

From: [redacted]
[redacted] Monday, 12 January 2026 3:44 PM
To: UHEP
Subject: Proposed Overhead Line Upper Hunter Energy Park

[redacted]
In regards to your letter in December 2025 re: Upper hunter energy park update:
I would like:
-A better topographical map of the proposed area of the power lines,
-An image and dimensions of the proposed poles and how many meters apart they will be,
-A report on radiation, emf emotions on both poles, windmills and electrical cables,
-I would like to know how far off my fence line they are,
-How are you going to access the area to put the poles and the wind turbines in and provide maintenance,
-Infra sound and noise reports as I have young children and breed animals,
-How you intend to minimise shadow flicker that will annoy and stress my animals and be distracting while working on farm,
-By reports these also cause sleep disturbances, my husband is already having to be on call while doing emergency clinic work and has to have quality sleep when it is available,
-Tell me how you are going to minimise the health effects cause by these powerlines and windmills,
-Do you intend to make financial restitution to an active farm, horse breeding business, our livelihood and decrease the land value in which we have worked so hard to purchase and keep.
-Please can you give me your reasoning as to why you have decided to construct your power poles along our fence line when it will clearly affect our wellbeing and our financial status.

[redacted]

[redacted]

From: [redacted]
Sent: Tuesday, 13 January 2026 1:30 PM
To: [redacted]
Subject: RE: Proposed Overhead Line Upper Hunter Energy Park

[redacted]

Thank you for your interest in the Upper Hunter Energy Park (UHEP) project and for reaching out to our team! Thank you also for taking the time to speak with me earlier today.

As discussed, the questions you raised regarding the power line will be addressed in the Review of Environmental Factors (REF), which is scheduled to go on public exhibition in February. You will be able to review the REF in full at that time and are welcome to provide feedback as part of the exhibition process.

We would also be very happy to meet with you in person in February to discuss the project and any other questions you may have. I will follow up with you to propose some meeting times; in the meantime, please feel free to let me know if you have a preferred date, time, or location. We will do our best to accommodate.

Thank you again for the constructive conversation. I appreciate you taking the time to speak with me.

Kind regards,

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Sent: 12 January 2026 16:44
To: [redacted]
Subject: Proposed Overhead Line Upper Hunter Energy Park

[redacted]

In regards to your letter in December 2025 re: Upper hunter energy park update:
I would like:
-A better topographical map of the proposed area of the power lines,
-An image and dimensions of the proposed poles and how many meters apart they will be,
-A report on radiation, emf emotions on both poles, windmills and electrical cables,
-I would like to know how far off my fence line they are,
-How are you going to access the area to put the poles and the wind turbines in and provide maintenance,
-Infra sound and noise reports as I have young children and breed animals,
-How you intend to minimise shadow flicker that will annoy and stress my animals and be distracting while working on farm,
-By reports these also cause sleep disturbances, my husband is already having to be on call while doing emergency clinic work and has to have quality sleep when it is available,
-Tell me how you are going to minimise the health effects cause by these powerlines and windmills,
-Do you intend to make financial restitution to an active farm, horse breeding business, our livelihood and decrease the land value in which we have worked so hard to purchase and keep.
-Please can you give me your reasoning as to why you have decided to construct your power poles along our fence line when it will clearly affect our wellbeing and our financial status.

[redacted]

[redacted]

From: [redacted]
Sent: Tuesday, 24 February 2026 8:32 AM
To: [redacted]
Subject: Re: Proposed Overhead Line Upper Hunter Energy Park
Attachments: Latest 66kV Design Draft and Lot 672 & 670 Boundary.jpg; Ausgrid 66kV Pole Specs.pdf; Pole Types.jpg; Electricity and health _ ARPANSA_AU.pdf; Statement-wind-farms-human-health-eh57.pdf; Wind-energy-guidelines.pdf; Effects of a high-voltage direct-current transmission line on beef cattle production.pdf; Renewable-energy-rising-property-values-and-insurance.pdf

[redacted]

Good morning!

Thank you again for meeting with Richard and me last week. We appreciate you taking the time to speak with us and to share your questions and concerns.

As discussed, I am following up on the key topics raised and providing the information you requested.

1. 66kV Overhead Line – Draft Design
   Please find attached the section of the current draft design for the 66kV overhead line you requested.
   - The yellow line shows the proposed route.
   - The numbers indicate the current draft pole locations.
   - Your property boundary is shown in blue. This boundary was recently surveyed to ensure we are working from accurate cadastral information.

