Flora and Fauna Assessment

Proposed industrial development, Lot 3 DP 251779, 88 Murrays Flat Road, Towrang.

Final Report – July 2026

Hayes Environmental reference: 21024

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Project Team

Name	Position/Role	Relevant qualifications & experience
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Mr Daniel Clark	Botanist	BSc (Hons) (Botany), University of Sydney, 2010 Cert. IV in General Horticulture, 2005 Cert. II in Bushland Regeneration, 2000 Cert. IV in Workplace Training and Assessment, 2011 Grad. Plant Science Internship, National Herbarium of NSW, Royal Botanic Gardens, 2009 Practicing member of the Ecological Consultants Association of NSW. 23 years of field botanist experience in the Sydney and greater Sydney region.
Mr Harry Engel	Fauna ecologist	BmarineSc, University of Wollongong, 2023 Scientific Licence, s132c of the NP&W Act 1974 (SL100484) DPI Animal Care & Ethics Committee Approval 10 years of experience as a field ecologist with Lesryk Environmental Pty Ltd.

Conflict of Interest

To the best of my knowledge and belief, I, Rebecca Hogan, have no past, present or future relationship to stakeholders or decision-makers connected to this project that might be regarded as an actual, perceived or potential conflict of interest with my professional responsibilities and duties as a consultant.

Certification

This Flora and Fauna Assessment report has been prepared to address requirements of the *NSW Biodiversity Conservation Act 2016*, the *Commonwealth Environment Protection & Biodiversity Conservation Act 1999*, and *Goulburn Mulwaree Local Environmental Plan 2009*. To the best of my knowledge it presents true and relevant facts without omission, and draws conclusions from logical and reasonable interpretation of the facts. It is current at the date of issue, being 26th July 2026.

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2026 PRACTISING MEMBER

Disclaimer

There are inherent uncertainties involved in surveying and documenting the natural environment. Some of this information will change over time. This report is also based in part on information provided by the client and by other external organisations. This report is to be used solely for determination of the specified development application. It shall not be replicated or altered without the express written permission of the author. Hayes Environmental does not accept any liability for consequences arising from its use.

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FLORA AND FAUNA ASSESSMENT

LOT 3 DP 251779
88 MURRAYS FLAT ROAD, TOWRANG NSW 2580

PROPOSED INDUSTRIAL DEVELOPMENT

July 2026

EXECUTIVE SUMMARY

This Flora and Fauna Assessment report has been prepared to assess the biodiversity impacts of a proposed industrial development at Lot 3 DP 251779, 88 Murrays Flat Road, Towrang, within the Goulburn Mulwaree Local Government Area.

The subject property (Lot 3 DP 251779) is 32 hectares in size. It is zoned E4 General Industrial under the *Goulburn Mulwaree Local Environmental Plan 2009* (GMLEP). A minimum lot size has not been assigned to the land. It is located in the IBRA Bungonia sub-region (SEH07).

The subject land for this assessment (as shown on Figure 1 – Site map) comprises:

i. the western portion of the subject property, with an area of 6.93 hectares; and

ii. two small areas of road verge at the intersection of Murrays Flat Road with the Hume Highway, with a combined area of 0.22 hectares.

Native vegetation within the subject land consists of isolated trees with a combined canopy area of approximately 0.06ha, and small patches of native grassland (where the native cover is 15% or greater), with a combined area of 0.16ha.

Native trees present have been identified as remnant or regrowth PCT 3373 *Goulburn Tableland Box-Gum Grassy Forest*.

PCT 3373 is wholly associated with the threatened ecological community, *White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions*, listed as Critically Endangered under the NSW BC Act. The vegetation present does not meet necessary condition criteria to be included in the Commonwealth EPBC Act listing of the equivalent community.

No threatened plant species are known or likely to occur within the subject land.

No threatened fauna species are known to breed or reside within the subject land. However, ten (10) threatened fauna species are assumed to utilise vegetation and habitats present within the site on

occasions. Potential impacts upon these species have been assessed as required under the NSW BC Act and Commonwealth EPBC Act.

The proposal is to establish a scrap metal shredding facility and metal recycling yard within the development site. The proposal would retain native trees where practical. The extent of impact on native vegetation would be 0.16ha.

Impact amelioration measures relied upon in the assessment include:

* Tree protection measures shall be installed around trees to be retained within the subject land, as recommended by an Arborist.
* The extent of site works for the highway intersection upgrade shall be clearly marked on site.

Impact assessment conclusions:

* *National*

  The proposed development would not be likely to impose a significant impact upon any matter of *National Environmental Significance* listed under the Commonwealth EPBC Act. On this basis, there is no requirement to refer the project to the Commonwealth Minister for Environment.

* *State*

  BC Act - The Biodiversity Offset Scheme does not apply. Further assessment of the project using the Biodiversity Assessment Method (BAM) is not required. A Biodiversity Development Assessment Report (BDAR) is not required. Offsetting of impacts under the Biodiversity Offsets Scheme (BOS) is not required.

  SEPP (Biodiversity Conservation) 2021 - Chapter 4 *Koala habitat protection 2021* is relevant to the subject land and Part 4.2 *Development control of koala habitats* applies. The development would have a low or no impact on Koalas or Koala habitat. The subject land does not contain core koala habitat. Council may grant consent to the development application.

* *Local*

  The proposed development is consistent with the biodiversity conservation provisions of GMLEP (2009).

1 INTRODUCTION

1.1 Context

This Flora and Fauna Assessment report has been prepared to assess the biodiversity impacts of a proposed industrial development at Lot 3 DP 251779, 88 Murrays Flat Road, Towrang, within the Goulburn Mulwaree Local Government Area.

1.2 Subject Land

The subject property (Lot 3 DP 251779, 88 Murrays Flat Road, Towrang) is 32 hectares in size. It is zoned E4 General Industrial under the *Goulburn Mulwaree Local Environmental Plan 2009* (GMLEP). A minimum lot size has not been assigned to the land.

The property is located within a broad belt of historically cleared agricultural land east of the city of Goulburn. It is on the southern edge of Murrays Flat, a broad river-flat associated with the Wollondilly River.

The land is characterised by open pastures strongly dominated by exotic grass and weed species. Isolated native trees are scattered through the paddocks. Small stands of trees occur in the vicinity of the existing residence and sheds in the northwestern corner of the property. Some minor planting of native trees has occurred along fencelines, and several larger stands of exotic trees such as Poplars have been planted near dams.

A network of small creeklines has been modified and re-formed into channels with several chains of farm dams, most of which do not contain wetland vegetation and would be of limited habitat value. Two larger dams on the primary creekline contain aquatic and macrophytic vegetation and provide habitat for a range of species.

The subject land for this assessment comprises:

i. the western portion of the subject property, with an area of 6.93 hectares; and

ii. two small areas of road verge at the intersection of Murrays Flat Road with the Hume Highway, with a combined area of 0.22 hectares.

Refer to Figure 1 (Site map).

1.3 Proposed Development

The proposal is to establish a scrap metal shredding facility and metal recycling yard within the subject land. Operations would include receiving, sorting and the containerising of ferrous and nonferrous metals for export, mostly overseas for recycling into new ferrous and non-ferrous products.

The proposal includes an upgrade of the existing intersection of Murrays Flat Road with the Hume Highway.

The proposal has been designed to retain native trees where possible, as shown on the site plans. A discussion of the proposed and likely impacts of the development upon biodiversity is provided in Chapter 4.1.

Refer to Figure 2 (Development layout).