   Please note this is a draft layout and remains subject to refinement as detailed design progresses.

2. Pole Specifications
   I have confirmed the indicative specifications of the poles proposed near your property:
   - Steel poles, painted green
   - Approximately 20 metres in height
   - Approx. 800 mm diameter at the base
   - Approx. 400 mm diameter at the top

   Attached is some example information on pole types commonly used by Ausgrid, whose requirements we are following. I have also reattached the pole examples we shared during our meeting.

3. Indicative Construction Timeframes
   Overhead line
   - Targeting construction readiness by mid-2026
   - Construction to commence from late 2026 onwards
   - Estimated construction duration: approximately 6 months
   - Works would be undertaken in sections

   Wind farm
   - Construction also anticipated to commence from late 2026 onwards
   - Initial 6 months: civil works such as access tracks and turbine hardstands
   - Followed by turbine installation (18 turbines), estimated at approximately 12 months

   These timeframes remain indicative and subject to approvals and procurement.

4. Community Engagement Activities
   We are committed to informing and engaging with neighbours and the broader community. Below is a summary of some key activities undertaken to date.
   February 2025

- 5–6 February:
    - Letter drop to neighbours within 4 km of the wind farm project area (approx. 120 letters).
    - Letter drop to neighbours within 200 m of the proposed overhead line, in accordance with Ausgrid requirements (approx. 30 letters).
- 7 February:
    - Letters sent to PO Boxes servicing the same areas (approx. 50 letters).
- 6 February:
    - Information placed on the Upper Hunter Shire Council noticeboard at 135 Liverpool Street, Scone.
    - We also enquired about publishing the information on Council's website; however, this option was not available.

During the letter drop, we spoke with residents who were present at the time. Discussions included neighbours who were supportive, neutral, and opposed to the project. We encouraged ongoing dialogue in all cases.
Following the letter drop, we received:

- Phone enquiries
- Website submissions
- Expressions of interest from local businesses, offering their support
- Newsletter sign-ups

All communication we received was acknowledged and responded to.

Regarding your property:
I checked the log entries we made as we distributed the letters. For your address, we wrote the note: *"670 & 672 had 1 letter box big & red. Put 2 letters in box."*
Could you please confirm whether this describes your letterbox? If so, two letters were delivered to your address at that time.

December 2025

- Project-specific letter regarding the overhead line sent via Australia Post to previously confirmed addresses within 200 m of the proposed line.

To date, responses include:

- Phone enquiries
- Email enquiries
- Newsletter sign-ups

All communication we received was acknowledged and responded to.

February 2026

- On 9 February 2026, the Review of Environmental Factors (REF), a description of the process, and submission details were published on the project website, www.UHEP.com.au.
- At the same time, advice on how to access the REF and make submissions was also placed on the Upper Hunter Shire Council noticeboard.

To date, responses include:

- Phone enquiries
- Email enquiries

All incoming communication has been and will continue to be promptly responded to.

Upcoming Engagement (2026)

- One-on-one meetings with community members who wish to speak further
- Newsletter and website updates in line with progress updates
- Re-establishment of the CCC (Community Consultative Committee) for the project; the chairperson has been appointed by the relevant government department, DPHI, recently
- Targeted community pop-up sessions and stakeholder engagement as we are getting closer to construction

5. Health

Please find attached the health information shared during our meeting.

In relation to the Statement on Wind Farms and Human Health, I measured the distance from your property line to the nearest proposed wind turbine. The distance exceeds 1,500 metres.

6. Animal Health

Please find attached the additional health information focused on farm animals.

The risk to animals was carefully considered as part of the wind farm approval process and will continue to be monitored closely throughout the design, construction, and operational phases of the project, in line with government regulations.

7. Property Value

Please find attached information relating to property values and wind farm developments. The fact sheet includes the articles on which it is based.

Please let me know if you would like to discuss any of the above in more detail. We are always available to meet again or speak by phone at any time.

Kind regards,

[redacted]

Submission ID 5

[redacted]

[redacted]

Sent: Saturday, 28 February 2026 2:36 PM
To: UHEP
Subject: Public submission - REF

To whom it may concern,

I wish to lodge a formal objection to the Review of Environmental Factors (REF) for the proposed 66 kV overhead line associated with the Upper Hunter Energy Park project.