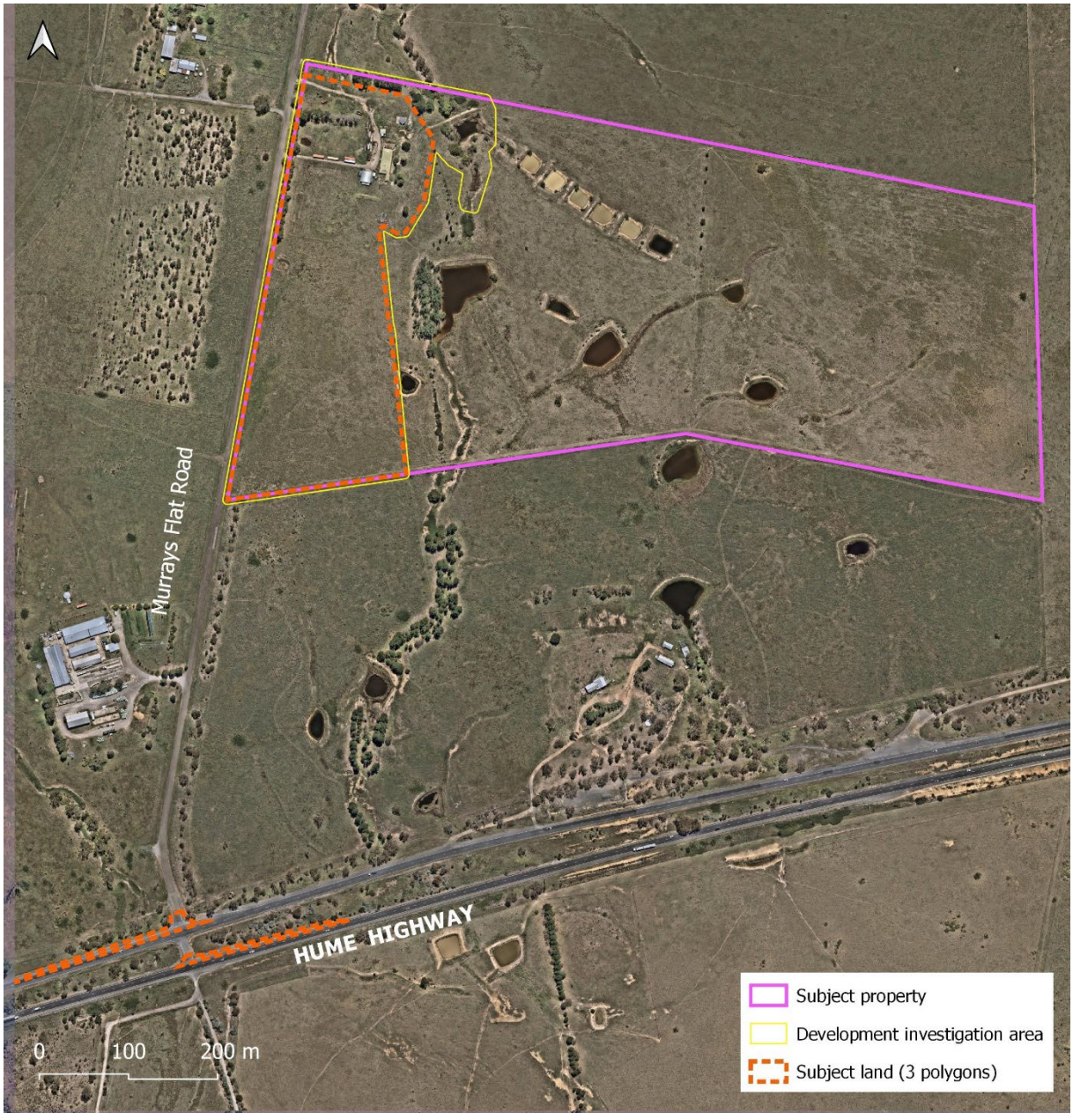

Figure 1 *Site Map, showing the subject land in relation to property cadastre, existing development, and existing landscape features (aerial photo from Nearmap, dated 1st March 2025).*

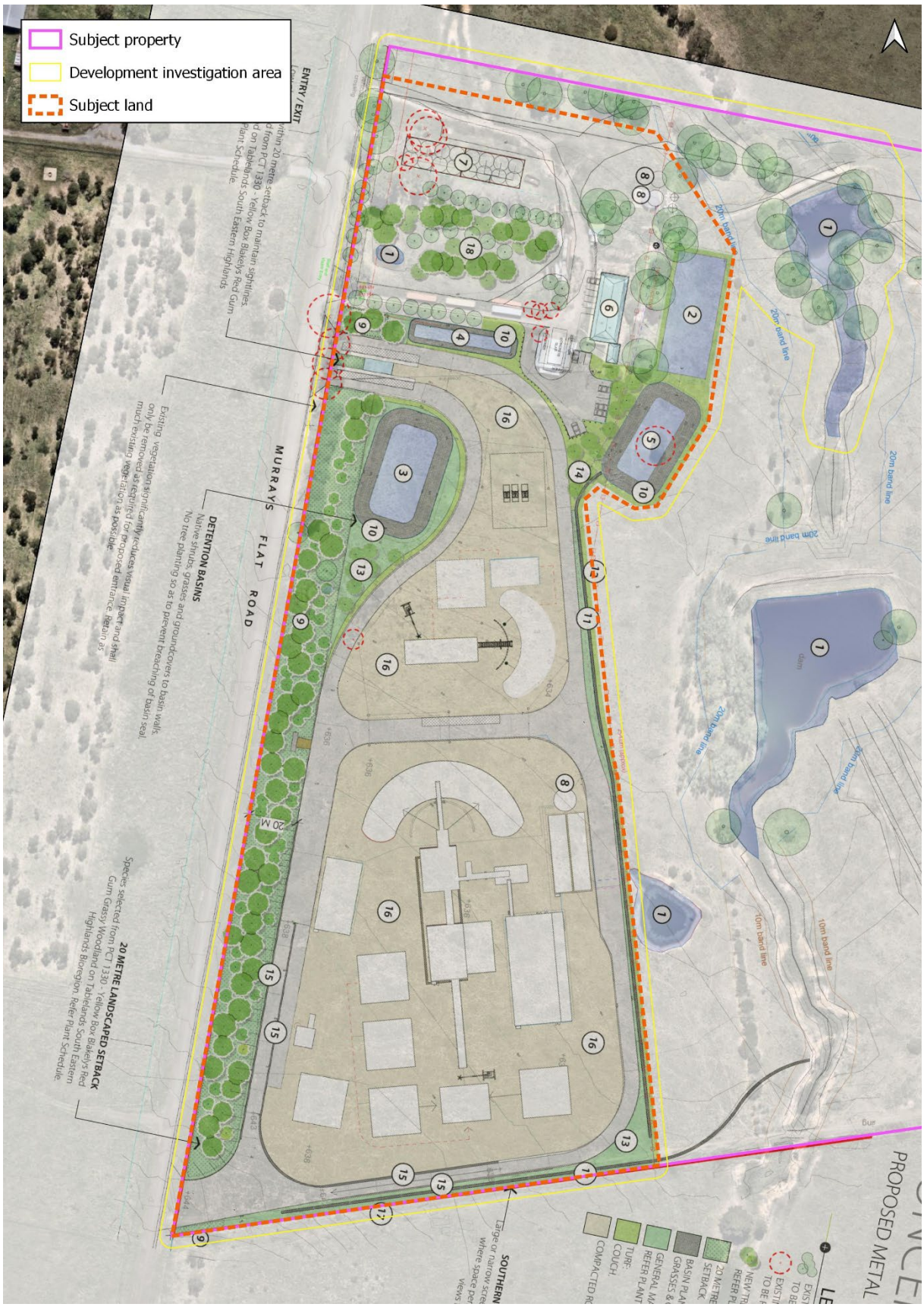

Figure 2 *Development layout (Landscape Concept Plan L102 Rev. F) prepared by Terras landscape architects, July 2026).*

1.4 Objectives of this Report

The objectives of this Flora and Fauna Assessment report are to:

- assess potential impacts of the proposed development upon biodiversity values in accordance with requirements of the *NSW Biodiversity Conservation Act 2016* (BC Act);
- consider whether the project should be referred to the Commonwealth Minister for Environment & Heritage under the *Commonwealth Environment Protection & Biodiversity Conservation Act 1999* (EPBC Act);
- assess impacts on Koala habitat in accordance with *State Environmental Planning Policy (Biodiversity & Conservation) 2021* (B&C SEPP);
- consider whether the proposal meets objectives for the land zone under *Goulburn Mulwaree Local Environmental Plan 2009* (GMLEP).

1.5 Terms and Definitions

Region	The Bungonia subregion of the South Eastern Highlands BioRegion (SEH07), in the Interim BioRegionalisation of Australia v7 (IBRA).
Assessment Area	Land within 1500m of the *subject land*, as shown on Figure 4 (Location map).
Subject Property	Lot 3 DP 251779, 88 Murrays Flat Road, Towrang NSW 2580, as shown on Figure 4.
Subject Land	Land to be impacted directly or indirectly by the development, as shown on Figure 1.
Development Footprint	Land that would be directly impacted by the proposed development, including structures, service installations, the bushfire asset protection zone, and areas designated for temporary material stockpiles during construction.
Plant Community Type	A vegetation unit identified using the NSW Plant Community Type (PCT) classification system.
Vegetation Zone	A subset of a *Plant Community Type* based on broad condition state.
Threatened	Species and ecological communities listed as either '*vulnerable*', '*endangered*' or '*critically endangered*' under the NSW BC Act and/or the Commonwealth EPBC Act.