My primary concern relates to the environmental impacts arising from the removal and disturbance of native vegetation and habitat, particularly within endangered ecological communities identified within the project area. The REF acknowledges vegetation clearing and habitat fragmentation associated with construction of transmission infrastructure; however, the broader and cumulative impacts of the overall project appear understated.

While the REF characterises many impacts from the overhead power line as indirect, residents and landholders in the project vicinity will experience direct environmental consequences resulting from turbine construction, associated infrastructure, access roads, and ongoing operational activities. These works will contribute to permanent habitat loss, fragmentation of wildlife corridors, and increased pressure on already vulnerable ecosystems and species such as critically endangered Regent honeyeaters and Swift Parrots as well as Koala's and Legless Lizards.
The clearing, construction and ongoing implementation of the project are likely to mitigate pest animal and weed control activities that can be conducted both on the ground and aerially, thus placing further pressure on the environment and agricultural lands.

The Upper Hunter region supports environmentally significant landscapes and biodiversity values that warrant a more precautionary approach. The extent of vegetation removal and disturbance within endangered ecological communities raises serious concerns regarding the adequacy of avoidance, mitigation, and offset measures proposed. In my view, the environmental assessment does not sufficiently demonstrate that impacts have been avoided or minimised to the greatest extent possible.

Given the scale of clearing and the long-term operational footprint of the project, I request that the REF not be approved in its current form and that a more comprehensive environmental assessment be undertaken to fully evaluate cumulative impacts to biodiversity, habitat connectivity, and endangered ecological communities.

Thank you for the opportunity to provide this submission.

Yours sincerely,
[redacted]

Sent from Yahoo Mail for iPhone

[redacted]

From: [redacted]
Sent: Tuesday, 3 March 2026 6:10 AM
To: [redacted]
Subject: RE: Public submission - REF

[redacted]

Thank you for your submission regarding the 66kV Overhead Line Review of Environmental Factors (REF), received on Saturday, 28 February 2026.

Your submission has been registered as part of the REF consultation process. All submissions received during the exhibition period will be provided in full to Ausgrid, as the determining authority, for consideration as part of its assessment of the REF under Part 5 of the *Environmental Planning and Assessment Act 1979 (NSW)* prior to any determination being made in relation to the proposed 66kV Overhead Line.

We appreciate the time taken to provide feedback on the project.

If you have any questions regarding the REF process, please contact us.

Kind regards,

The UHEP Team

[redacted]

[redacted]

Subject: Public submission - REF

To whom it may concern,

I wish to lodge a formal objection to the Review of Environmental Factors (REF) for the proposed 66 kV overhead line associated with the Upper Hunter Energy Park project.

My primary concern relates to the environmental impacts arising from the removal and disturbance of native vegetation and habitat, particularly within endangered ecological communities identified within the project area. The REF acknowledges vegetation clearing and habitat fragmentation associated with construction of transmission infrastructure; however, the broader and cumulative impacts of the overall project appear understated.

While the REF characterises many impacts from the overhead power line as indirect, residents and landholders in the project vicinity will experience direct environmental consequences resulting from turbine construction, associated infrastructure, access roads, and ongoing operational activities. These works will contribute to permanent habitat loss, fragmentation of wildlife corridors, and increased pressure on already vulnerable ecosystems and species such as critically endangered Regent honeyeaters and Swift Parrots as well as Koala's and Legless Lizards.
The clearing, construction and ongoing implementation of the project are likely to mitigate pest animal and weed control activities that can be conducted both on the ground and aerially, thus placing further pressure on the environment and agricultural lands.

The Upper Hunter region supports environmentally significant landscapes and biodiversity values that warrant a more precautionary approach. The extent of vegetation removal and disturbance within endangered ecological communities raises serious concerns regarding the adequacy of avoidance, mitigation, and offset measures proposed. In my view, the environmental assessment does not sufficiently demonstrate that impacts have been avoided or minimised to the greatest extent possible.

Given the scale of clearing and the long-term operational footprint of the project, I request that the REF not be approved in its current form and that a more comprehensive environmental assessment be undertaken to fully evaluate cumulative impacts to biodiversity, habitat connectivity, and endangered ecological communities.

Thank you for the opportunity to provide this submission.

Yours sincerely,
[redacted]

Sent from Yahoo Mail for iPhone

[redacted]

From: [redacted]
Sent: Wednesday, 11 March 2026 3:43 PM
To: [redacted]
Cc: [redacted]
Subject: RE: Upper Hunter Energy Park: Project Update - Meeting Opportunity

Hello [redacted]

I knew I forgot something:

6. Community Benefit Sharing

As discussed last week and again yesterday, the project will have a community fund in place, which has been part of the approval.