2 RESEARCH & FIELD SURVEYS

2.1 Information Sources

Relevant legislation and policies include:

- *Commonwealth Environment Protection & Biodiversity Conservation Act 1999* (EPBC Act)
- *NSW Biodiversity Conservation Act 2016* (BC Act)
- *NSW Biodiversity Conservation Regulation 2017* (BC Reg)
- *NSW Biodiversity Assessment Method Order 2020* (BAM)
- *NSW State Environmental Planning Policy (Biodiversity and Conservation) 2021* (B&C SEPP)
- *Goulburn Mulwaree Local Environmental Plan 2009* (GMLEP)

Relevant guidelines include:

- *Surveying threatened plants and their habitats. NSW survey guide for the Biodiversity Assessment Method (2020).* Department of Planning, Industry & Environment (2020).
- *Flora species with specific survey requirements.* NSW Office of Environment & Heritage.
- *NSW Survey Guide for Threatened Frogs.* Department of Planning, Industry & Environment (2020).
- *Guide for mapping threatened species for inclusion in the NSW regulatory framework.* Department of Planning, Industry & Environment (2020).
- *NSW survey guide – 'Species credit' threatened bats and their habitats (2018).*
- *Threatened Species Test of Significance Guidelines.* NSW Office of Environment & Heritage (2018).

Data sources and reports accessed include:

- NSW Bionet (www.bionet.nsw.gov.au): Vegetation Classification tool, Threatened Biodiversity Data Collection (TBDC), and Atlas Sightings.
- Threatened biodiversity profiles. NSW Office of Environment & Heritage.
- EPBC Act Protected Matters Search Tool (PMST): including predicted threatened species and ecological communities, predicted migratory species, Nationally Important Wetlands identified in the *Directory of Important Wetlands in Australia* (DIWA), Third Edition, Environment Australia (2001).
- National Flying-fox monitoring viewer. Australian Department of Climate Change, Energy, the Environmental and Water (https://www.environment.gov.au/webgis-framework/apps/ffc-wide/ffc-wide.jsf).
- SEED | Sharing and Enabling Environmental Data (www.seed.nsw.gov.au): NSW Interim Biogeographic Regions of Australia (IBRA) regions and subregions, NSW Mitchell Landscapes (version 3.1), State Vegetation Type Map – SVTM_NSW_Extant_PCT.

* Aerial photography: Google Maps ©2026 and Nearmap (up to 31st August 2025).

2.2 Stratification

Using the results of desktop investigation, aerial photography and site survey, the subject land was stratified into three vegetation zones:

* Remnant or regrowth native tree canopy.
* Grassland containing 15% or greater cover of native species - classed as native grassland.
* Grassland containing less than 15% cover of native species – classed as exotic pasture.

Refer to Figure 3 (Native vegetation zones & field survey locations).

2.3 Botanical Surveys

A general botanical survey was conducted within the subject property by Mr Daniel Clarke on the 30th September 2021. A subsequent survey of land around the intersection of Murrays Flat Road with the Hume Highway was carried out by Mr Daniel Clarke on the 26th February 2026.

The surveys were conducted on foot with reference to the *NSW survey guide: Surveying threatened plants and their habitats* (DPIE 2020), and to *DEC Threatened Biodiversity Survey and Assessment Guidelines* (in draft 2004).

Botanical surveys included:

* A random meander over 4 hours throughout the subject property. The route deliberately targeted the limited scattered trees and shrubs present. Due to technical issues, a GPS path was not recorded. An indicative path can be identified by linking spot surveys in numerical order.
* A series of 41 botanical spot surveys (each to approximately 15m radius) located along the route (numbered 1 to 41), to identify dominant native plants in each strata for identification of plant community type/s, to estimate percent cover of native plants in the groundcover, identify dominant weeds, and record general comments regarding vegetation condition. Spot surveys were placed at locations representative of the site, or where the vegetation contained features of interest or appeared changed from the type and condition of the previous point.
* A further series of 6 botanical spot surveys (each to approximately 15-20m radius) were conducted around the existing intersection of Murrays Flat Road with the Hume Highway (labelled A to F).

Targeted threatened plant surveys using the parallel traverse method were not conducted. The groundcover within the subject land consists almost entirely of exotic pasture species and weeds. The land has historically been intensively managed for pasture production and does not contain habitat likely to support threatened plant species.

The timing of surveys is discussed in Ch 2.6 Survey Limitations.

Refer to Figure 3 (Native vegetation zones & field survey locations).

Survey data is provided in Appendix 1.

2.4 Fauna Surveys

Fauna surveys and habitat assessment were conducted across the subject property by Ms Rebecca Hogan on the 6th October 2021, and by Lesryk Environmental on the 19th October 2021. A further habitat inspection was conducted at the intersection of Murrays Flat Road and the Hume Highway by Ms Rebecca Hogan on 26th February 2026.

The primary purpose of the surveys was to identify habitats and features of potential relevance for threatened fauna species associated with the plant community types present, and to conduct searches for indirect evidence of native fauna, such as scats, chew marks, scratches, diggings, dens, nests *etc*, which can persist on a site for some time.

Identification of tree-hollows included investigation to determine if hollows were in use at the time of surveys, as evidenced by birds entering or guarding the hollow, recent chew marks around the entrance, fresh scats on the ground beneath the hollow, fresh scratchings on tree trunks *etc*.

Fauna surveys included:

* Dedicated diurnal bird surveys – 3 surveys, each for a duration of 20 minutes.
* Dedicated herpetofauna searches – 2 searches, each for a period of 20 minutes.
* Slow driven tours of the entire property, seeking features of interest such as surface rock, dams, and areas of native vegetation. Opportunistic searches and call listening were carried out at relevant locations.

Comprehensive targeted surveys were not conducted for all potentially relevant threatened species due to the very small extent and isolation of native vegetation present. Candidate threatened species identified in Ch3.3 for which likely habitat occurs within the site and which have not been adequately surveyed are assumed to be present.

It appears that a previous fauna survey including microchiropteran bat call detection was conducted within the property on 29th January 2008, based on Bionet records. No details are available other than the records submitted to the Bionet database.

The timing of surveys is discussed in Ch 2.6 Survey Limitations.

Refer to Figure 3 (Native vegetation zones & field survey locations).

Fauna species and habitats recorded within the subject land are provided in Appendix 2.

2.5 Summary of field surveys and weather conditions

Table 1 *Summary of field survey methods, dates, times and weather conditions.*

Survey Method	Date	Time	Temp. (min. & max.)	Wind (light, mod…)	Rainfall (mm)	Other conditions relevant to the species
Botanical surveys within the property	30/09/2021	Morning	Mild 16°C	Not recorded	1.5mm	Partly cloudy, not raining at the time of the survey. Moderate falls on preceding day (11mm)
Site inspection & fauna habitat assessment 1 x 20min bird survey	06/10/2021	10am to noon	Mild 14-21°C	Moderate westerly	0mm	Sunny, light rain on preceding day
Site inspection & fauna habitat assessment Hollow-bearing tree survey 2 x 20min bird surveys 2 x 20min herp surveys	19/10/2021	All day	Warm ~23°C	Light	0mm	Sunny and clear
Surveys around the Hume Highway intersection	26/02/2026	Afternoon	Mild 19°C	Moderate southerly	0.4mm	Overcast, not raining at the time of the survey. Heavy rainfall on preceding day (28mm)

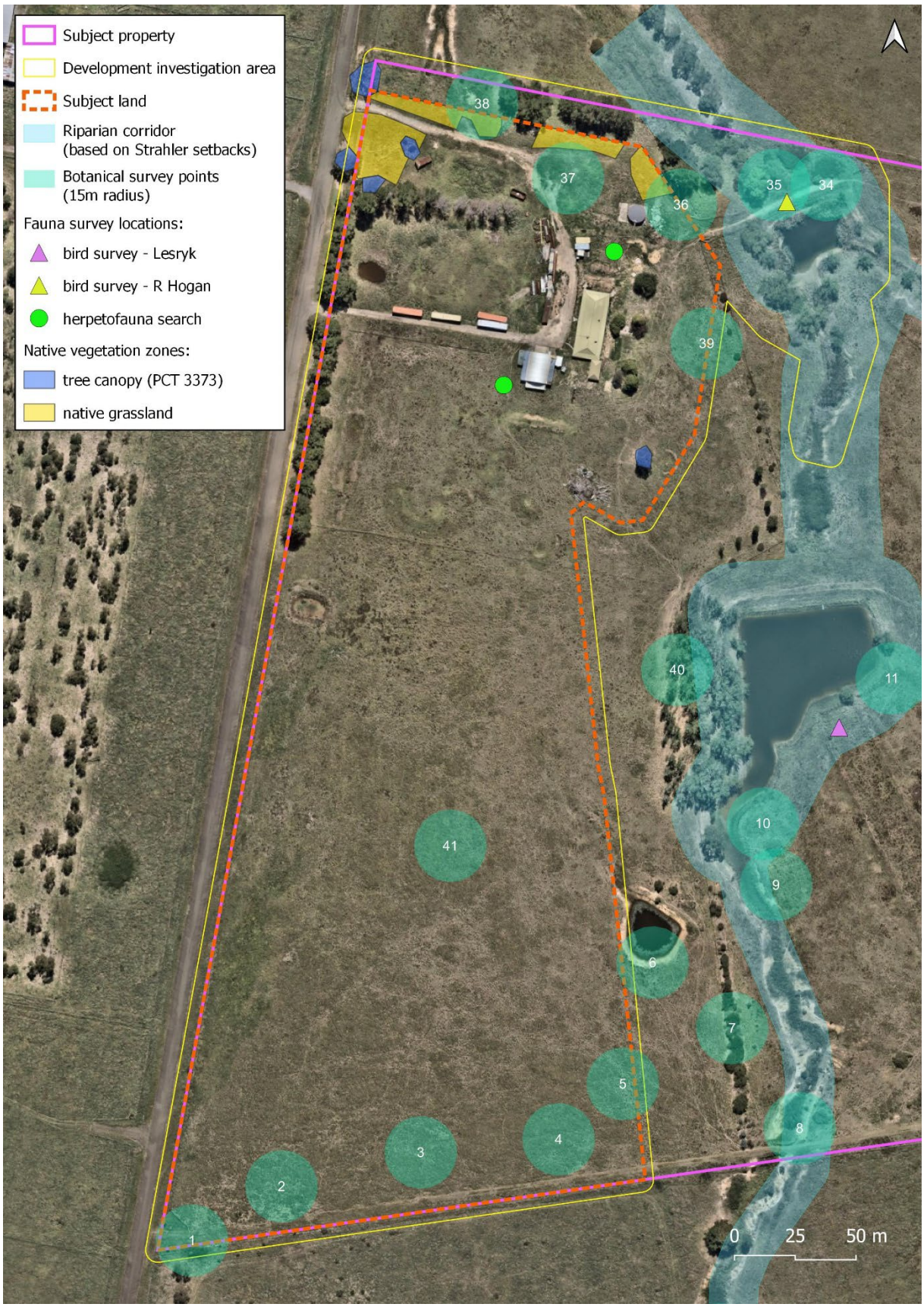

Figure 3A *Native vegetation zones & field survey locations within the subject property (aerial photo from Nearmap, dated 1st March 2025).*

Figure 3B *Native vegetation zones & field survey locations around the proposed highway intersection upgrade (aerial photo from Nearmap, dated 1st March 2025).*

2.6 Survey Limitations

Botanical

The botanical survey was conducted over a limited period (two separate days). Whilst the survey was thorough and accurately describes the vegetation type, it is noted that some threatened species are seasonal in appearance, some species are cryptic and require flowers for easier detectability, and some species require flowers or fruit for positive identification.

Upon review of the relevant threatened species:

1) With respect to the parcel of subject land within the subject property, one species was surveyed outside of the survey period set out in the Bionet Threatened Biodiversity Data Collection (TBDC):

    * *Diuris aequalis* is a terrestrial orchid with a survey period set from October to November based on the typical flowering period for the species. Surveys within the subject land were conducted on 30th September 2021.

      Regardless of the survey timing, the land has historically been intensively managed for agricultural production and does not show evidence of a remnant native seedbank. The site is too degraded for this sensitive species to have persisted and it is extremely unlikely to have recolonised the land.

2) With respect to the parcels of subject land located at the highway intersection, three species were surveyed outside of the survey period set out in the Bionet Threatened Biodiversity Data Collection (TBDC):

    * *Dillwynia glaucula*: This is an erect shrub to 2.5m tall, with a survey period set from September to December based on the typical flowering period for the species for easier detection and identification. Surveys at the highway intersection were conducted on 26th February 2026. Whilst the species would not have been in flower at this time, the subject land at this location is very small (0.08ha), consisting of bare ground and short grass. No native shrubs were present. The species would have been detected during the targeted survey regardless of its flowering status, if present.

    * *Diuris aequalis*. Comments provided for this species in (1) above are also relevant to the subject land at the highway intersection. Land around the highway intersection has been substantially modified and is subject to ongoing use and management not compatible with this species.

    * *Swainsona sericea*: This is a herb with a survey period set from September to November based on the typical flowering period for the species. Surveys at the highway intersection were conducted on 26th February 2026. Whilst the species would not have been in flower at this time, the subject land at this location is very small (0.08ha), consisting of bare ground and short grass. The species should have been detected during the targeted survey regardless of its flowering status, if present. Additionally, Land around the highway intersection has been substantially modified and is subject to ongoing use and management not compatible with this species.

Grassland areas were surveyed during a warm spring with good rainfall when species were actively growing. Groundlayer composition varies seasonally so a conservative approach was taken, assuming that native cover would be likely to increase through into summer.

The parallel traverse method for threatened species was not used. The site has been cleared of native vegetation for an historic period and actively managed for pasture production. Areas containing a dense sward of exotic grasses (90-100% cover) do not provide habitat for the relevant threatened species. Patches with a higher percent cover of native plants, and more open areas of disturbed ground, were limited in extent. Opportunistic area searches were conducted in these patches for threatened species.

There is a high level of confidence in the accuracy and completeness of flora survey data used for the assessment.

Fauna

Targeted surveys were not conducted for all relevant threatened fauna species.

Candidate threatened species identified in Ch3.3 for which likely habitat occurs within the site are assumed to be present, in accordance with a precautionary approach (refer to Chapter 2.7).

2.7 Precautionary Approach

Where the subject land contains likely habitat for threatened species known to occur in the PCT and in the region, and where survey methods and effort employed have not been sufficient to demonstrate absence, it has been assumed on a precautionary basis that such species do utilise the land.

3 STAGE 1: BIODIVERSITY ASSESSMENT

3.1 Landscape Context

The subject land sits within a broad belt of historically cleared agricultural land east of the city of Goulburn.

The landscape context is illustrated on Figure 1 (Site map) and Figure 4 (Location map), with details set out in Table 2.

Table 2 *Identified landscapes and landscape features within the subject land and in the Assessment Area (land within 1500m of the subject land).*

Interim Biogeographic Regionalisation for Australia (IBRA), v7	Subject Land:
	- *South Eastern Highlands* bioregion (SEH)
	  • *Bungonia* sub-region (SEH07)
	Assessment Area:
	- *South Eastern Highlands* bioregion (SEH)
	  • *Bungonia* sub-region (SEH07)

Mitchell Landscape, v3.1	Subject Land: - *Gundary Plains* (Ggp). Landscape 72% cleared. - *Towrang Ranges* (Twr). Landscape 59% cleared. Assessment Area: - *Gundary Plains* (Ggp). Landscape 72% cleared. - *Towrang Ranges* (Twr). Landscape 59% cleared. - *Breadalbane Swamps and Lagoons* (Brl). 91% cleared.
Native vegetation cover & patch size/s	Subject Land: - Native vegetation within the subject land consists of isolated trees within a combined canopy area of 0.06ha, and small areas of native grassland with a combined area of 0.16ha. The patch size class is <5ha. Assessment Area: - 14% native vegetation cover (cover class: 11-30%). - Landuses are predominantly rural agricultural.
Hydrology	Subject Land: - Located on the more elevated outer edge of Murrays Flat, a broad river-flat adjacent to the Wollondilly River.

	- The subject land contains two small dams most of which do not contain wetland vegetation and would be of limited habitat value. - The broader property contains a network of small creeklines that have been modified and re-formed into channels with several chains of farm dams, most of which do not contain wetland vegetation and would be of limited habitat value. Assessment Area: - Land drains to the north and east to the Wollondilly River. - There are many farms dams ranging from very small pools to large water storage facilities. Most do not support aquatic vegetation and would be of low habitat value. - There are no significant waterbodies or Nationally Important Wetlands (DIWA) within the assessment area.
Habitat connectivity	Habitats present area isolated from areas of intact vegetation and habitat by extensive tracts of cleared and managed agricultural land. The site would not be part of a wildlife corridor.
Areas of geological significance (such as caves, cliffs, rock, karst *etc*)	There are no areas of geological significance within the subject land or assessment area. Some limited areas of minor surface rock occur within the property. The nearest escarpment area with cliffs and caves is associated with the significant limestone karst area in Bungonia National Park. approximately 20km to the east of the subject land.
Areas of Outstanding Biodiversity Value (AOBV)	There are no declared AOBVs within the subject land or in the assessment area.
Secretary's Environmental Assessment Requirements (SEARs) for a major project.	Not relevant.