- The project will establish a Community Enhancement Program Fund to support initiatives in the Upper Hunter local government area.
- The fund will be administered by the Upper Hunter Shire Council.
- Community groups will be able to apply annually for funding.

We are in the midst of collaborating with the Upper Hunter Shire Council to prepare a charter for this fund.

I hope I covered all topics. Please let me know if there is anything else you would like to discuss.

Thank you very much!

Kind regards,

[redacted]

[redacted]

[redacted]

From: [redacted]
Sent: 11 March 2026 16:26
To: [redacted]
Cc: [redacted]
Subject: RE: Upper Hunter Energy Park: Project Update - Meeting Opportunity

Hello [redacted]

Thank you again for meeting with [redacted] and me last week and again yesterday. We truly appreciate you taking the time to speak with us and to share your questions and concerns.

As discussed, I am following up on the key topics raised and providing the additional information.

1. Visual Impact
   We would like to arrange a photomontage showing the current proposed project layout from a location on your property. This type of visualisation can help provide a clearer indication of how the wind farm may appear in the landscape from your property once constructed.
   To prepare this, our contractor would take a photograph in the direction of the proposed wind farm location, which would then be used to create the photomontage. Where possible, we usually try to take the photograph from a location that represents the view most commonly experienced from the home, such as near the entrance, porch, or driveway. If you are comfortable with this, please let me know, and we can make the necessary arrangements.
   Please feel free to let me know if you have any questions.

2. Noise Impact
   Similar to the photomontage, we would like to gain a better understanding of the potential noise environment at your property. This can help provide a clearer indication of how sound from the proposed wind farm may be experienced from your property. As we mentioned during our meeting last week, one way to do this is by conducting a background noise assessment, which involves measuring the existing noise levels in the environment around your home.
   An independent specialist, experienced in wind farm noise assessments, can then use these measurements to estimate how sound from the proposed turbines may be experienced at nearby residences and to assess compliance with the applicable regulatory requirements.

   Additionally, I would like to share the following information with you:
   - My email from last year, which includes further information about the assessment process. Please let me know if you would like me to provide any additional details.
   - A fact sheet that explains wind farm noise assessments in more detail. While it was originally prepared for another wind farm project, the information is broadly applicable.
   - A link describing common noise levels, which may help provide context for values such as 35 dB:
     https://noiseawareness.org/info-center/common-noise-levels/#:~:text=common%20noise%20levels%20%2D%20how%20loud,Avoid%20noisy%20environments.

3. Property Value
   - Please find attached information relating to property values and wind farm developments.

   The fact sheet includes the articles on which it is based, if you wish to read them as well.

4. CCC
   We also discussed the Community Consultative Committee (CCC), which provides a formal forum for the community to stay informed about the project and raise any questions or concerns directly with the project team.
   I understand that the chairperson has reached out to you, which is excellent. Please don't hesitate to contact me if you have any questions about the CCC or how it operates.

5. Neighbour Agreement
   I asked our legal team for a revised version, which regards the helpful feedback you kindly provided. I will share it once ready.

Please let me know if you would like to discuss any of the above in more detail. We are always available to meet again or speak by phone at any time.

Kind regards,

[redacted]

[redacted]

[redacted]

From: [redacted]
Sent: 05 March 2026 16:44
To: [redacted]
Cc: [redacted]
Subject: RE: Upper Hunter Energy Park: Project Update - Meeting Opportunity

Hello [redacted]

Thank you very much for meeting with us this week! I really appreciate you taking the time out of your busy schedule to speak with [redacted] and me.

We are also very grateful for the feedback, insights, and thoughtful questions you shared during our conversation. Input like this is very helpful to us and provides a valuable perspective as we continue working through the project details.

I just wanted to let you know that we are currently gathering the information we promised and will send it through to you very soon. We are also working on an updated version of the neighbour agreement, which I will share with you once it is ready.

Thank you for your patience. Please do not hesitate to reach out if anything comes to mind in the meantime.

Kind regards,

[redacted]

[redacted]

[redacted]

From: [redacted]
Sent: 02 March 2026 13:42
To: [redacted]
Cc: [redacted]
Subject: RE: Upper Hunter Energy Park: Project Update - Meeting Opportunity

Hello [redacted]

I look forward to seeing you tomorrow at 2:30 pm. My colleague [redacted] will join our meeting.

I checked, and it seems the Hunter Warbirds Café, Kittyhawk Café, is closed on Tuesdays. However, the museum is open.
As long as we can access the café area and its tables, we can still meet there if you like.

Thank you very much for confirming!

Kind regards,

[redacted]

From: [redacted]
Sent: 02 March 2026 12:09
To: [redacted]
Cc: [redacted]
Subject: RE: Upper Hunter Energy Park: Project Update - Meeting Opportunity

Hello [redacted]

Thank you for your follow-up email. I can confirm that there is no community meeting planned for our project. However, we are meeting with all members of the community individually who wish to discuss the project.

As for tomorrow, I'm still reconfirming meeting times with other community members; however, if I can reconfirm the other meetings, we could accommodate a meeting with you at 2:30 pm. Would this suit you, [redacted]

Thank you very much for letting me know!

Kind regards,

[redacted]

[redacted]

From: [redacted]
Sent: 02 March 2026 11:59
To: [redacted]
Subject: Re: Upper Hunter Energy Park: Project Update - Meeting Opportunity

Sorry [redacted] it appears that leaflet was about a different project. Disregard.

Thanks
[redacted]

Sent from Yahoo Mail for iPhone

On Sunday, March 1, 2026, 4:58 pm, [redacted]:

> Hi [redacted]
>
> Apologies for the late response. What time on Tuesday would you be available to meet? I heard through some neighbours that there was a leaflet in the letterbox for a community meeting about the project. We did not receive this. Can you please provide me a copy at your earliest convenience?
>
> Many thanks
> [redacted]
>
> Sent from Yahoo Mail for iPhone
>
> On Wednesday, February 25, 2026, 4:53 pm, [redacted]:

Hello [redacted]

Thank you very much for your messages and for offering the weekend as an option, as suggested by John. We really appreciate your willingness to find a suitable time to meet!

Unfortunately, we are not able to accommodate meetings over the weekend. However, we would be very happy to arrange a call in the late afternoon on a weekday if that is more convenient around work commitments.

We also remain available to meet in person on 3 March, as previously discussed, should that still suit you, [redacted]

Please let me know what option works best for you, and we will do our best to align our schedules accordingly. I will offer the same options to [redacted]

I look forward to speaking with you!

Kind regards,

[redacted]

[redacted]

From: [redacted]
Sent: 19 February 2026 09:44
To: [redacted]
Cc: [redacted]
Subject: RE: Upper Hunter Energy Park: Project Update - Meeting Opportunity

Hello [redacted]

Thank you very much for your message and for your willingness to meet. We appreciate it!

We would be very happy to arrange a joint meeting with [redacted]. I will reach out to John to see whether that would suit them as well.

I understand that taking time off work is not ideal. If it would make things easier, we are happy to meet in town or at a location that is more convenient for you.

We will plan for the afternoon, as you suggested. Please allow me a few days to coordinate with [redacted] and my colleague, and I will come back to you with a proposed time.

Thank you again, and we look forward to catching up!

Kind regards,

[redacted]

[redacted]

[redacted]

From: [redacted]
Sent: 19 February 2026 06:27
To: [redacted]
Subject: Re: Upper Hunter Energy Park: Project Update - Meeting Opportunity

Hi [redacted]

Sorry I missed your call. Happy to meet. Would be keen to do so together with neighbours. Shame we need to take off from work for the meeting though.

The afternoon of that date would be preferable. Let me know what works.

Thank you,

[redacted]

Sent from Yahoo Mail for iPhone

On Wednesday, February 18, 2026, 12:17 pm, [redacted] > wrote:

> Hello [redacted]
>
> I hope you have both been keeping well!
>
> [redacted] as the project continues to progress, we have been reviewing a few matters and thought it would be helpful to

reconnect with you. We will be in Scone on Tuesday, 3 March, and wondered whether you might be available for a meeting sometime between 10 am and 2 pm.

We would really value the opportunity to share a brief update and continue the conversation we started previously. It is important to us that you remain informed and have the chance to ask questions or discuss any concerns directly with us.

Thank you very much, and I look forward to hearing whether 3 March may suit you!

Kind regards,

[redacted]

Submission ID 6

[redacted]

From: [redacted]
Sent: Sunday, 1 March 2026 3:11 PM
To: UHEP
Subject: Submission in regards to the REF document

To whom it may concern,

I wish to lodge a formal objection to the Review of Environmental Factors (REF) for the proposed 66 kV overhead line associated with the Upper Hunter Energy Park project.