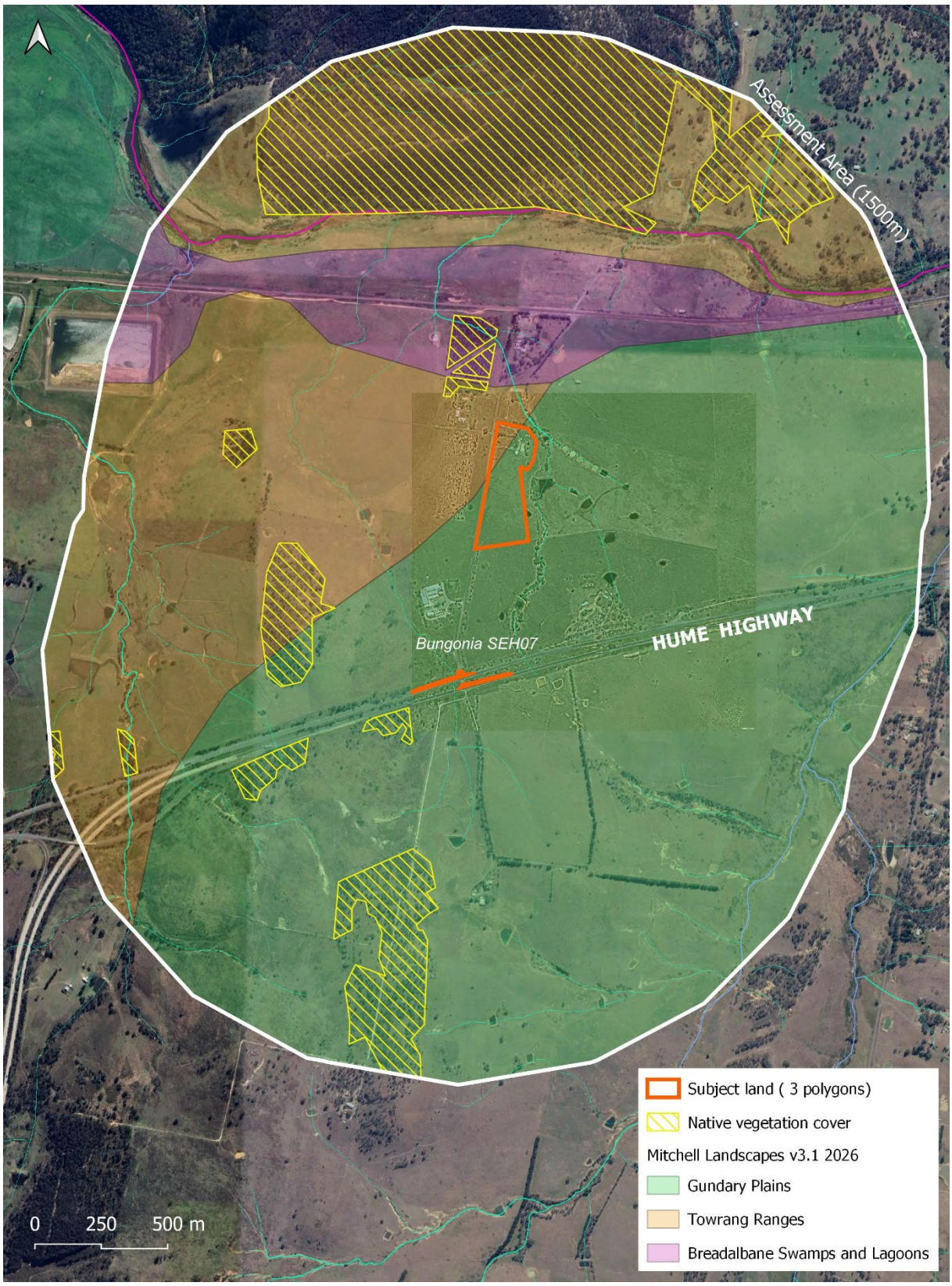

Figure 4 *Location map, showing landscape features within a 1500m buffer around the subject land - referred to as the 'Assessment Area' (aerial photo from Google satellite ©2026). The entire Assessment Area is within the Goulburn Mulwaree LGA.*

3.2 Native Vegetation within the Subject Land

3.2.1 Extent

The subject land has historically been cleared of virtually all native vegetation and managed for agricultural production.

Native vegetation currently present consists of isolated trees within a combined canopy area of 0.06ha, and small areas of native grassland (where the native cover is 15% or greater) with a combined area of 0.16ha. Areas of grassland where the native cover is less than 15% are classed as not-native vegetation[1], and are referred to in this assessment as 'exotic pasture'.

It is noted that some of the isolated paddock trees recorded on the property during the botanical surveys conducted in 2021 have been lost since then and are no longer present.

On the basis of the land management history, the species present, and very low native species diversity, native groundlayer species are believed to have re-colonised the land rather than being remnants of the original vegetation community. The land does not show evidence of sufficient seedbank to naturally regenerate to the original plant community type.

Refer to Figure 3 (Native vegetation zones & field survey locations).

Vegetation	Native vegetation (0.22 ha)		Not native (6.78 ha)
PCT	PCT 3373 (0.06ha)	n/a	n/a
Vegetation Zone	Zone 1 Tree canopy (0.06 ha)	Zone 2 Native grassland (0.16 ha)	Zone 3 Exotic pasture (6.78 ha)

3.2.2 Plant Community Types (PCTs)

Native trees present have been identified as components of:

* Vegetation Class: Southern Tableland Grassy Woodlands

  PCT 3373: *Goulburn Tableland Box-Gum Grassy Forest*

[1] Following the DCCEEW (2024) *Guidance for proponents and local government – Reviewing area clearing threshold results from the BMAT Tool*.

Vegetation Description

Occasional native trees recorded within the subject property and subject land in 2021 include Cabbage Gum *Eucalyptus amplifolia* and Apple Box *Eucalyptus bridgesiana*.

Additional species recorded at or adjacent to the subject land at the highway intersection in 2026 include Yellow Box *Eucalyptus melliodora* and Blakely's Red Gum *Eucalyptus blakelyi*. A small sapling identified as possibly either Paddys River Box *Eucalyptus macarthurii* or Black Gum *Eucalyptus aggregata* (both listed as threatened species) was observed on the Highway medium strip to the east of spot survey point C (approximately 20m east of the identified works area) – refer to Figure 5B.

No native shrubs were recorded. The woody weed, African Boxthorn *Lycium ferocissimum* is prolific across the property.

The groundlayer is generally characterised as managed exotic pasture, with dominant species including the exotic Cocksfoot Grass *Dactylis glomerata*, Oats Grass *Avena barbata*, Barley Grass *Hordeum leporinum*, Wimmera Ryegrass *Lolium rigidum*, Subterranean Clover *Trifolium subterranean*, Common Plantain *Plantago lanceolata*, Meadow Fescue *Festuca pratensis*, Soft Brome *Bromus molliformis*, and Crowsfoot Grass *Eleusina indica*.

Native groundlayer species, where present, include *Austrostipa bigeniculata*, *Sporobolus creber*, *Chloris truncata*, Einadia polygonoides, and *Panicum effusum*.

Groundwater Dependent Ecosystem

All woodland communities rely on groundwater to some extent, whether as primary source of water, or on occasions to sustain trees through drier periods.

Tableland grassy woodlands such as PCT 3373 are not solely or primarily dependent on groundwater, with the grassy understorey and shrubs which are a characteristic and defining component of the community being relatively shallow-rooted and reliant on rainfall.

Rationale for PCT identification

The PCT was originally identified (2022) in the first instance using the *Bionet Vegetation Classification* tool, on the basis of IBRA subregion (Bungonia SEH07), vegetation class (Southern Tableland Grassy Woodlands), and dominant indigenous tree and native groundcover species present.

The result was four PCTs that met the primary criteria - the IBRA subregion, vegetation class and at least one of the two dominant tree species present within the subject property (*E amplifolia* and *E bridgesiana*). The summary profiles of each of the four PCTs were viewed.

- PCT 651: Apple Box – Chalker's Wattle woodland on limestone slopes near Wombeyan Caves, Sydney Basin Bioregion. Occurs on dry clay soils on limestone at Wombeyan Caves. The landscape position does not fit.

- PCT 654: Apple Box – Yellow Box dry grassy woodland of the South Eastern Highlands Bioregion, occurs on gently undulating slopes, limited information available.
- PCT 1330: Yellow Box – Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion. Occurs on loamy soils on undulating terrain between 500-900m on the tablelands.
- PCT 1334: Yellow Box grassy woodland of the northern Monaro and Upper Shoalhaven area, South Eastern Highlands Bioregion. Occurs on valley flats and midslopes, and occasionally crests, in the Murrumbidgee River valley south of Royalla and the upper Shoalhaven River valley south of Bungonia, also found in the east of Queanbeyan and south of Bungendore. The landscape position does not fit.

Both PCT 654 and PCT 1330 fit the primary criteria and broadly match the floristic description and landscape position. The high level of degradation of the site makes it difficult to distinguish between closely aligned PCTs.

PCT 1330 is derived from the *Tableland Grassy Box Gum Woodland* (GWp24) community described by Tozer *et al* in *Native vegetation of southeast NSW* (SouthCoast_SCIVI_v14_E_2230). GWp24 is mapped as occurring near to the site. Comparison of the site floristics with the positive diagnostic species listed for GWp24 finds that both *E amplifolia* and *E bridgesiana* are listed as positive diagnostic species, and most of the native groundcover species present are also positive diagnostic for GWp24.

On the basis of the above, PCT 1330 was determined to be the best match for the site.