One of our primary concerns is in relation to the quality of our lifestyle and health with the installation of both the turbines and overhead power lines within such close proximity to our home and agricultural properties. We have invested significant time and money in not only our business and our home but also in our local community for over 40 years.

No doubt there will be disturbances to residences, livestock, equine operations and farm activities not to mention the dust drift that will affect homes and water courses. The potential reduction in air quality is a serious issue for us with two diagnosed asthmatics in our family. Add to this the concerns in regards to EMF and the anxiety induced stress related to the possibility of reduced property values and diminished quality of life.

Although the REF concludes that no significant long term impacts are expected, those of us within close proximity will still experience meaningful short term and localised negative impacts. These will be exacerbated during construction and include the loss of our rural landscape, construction noise, vibration and dust. There are serious weed and biosecurity risks, huge potential habitat destruction and increased bushfire threat.

Apparently all impacts are considered manageable through detailed mitigation measures but they remain very real material considerations for affected landholders.

Another major concern relates to the environmental impacts arising from the removal and disturbance of native vegetation and habitat, particularly within endangered ecological communities identified within the project area. The REF acknowledges vegetation clearing and habitat fragmentation associated with construction of transmission infrastructure; however, the broader and cumulative impacts of the overall project appear understated.

While the REF characterises many impacts from the overhead power line as indirect, residents and landholders in the project vicinity will experience direct environmental consequences resulting from turbine construction, associated infrastructure, access roads, and ongoing operational activities. These works will contribute to permanent habitat loss, fragmentation of wildlife corridors, and increased pressure on already vulnerable ecosystems and species such as critically endangered Regent honeyeaters and Swift Parrots as well as Koala's and Legless Lizards.
The clearing, construction and ongoing implementation of the project are likely to mitigate pest animal and weed control activities that can be conducted both on the ground and aerially, thus placing further pressure on the environment and agricultural lands.

The Upper Hunter region supports environmentally significant landscapes and biodiversity values that warrant a more precautionary approach. The extent of vegetation removal and disturbance

within endangered ecological communities raises serious concerns regarding the adequacy of avoidance, mitigation, and offset measures proposed. In my view, the environmental assessment does not sufficiently demonstrate that impacts have been avoided or minimised to the greatest extent possible.

Given the scale of clearing and the long-term operational footprint of the project, I request that the REF not be approved in its current form and that a more comprehensive environmental assessment be undertaken to fully evaluate cumulative impacts to biodiversity, habitat connectivity, and endangered ecological communities.

Thank you for the opportunity to provide this submission.

Yours sincerely,

[redacted]

[redacted]

From: [redacted]
Sent: Tuesday, 3 March 2026 6:10 AM
To: [redacted]
Subject: RE: Submission in regards to the REF document

[redacted]

Thank you for your submission regarding the 66kV Overhead Line Review of Environmental Factors (REF), received on Sunday, 1 March 2026.

Your submission has been registered as part of the REF consultation process. All submissions received during the exhibition period will be provided in full to Ausgrid, as the determining authority, for consideration as part of its assessment of the REF under Part 5 of the *Environmental Planning and Assessment Act 1979 (NSW)* prior to any determination being made in relation to the proposed 66kV Overhead Line.

We appreciate the time taken to provide feedback on the project.

If you have any questions regarding the REF process, please contact us.

Kind regards,

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Sent: 01 March 2026 16:11
[redacted]
Subject: Submission in regards to the REF document

To whom it may concern,

I wish to lodge a formal objection to the Review of Environmental Factors (REF) for the proposed 66 kV overhead line associated with the Upper Hunter Energy Park project.

One of our primary concerns is in relation to the quality of our lifestyle and health with the installation of both the turbines and overhead power lines within such close proximity to our home and agricultural properties. We have invested significant time and money in not only our business and our home but also in our local community for over 40 years.

No doubt there will be disturbances to residences, livestock, equine operations and farm activities not to mention the dust drift that will affect homes and water courses. The potential reduction in air quality is a serious issue for us with two diagnosed asthmatics in our family. Add to this the concerns in regards to EMF and the anxiety induced stress related to the possibility of reduced property values and diminished quality of life.

Although the REF concludes that no significant long term impacts are expected, those of us within close proximity will still experience meaningful short term and localised negative impacts. These will be exacerbated during construction and include the loss of our rural landscape, construction noise, vibration and dust. There are serious weed and biosecurity risks, huge potential habitat destruction and increased bushfire threat.