PCT 1330 has subsequently been split into several new PCTs, with the highest proportion of legacy member plots split to PCT 3373 *Goulburn Tableland Box-Gum Grassy Forest*, and a smaller proportion of legacy member plots resolved to other new PCTs including PCT 3376 *Southern Tableland Grassy Box Woodland*.

Current pre-1750 native vegetation predicted for the subject land (mapped on the SVTM_NSW_pre-1750_PCT) is PCT 3373.

The highly degraded condition of the vegetation present increases the difficulty of applying statistical or data tests to determine which of the new PCTs is the best fit. Due to most of the legacy PCT 1330 plots being assigned to PCT 3373, and the predicted original vegetation for the subject land being mapped as PCT 3373, and that the floristic and landscape descriptors for this PCT appear to be a good match, PCT 3373 has been selected as the best-fit PCT for the vegetation within the subject land.

3.2.3 PCT/Ecological Community Status

PCT 3373 is estimated as 92.1% cleared in the landscape (Bionet profile).

PCT 3373 is associated with two threatened ecological communities (Bionet profile):

- NSW BC Act (CEEC): *White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions*.
- Commonwealth EPBC Act (CEEC): *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*.

Native trees present within the subject land are conservatively deemed to be part of the NSW listed CEEC.

Conversely, the Commonwealth listed CEEC only includes remnants that meet the condition criteria set out in the listing advice:

> *Areas in which an overstorey exists without a substantially native understorey are degraded and are no longer a viable part of the ecological community. Although some native species may remain, in most of these areas the native understorey is effectively irretrievable.*
>
> *In order for an area to be included in the listed ecological community, a patch must have a predominantly native understorey.*
>
> *An understorey patch, in the absence of overstorey trees, must have a high level of native floral species diversity, but only needs to be 0.1 hectares or greater in size. A patch in which the perennial vegetation of the ground layer is dominated by native species, and which contains at least 12 native, non-grass understorey species (such as forbs, shrubs, ferns, grasses and sedges) is considered to have a sufficiently high level of native diversity to be the listed ecological community. At least one of the understorey species should be an important species (e.g. grazing-sensitive, regionally significant or uncommon species; such as Kangaroo Grass or orchids) in order to indicate a reasonable condition.*
>
> *Areas with both an overstorey and understorey present are also considered of sufficiently good condition to be part of the listed ecological community if the understorey meets any of the conditions above, or if they have a predominantly native understorey, are two hectares or above in size, and have either natural regeneration of the overstorey species or 20 or more mature trees per hectare.*

No areas of native vegetation within the subject land are of sufficient quality to be included in the EPBC Act listing.

3.2.4 Vegetation Integrity and Patch Size

PCT 3373 occurs within the subject land as a single Vegetation Zone:

i. Native tree canopy. Containing remnant or regrowth native eucalypts, and a low percent cover of native grasses in the groundlayer. There is no shrub layer.

All vegetation patches within the subject land are small and isolated. Patch size class is <5ha.

Photo 1 >

Photo taken looking west from botanical survey point 38, showing mature native trees on the Murrays Flat Road verge, planted pines on the southern side of the existing property driveway, and surrounding areas of grassland classed as native grassland.

Photo 2 >

Exotic pasture across the southern part of the subject land. Photo taken looking north from botanical survey point 41.

Photo 3 >

Photo looking northeast from botanical survey point D across the Highway intersection.

3.3 Threatened Species

3.3.1 Identifying relevant threatened species

A list of threatened flora and fauna species of potential relevance to the assessment was compiled using the online BAM-Calculator to filter on the basis of:

* regional and landscape location (as documented in Table 2 above);
* association with PCT 3373;
* site context constraints for the subject land (as documented in Table 2 above);
* geographical limitations and habitat constraints specified in the BAM-Calculator.

Additionally, consideration was given to threatened fauna species known to have occurred within the assessment area (Bionet sightings, 26/07/2026), or predicted to occur within the subject land (Protected Matters Search Tool, 24/03/2026), to determine whether any additional species should be added to the list. Three threatened microchiropteran bat species (Large Bent-wing Bat, Eastern False Pipistrelle, Yellow-bellied Sheath-tail Bat) were added to the list for assessment based on previous records within the subject property.

Species identified as being relevant for assessment are listed in Table 3 (below), with consideration applied as to whether each species was likely to occur on the subject land or be affected by the development (based on specific habitat requirements, known records, and field survey results), and correspondingly, whether an assessment of the significance of impacts was required using the Test of Significance set out under s7.3 of the BC Act.

The Test of Significance is provided in Chapter 4.2.3 of this report.

Table 3 *Relevant species for assessment, with determination as to whether application of the Test of Significance set out under s7.3 of the BC Act is required.*

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
Flora					
Michelago Parrot-pea *Dillwynia glaucula*	E/-	Sp	*Shrub. Occurs on exposed patches of clay or on rocky outcrops in eucalypt woodland often dominated by Scribbly Gum (Eucalyptus rossii), Snow Gum (E. pauciflora), Broad-leafed Peppermint (E.dives) and Red Stringybark (E. macrorhyncha).* *BAM survey period: Sep to Dec* Not recorded during botanical surveys conducted in September 2021 or February 2026.	Absent – field survey.	No
Buttercup Doubletail *Diuris aequalis*	E/E	Sp	*Terrestrial orchid. Recorded in forest, low open woodland with grassy understorey and secondary grassland on the higher parts of the Southern and Central Tablelands (especially on the Great Dividing Range).* *BAM survey period*: *Oct to Nov* Not recorded during botanical surveys conducted in September 2021 or February 2026. Land within the subject property has historically been intensively managed for agricultural production and does not show evidence of a remnant native seedbank. The site is too degraded for this sensitive species to have persisted and it is extremely unlikely to have recolonised the land. Land around the highway intersection has similarly been substantially modified and is subject to ongoing use and management not compatible with this species.	Absent – degraded habitat.	No
Paddys River Box *Eucalyptus macarthurii*	E/E	Sp	*Trees.* *BAM survey period*: all year Species added to the assessment based on tentative identification of a sapling located approximately 20m to the east of the highway intersection as being one of these two threatened species (refer to Figure 5B). The sapling is not within the development footprint and is located at sufficient distance to not be impacted by the proposed works.	No impact.	No
Black Gum *Eucalyptus aggregata*	V/V	Sp			

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
Hoary Sunray *Leucochrysum albicans* ssp *tricolor*	E/E	Sp	*Herb. Occurs in a wide variety of grassland, woodland and forest habitats, generally on relatively heavy soils. Can occur in modified habitats such as semi-urban areas and roadsides. Highly dependent on the presence of bare ground to germinate.* *BAM survey period*: *Sep to Apr* Not recorded during botanical surveys conducted in September 2021 or February 2026.	Absent – field survey.	No
Silky Swainson-pea *Swainsona sericea*	V/-	Sp	*Herb. Found in Box-Gum Woodland in the Southern Tablelands and South West Slopes.* *BAM survey period: Sep to Nov* *Survey months differ based on location. Survey Oct - Nov on Monaro. Survey Sep - Oct in the Riverina* Not recorded during botanical surveys conducted in September 2021 or February 2026. The land has historically been intensively managed for agricultural production and does not show evidence of a remnant native seedbank. The site is too degraded for this sensitive species to have persisted and it is extremely unlikely to have recolonised the land. Land around the highway intersection has similarly been substantially modified and is subject to ongoing use and management not compatible with this species.	Absent – field survey & degraded habitat.	No
Fauna					
Regent Honeyeater *Anthochaera phrygia*	CE/CE	Dual	*Inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Inhabits woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes.* *BAM survey period: n/a* *Breeding habitat constraint: as per Important Habitat Map.* Not recorded during bird surveys conducted for this assessment (October 2021). No previous records within the assessment area. The subject land is not included on the Important Habitat Map for the species. The subject land contains only scattered trees rather than woodland is some distance from intact areas of woodland providing potential habitat for this species.	Absent – unlikely habitat & site does not meet breeding habitat constraint.	No

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
Pink-tailed Legless Lizard *Aprasia parapulchella*	V/V	Sp	*Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by Kangaroo Grass (Themeda australis).* *BAM survey period: n/a* *Habitat constraint: Subject land intersects with 'Aprasia parapulchella distribution for BAM assessments' on SEED and characteristics of the subject land align with figure 2 of the 'Aprasia parapulchella distribution and habitat for BAM assessments – interpretive guide'.* Not recorded during herpetofauna surveys conducted for this assessment (October 2021), although these surveys would not meet current survey guidelines. No previous records in the assessment area. The subject land is not included on the distribution map for the species.	Absent – habitat constraint	No
Dusky Woodswallow *Artamus cyanopterus cyanopterus*	V/-	Eco	*Can be resident or migratory, with greater tendency to migration in south of state. Breeds in Spring. Most breeding activity occurs on the western slopes of the GDR. Nest is an open cup-shape, made of twigs, grass, fibrous rootlets and occasionally casuarina needles. Nest sites vary greatly and may be exposed or concealed by foliage.* *TSSC Final Determination - Dusky Woodswallows have large home ranges but spend most of their time in about a 2ha range and defend an area ~50m around the nest (Higgins and Peter 2002).* *BAM survey period: n/a* Recorded on the subject property in January 2008 (Bionet sightings). Not recorded during bird surveys conducted for this assessment (October 2021). Several previous records within the assessment area. No nests observed.	Present.	Yes
Gang-gang Cockatoo *Callocephalon fimbriatum*	E/E	Dual	*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. Favours old growth forest and woodland attributes for nesting and roosting. Nests are located in hollows that are 10 cm in diameter or larger in eucalypts.* *BAM breeding survey period: Oct to Jan*	Assumed present - foraging only.	Yes