Apparently all impacts are considered manageable through detailed mitigation measures but they remain very real material considerations for affected landholders.

Another major concern relates to the environmental impacts arising from the removal and disturbance of native vegetation and habitat, particularly within endangered ecological communities identified within the project area. The REF acknowledges vegetation clearing and habitat fragmentation associated with construction of transmission infrastructure; however, the broader and cumulative impacts of the overall project appear understated.

While the REF characterises many impacts from the overhead power line as indirect, residents and landholders in the project vicinity will experience direct environmental consequences resulting from turbine construction, associated infrastructure, access roads, and ongoing operational activities. These works will contribute to permanent habitat loss, fragmentation of wildlife corridors, and increased pressure on already vulnerable ecosystems and species such as critically endangered Regent honeyeaters and Swift Parrots as well as Koala's and Legless Lizards.
The clearing, construction and ongoing implementation of the project are likely to mitigate pest animal and weed control activities that can be conducted both on the ground and aerially, thus placing further pressure on the environment and agricultural lands.

The Upper Hunter region supports environmentally significant landscapes and biodiversity values that warrant a more precautionary approach. The extent of vegetation removal and disturbance within endangered ecological communities raises serious concerns regarding the adequacy of avoidance, mitigation, and offset measures proposed. In my view, the environmental assessment does not sufficiently demonstrate that impacts have been avoided or minimised to the greatest extent possible.

Given the scale of clearing and the long-term operational footprint of the project, I request that the REF not be approved in its current form and that a more comprehensive environmental assessment be undertaken to fully evaluate cumulative impacts to biodiversity, habitat connectivity, and endangered ecological communities.

Thank you for the opportunity to provide this submission.

Yours sincerely,

[redacted]

[redacted]

From: [redacted]
Sent: Thursday, 5 March 2026 10:25 AM
To: [redacted]
Subject: Upper Hunter Energy Park: Meeting Follow-up
Attachments: Statement-wind-farms-human-health-eh57.pdf; Electricity and health _ ARPANSA_AU.pdf

Dear [redacted]

Thank you very much for meeting with [redacted] and me this week. We appreciate you taking the time to speak with us and to share your questions and concerns.

As discussed, I am following up on the key topic you raised: the potential impact of the wind farm on the health of your family.

Please find attached information relating to:
a) Wind farms and health
b) Power lines and health

The attached material was prepared by relevant authorities.

In relation to the Statement on Wind Farms and Human Health, I measured the distance from the nearest proposed wind turbine to your property line, and the distance exceeds 1,500 metres. The distance between the nearest proposed wind turbine and your home is over 2,500 meters.

Please let me know if you would like to discuss the project further. We are always available to meet again or speak by phone at any time.

Kind regards,

[redacted]

[redacted]

Submission ID 7

[redacted]

From: [redacted]
Sent: Wednesday, 11 February 2026 1:23 PM
To: [redacted]
Subject: [redacted]

hello

can you please tell me where the exhibition is relating the 66kV overhead line?

it is referred to in doco but the location is not detailed?

Many thanks

--
[redacted]

[redacted]

[redacted]

From: [redacted]
Sent: Wednesday, 11 February 2026 2:09 PM
To: [redacted]
Subject: RE: UHEP - exhibition querey

[redacted]

Thank you for your interest in the Upper Hunter Energy Park (UHEP) project and the overhead line & related public exhibition!

You kindly mentioned that the topic was referred to in “doco”, but the location was not detailed. Could you please share more information so I can ensure any unclear directions can be addressed?

Here are a few links for you to find the information:

1. **Home – https://www.uhep.com.au/**
   Please see the second topic from the top, which provides information and offers two buttons that lead you straight to more information: our news post, as well as the REF documents for your review.

2. **Project Updates – https://www.uhep.com.au/project-updates/**
   Please see the latest news post to inform on the REF & the public exhibition, explaining the process - https://www.uhep.com.au/project-updates/review-of-environmental-factors-ref-public-exhibition/

3. **Get Involved – https://www.uhep.com.au/get-involved/**
   Please see the dedicated section at the top, including links to the REF document and a map for your review.

4. **Contact Us – https://www.uhep.com.au/contact-us/**
   Here you can make submissions. You can use the contact Form and choose “Give Feedback on the Project”. There is a dedicated “REF – Review of Environmental Factors” topic.

Please let me know if you have any further questions.