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
			Breeding habitat constraint: Living or dead Eucalypt tree species with hollows at least 2 m above the ground, tree stems with a DBH of >=40cm and with hollow diameter of >=9 cm. Not recorded during bird surveys conducted for this assessment (October 2021). One previous record in the assessment area. No suitable breeding hollows occur within the subject land. A wide-ranging species that could theoretically use the trees present for foraging on occasions.		
South-eastern Glossy Black Cockatoo *Calyptorhynchus lathami*	V/V	Dual	*Inhabits open forest and woodlands of the coast and the GDR where stands of sheoaks occur. A littoralis and A torulosa are important foods. Feeds almost exclusively on the seeds of several species of she-oak (Casuarina and Allocasuarina species).* *BAM breeding survey period: Apr to Aug* *Breeding habitat constraint: Living or dead Eucalypt tree species with hollows at least 8 m above the ground, tree stems with a DBH of >=30cm, hollow diameter >=15 cm, and the hollow bearing stem/branch is angled skywards vertically, or near vertically to approximately 45 degrees from vertical.* *Ecosystem habitat constraint: Presence of Allocasuarina and casuarina species.* Not recorded during bird surveys conducted for this assessment (October 2021). No previous records within the assessment area. No suitable breeding hollows occur within the subject land. No *Allocasuarina* or *Casuarina* trees present within the subject land.	Absent - habitat constraint.	No
Eastern Pygmy-possum *Cercartetus nanus*	V/-	Sp	*Found in a broad range of habitats from rainforest through sclerophyll forest and woodland to heath, but in most areas woodlands and heath appear to be preferred. They may occupy small patches of vegetation in fragmented landscapes and although the species prefers habitat with a rich shrub understorey, they are known to occur in grassy woodlands and the presence of Eucalyptus alone is sufficient to support populations in low densities. Shelters in tree hollows, rotten stumps, holes in the ground, abandoned birds nests, possum dreys or thickets of vegetation. Tree hollows are favoured for breeding, but nests have been found under the bark of eucalypts and in shredded bark in tree forks. Appear to be mainly solitary, each individual using several nests, with males having non-exclusive home-ranges of about 0.68ha and females about 0.35ha.* *BAM survey period: Oct to Mar*	Absent - not suitable habitat.	No

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
			Targeted surveys were not conducted. No previous records in the assessment area. Trees present are too isolated from other trees or shrubs to support individuals of this species, or a viable population.		
Spotted Harrier *Circus assimilis*	V/-	Eco	*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.* *BAM survey period: n/a* Not recorded during bird surveys conducted for this assessment (October 2021). No previous records in the assessment area. No nests recorded. A wide-ranging species that could hunt across the subject land on occasions.	Assumed present.	Yes
Large-eared Pied Bat *Chalinolobus dwyeri*	E/E	Sp	*Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin, frequenting low to mid-elevation dry open forest and woodland close to these features. Maternity roosts have been recorded from Nov to Jan. Breeding habitat is defined as suitable vegetation types within 100m of breeding habitat features. Foraging habitat is defined as land within 2km of rocky areas containing caves, overhangs, escarpments, outcrops, or crevices or within 2km of old mines or tunnels.* *BAM survey period: Nov to Jan* *Habitat constraint: Cliffs; Within two kilometres of rocky areas containing caves, overhangs, escarpments, outcrops, or crevices, or within two kilometres of old mines or tunnels* Targeted surveys were not conducted for this assessment. No caves or rocky features are present within the subject land. The nearest rocky areas likely to provide roosting habitat are associated with the substantial Bungonia karst area located approximately 20km to the east.	Absent – habitat constraint.	No
Brown Treecreeper *Climacteris picumnus victoriae*	V/V	Eco	*Found in eucalypt woodlands (including Box-Gum Woodland) and dry open forest of the inland slopes and plains inland of the Great Dividing Range; mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and River Red Gum (Eucalyptus camaldulensis) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses; usually not found in woodlands with a dense shrub layer; fallen timber is an important habitat component for foraging; also*	Absent – field survey & not	No

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
			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. Hollows in standing dead or live trees and tree stumps are essential for nesting. Breeds in pairs or co-operatively in territories which range in size from 1.1 to 10.7 ha (mean = 4.4 ha). *BAM survey period: n/a* *Paddock trees important only if within 100 m of moderate to good condition vegetation of suitable type.* Not recorded during bird surveys conducted for this assessment (October 2021). No previous records in the assessment area. No likely nesting hollows observed. Trees present are too isolated to provide suitable habitat for this species.	suitable habitat.	
Varied Sittella *Daphoenositta chrysoptera*	V/-	Eco	*Sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands. Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and* Acacia *woodland. 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.* *TSSC Final Determination - Sensitive to habitat isolation, reduced patch size and habitat simplification. Breeding season is Aug to Jan.* *BAM survey period: n/a* Not recorded during bird surveys conducted for this assessment (October 2021). No previous records in the assessment area. No nests observed. Trees present are too isolated to provide suitable habitat for this species.	Absent – field survey & not suitable habitat.	No
Spotted-tailed Quoll *Dasyurus maculatus*	V/E	Eco	*Recorded across a range of habitat types. Quolls use hollow-bearing trees, fallen logs, other animal burrows, small caves and rock outcrops as den sites. Use communal 'latrine sites', often on flat rocks among boulder fields, rocky cliff-faces or along rocky stream beds or banks. Such sites may be visited by multiple individuals and can be recognised by the accumulation of the sometimes characteristic 'twisty-shaped' faeces deposited by animals. A generalist predator with a preference for medium-sized (500g-5kg) mammals. Females occupy home ranges of 200-500 ha, while males occupy very large home ranges from 500 to > 4000 ha. Known to traverse home ranges along dense vegetated creeklines.* *BAM survey period: n/a*	Absent - not likely to occur.	No

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
			Targeted surveys were not conducted for this assessment. No dens, latrines, scats, or other indirect evidence were recorded. No previous records in the assessment area. The subject land could theoretically be within a home range of this species, but is not likely to be used either for denning, hunting, or movement.		
Striped Legless Lizard *Delma impar*	V/V	Sp	*Found mainly in Natural Temperate Grassland but has also been captured in grasslands that have a high exotic component. Also found in secondary grassland near Natural Temperate Grassland and occasionally in open Box-Gum Woodland. Habitat is where grassland is dominated by perennial, tussock-forming grasses such as Kangaroo Grass Themeda australis, spear-grasses Austrostipa spp. and poa tussocks Poa spp., and occasionally wallaby grasses Austrodanthonia spp.* *BAM survey period: Sep to Dec* Not recorded during herpetofauna surveys conducted for this assessment (October 2021), although these surveys would not meet current survey guidelines. No previous records in the assessment area. This species is known to occur in grasslands with a high or significant exotic component. The majority of grassland in the subject land, however, is *almost entirely* comprised of exotic species and is likely to be too modified and disturbed to support a population of this lizard. The land has historically been intensively managed for agricultural production such that ground-dwelling species like the lizard are not likely to have persisted, even if once present. It is not likely to have recolonised the land given the low value of the habitat and ongoing disturbance regime. Land around the highway intersection has similarly been substantially modified and is subject to ongoing use and management not compatible with this species.	Absent – not likely to occur.	No
Black Falcon *Falco subniger*	V/-	Eco	*Widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. Some reports of 'Black Falcons' on the tablelands and coast of New South Wales are likely to be referable to the Brown Falcon..* *BAM survey period: n/a* Not recorded during bird surveys conducted for this assessment (October 2021). No previous records in the assessment area. A wide-ranging species that is generally regarded as vagrant to the region.	Absent – theoretical vagrant.	No
Eastern False Pipistrelle	V/-	Eco	*Prefers moist habitats, with trees taller than 20 m. Generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings.*	Present.	Yes