Thank you very much!

Kind regards,

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

From: [redacted]
Sent: 11 February 2026 14:23
To: UHEP [redacted]
Subject: UHEP - exhibition querey

hello

can you please tell me where the exhibition is relating the 66kV overhead line?

it is referred to in doco but the location is not detailed?

Many thanks

--
[redacted]

[redacted]

Submission ID 8

[redacted]

From: [redacted]
Sent: Friday, 27 February 2026 8:58 AM
To: [redacted]
Subject: Re: Upper Hunter Energy Park - Easement

[redacted]
I refer to your email below from July 2024 in which you state that you will keep me updated .You have failed to do this as you had a duty to do so . I have not been informed as to where exactly the line is now proposed to be positioned except for your verbal comment that it will be extremely close to both sides of my boundary. My property will be affected by the positioning of the powerline. I am waiting for advice from a surveyor regarding this
Due to your lack of transparity and failure to consult I hereby object to the position of the proposed powerline until I can be provided me with complete clarity

Kind regards,

[redacted]

From: [redacted]
Sent: Wednesday, July 10, 2024 9:40 AM
To: [redacted]
Cc: [redacted]
Subject: RE: Upper Hunter Energy Park - Easement

Dear [redacted]

Thank you very much for your email and our conversation just now!

We truly appreciate your ongoing interest in the project and your willingness to accept an easement on your land. As mentioned, we would like to wait for the power line design to be updated and close to the finalised draft before we look into the easement options with fresh eyes, considering the financial viability of the overall project.

I will keep you updated once we reach this point.

Thank you very much, [redacted]

Warm regards,

[redacted]

[redacted]

From: [redacted]
Sent: Friday, 27 February 2026 12:27 PM
To: [redacted]
Cc:
Subject: RE: Upper Hunter Energy Park - Easement

[redacted]

Thank you for your email and for taking the time to share your concerns. I acknowledge receipt of your correspondence.

I will review the matters you have raised and will come back to you with a more detailed response next week. We would also be happy to meet with you to discuss your concerns in more detail, should you find that helpful. Please let me know if you would be open to arranging a time to meet.

In the meantime, I would like to note that the Review of Environmental Factors (REF) for the proposed 66 kV Overhead Line is currently on public exhibition until 1 March 2026.
This process provides an opportunity for interested community members and stakeholders to make a formal submission and have their feedback considered as part of the formal assessment process.

The REF documentation can be accessed here:
https://www.uhep.com.au/get-involved/

Further information about the project and the REF is available here, including details on how to make submissions until 1 March 2026:
https://www.uhep.com.au/project-updates/review-of-environmental-factors-ref-public-exhibition/

Please do not hesitate to contact me if you have any questions.

Kind regards,

[redacted]

[redacted]

[redacted]

From: [redacted]
Sent: 27 February 2026 09:58

From: [redacted]
To:
Cc:
Subject: RE: Upper Hunter Energy Park - Easement
Attachments: image001.jpg
image002.gif
image003.gif
image004.gif
image005.gif
image011.png
image012.png
image013.png
image014.png
image015.png
image016.png

Hello [redacted]

Thank you again for your email sent on 27 February 2026, outlining your concerns regarding the proposed powerline alignment. We appreciate you taking the time to share your concerns with us.

Since our previous correspondence in July 2024, the project team has continued technical investigations and design refinements. As part of this process, a project update letter was delivered to neighbouring properties, including your property, in February 2025 to provide an update on project progress, including the proposed 66kV overhead line.

The alignment has continued to be refined through the design process and was most recently confirmed in February 2026 following further technical assessments and consideration of site constraints. In developing the alignment, particular attention was given to maintaining distance from nearby dwellings where possible, and the current alignment has been adjusted to increase separation from your residence.

I note your concern that the alignment may be located close to your property boundary and that you are seeking advice from a surveyor. Should you wish to share the surveyor's findings once available, we would be happy to review them.

Your objection to the proposed powerline position has been received and noted. The alignment shown in the project plans reflects the outcome of the current design and assessment process. The latest plans can be reviewed together if you would like to discuss the alignment in more detail.

If you have any questions or would like to discuss the alignment further, please feel free to contact me. I remain available should you wish to arrange a meeting or phone conversation.

Kind regards,

[redacted]

[redacted]

YZ Logo

[redacted]

[redacted]

[redacted]

umwelt

P 1300 793 267 E info@umwelt.com.au W umwelt.com.au

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