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
Falsistrellus tasmaniensis			*BAM survey period: n/a* Recorded on the subject property in January 2008 (Bionet sightings). Targeted surveys not conducted for this current assessment. The subject land does not contain likely roosting features and does not contain a tall moist forest typically preferred for hunting. The species is wide-ranging and may hunt across the land opportunistically while moving through the landscape.		
Latham's Snipe *Gallinago hardwickii*	V/V	Eco	*Feeds in soft mudflats or shallow water typically at night. Breeds in the northern hemisphere and migrates to Australia, arriving in late winter and leaving again in late February. The species disperses across southeastern Australia in response to rainfall and availability of food (Australian Government SPRAT).* *BAM survey period: n/a* *Habitat constraint: within 5km of claypans, intertidal zones, surface water features, semi-permanent/ephemeral wet areas, swamps and waterbodies.* Not recorded during bird surveys conducted for this assessment (October 2021). No previous records in the assessment area. A migratory shorebird which could theoretically use the subject land for foraging on occasions.	Assumed present on occasions – foraging only.	Yes
Little Lorikeet *Glossopsitta pusilla*	V/-	Eco	*Forages primarily in the canopy of open* Eucalyptus *forest and woodland. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Nests in proximity to feeding areas if possible, most typically selecting hollows in the limb or trunk of smooth-barked Eucalypts. Entrance is small (3 cm) and usually high above the ground (2–15 m). These nest sites are often used repeatedly for decades, suggesting that preferred sites are limited. Riparian trees often chosen, including species like* Allocasuarina. *Nesting season May to September.* *BAM survey period: n/a* Not recorded during bird surveys conducted for this assessment (October 2021). No likely breeding hollows occur within the subject land. No previous records in the assessment area. The subject land does not contain suitable habitat for this species and is not located proximate to areas where the species is known to occur.	Absent – not suitable habitat and not likely to occur.	No

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
Painted Honeyeater *Grantiella picta*	V/V	Eco	*Inhabits Boree/ Weeping Myall (Acacia pendula), Brigalow (A. harpophylla) and Box-Gum Woodlands and Box-Ironbark Forests.* *BAM survey period: n/a* *Habitat constraint: mistletoes present at a density of greater than five mistletoes per hectare.* Not recorded during bird surveys conducted for this assessment (October 2021). No previous records in the assessment area. The subject land does not contain mistletoes.	Absent – habitat constraint.	No
White-bellied Sea-Eagle *Haliaeetus leucogaster*	V/-	Dual	*Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat.* *BAM breeding survey period: Jul to Dec* *Habitat constraint: Waterbodies; Within 1km of a rivers, lakes, large dams or creeks, wetlands and coastlines* *Breeding habitat constraint: Living or dead mature trees within suitable vegetation within 1km of a rivers, lakes, large dams or creeks, wetlands and coastlines* Not recorded during bird surveys conducted for this assessment (October 2021). No previous records in the assessment area. No nests observed. The subject land does not contain waterbodies, but is adjacent to a moderate-sized dam. The species could theoretically occur within the subject land on occasions.	Assumed present.	Yes
Little Eagle *Hieraaetus morphnoides*	V/-	Dual	*Occupies open eucalypt forest, woodland or open woodland. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter. Preys on birds, reptiles and mammals, occasionally adding large insects and carrion.* *BAM breeding survey period: Aug to Oct* *Breeding habitat constraint: Nest trees - live (occasionally dead) large old trees within vegetation.* Recorded on the subject property in January 2008 (Bionet sightings). Not recorded during surveys conducted for this assessment (October 2021). No previous records in the assessment area. No nests observed. A wide-ranging species that could hunt across the subject land on occasions.	Recorded.	Yes

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
White-throated Needletail *Hirundapus caudacutus*	V/V	Eco	*Migratory species usually seen in eastern Australia from Oct to April. Most often seen in eastern Australia before storms, low pressure troughs and approaching cold fronts and occasionally bushfire. These conditions are often used by insects to swarm (eg termites and ants) or tend to lift insects away from the surface which favours sighting of White-throated Needletails as they feed. More common in coastal areas, less so inland. Although the species appears to primarily roost aerially, it has been recorded roosting in trees in forests and woodlands, both among dense foliage in the canopy or in hollows (Cth DCCEEW Consultation Document).* *BAM survey period: n/a* Not recorded during bird surveys conducted for this assessment (October 2021). No previous records in the assessment area. Breeds only in the northern hemisphere and primarily roosts aerially. The subject land does not contain forest or woodland. A wide-ranging species that could theoretically fly over the subject land on occasions, but is not likely to roost or breed within the subject land.	Absent - not likely to occur.	No
Key's Matchstick Grasshopper *Keyacris scurra*	E/E	Sp	*Typically found in native grasslands and grassy woodlands but it has also been recorded in other vegetation associations usually containing a native grass understory (especially kangaroo grass Themeda triandra) and known food plants (particularly Asteraceae). In some reported locations there is an absence of Themeda and very few or no Asteraceae.* *BAM survey period: Mar to May & Sep to Nov* Targeted surveys were not conducted for this assessment. The subject land does not contain native grassland with the native cover, species, or diversity that would support a population of this species. Additionally, land within the subject property has historically been intensively managed for agricultural production such that the species is not likely to have persisted if once present. It is also not likely to have recolonised the land given the low value of the habitat, the ongoing disturbance regime, and the low dispersive ability of the grasshopper (being flightless). Land around the highway intersection has similarly been substantially modified and is subject to ongoing use and management not compatible with this species.	Absent - not suitable habitat.	No

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
Swift Parrot *Lathamus discolor*	E/CE	Dual	*Migrates to the Australian mainland between February and October. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp infestations. Favoured feed trees include winter-flowering species such as Eucalyptus robusta, Corymbia maculata, C gummifera, E tereticornis, E sideroxylon and E albens. Commonly used lerp infested trees include E microcarpa, E moluccana, E pilularis and E melliodora.* *BAM breeding survey period: n/a* *Habitat constraint: As per Important Habitat Map* Not recorded during bird surveys conducted for this assessment (October 2021). No previous records within the assessment area. The land is not included on the Important Habitat Map for the species. The subject land contains only scattered trees rather than woodland is some distance from intact areas of woodland providing suitable habitat for this species.	Absent – unlikely habitat & site does not meet breeding habitat constraint.	No
Green & Golden Bell Frog *Litoria aurea*	E/V	Sp	*Inhabits marshes, dams and stream-sides, particularly those containing bullrushes (Typha spp.) or spikerushes (Eleocharis spp.). Optimum habitat includes water-bodies that are unshaded, free of predatory fish such as Plague Minnow (Gambusia holbrooki), have a grassy area nearby and diurnal sheltering sites available.* *BAM survey period: Nov to Mar* *Habitat constraint: within 1km of permanent/ephemeral wet areas, swamps, and waterbodies.* Not recorded during herpetofauna surveys conducted for this assessment (October 2021), although these surveys would not meet current survey guidelines. No previous records within the assessment area or within linked watercourses. The nearest surrounding records are all dated from 1975 (Goulburn 6km west, Bungonia 20km east, Jacqua 23km southeast). Dams within the subject land are accessed by stock and do not contain macrophytic vegetation. There are no adjacent shelter sites. The species is highly unlikely to be present.	Absent – not likely habitat and species highly unlikely to be present.	No
Booroolong Frog *Litoria*	E/E	Sp	*Lives along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses. Adults occur on or near cobble banks and other rock structures within stream margins. Shelter under rocks or amongst vegetation near the ground on the stream edge. Eggs are laid in submerged rock crevices and tadpoles grow in slow-flowing connected or isolated pools.*	Absent – not suitable habitat.	No

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
booroolongensis			*The NSW Survey Guide for Threatened Frogs states: The species requires permanent, or near permanent river environment with rocky structures (bedrock or cobble). Suitable breeding habitat consists of rocky structures in shallow water along the riparian zone, and non-breeding habitat is any habitat within the riparian zone (generally within 50 metres of the high water mark).* *BAM survey period: Oct to Dec* Not recorded during herpetofauna surveys conducted for this assessment (October 2021), although these surveys would not meet current survey guidelines. No previous records within the assessment area or within linked watercourses. The subject land does not contain any watercourses. The nearest permanent stream is the Wollondilly River, located approximately 800m north of the subject land across cleared paddocks.		
South-eastern Hooded Robin *Melanodryas cucullata cucullata*	E/E	Eco	*Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses. Territories range from around 10 ha during the breeding season, to 30 ha in the non-breeding season. May breed any time between July and November, often rearing several broods. The nest is a small, neat cup of bark and grasses bound with webs, in a tree fork or crevice, from less than 1 m to 5 m above the ground.* *BAM survey period: n/a* *Paddock trees can be important for this species as they can link remnant foraging habitat.* Not recorded during bird surveys conducted for this assessment (October 2021). No nests recorded. No previous records in the assessment area. The subject land does not contain suitable habitat for this species and is not located proximate to areas where the species is known to occur.	Absent - not suitable habitat and not likely to occur.	No
Large Bent-wing Bat *Miniopterus orianae oceanensis*	V/-	Dual	*Hunt in forested areas, catching moths and other flying insects above the tree tops. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. At other times of the year, populations disperse within about 300 km range of maternity caves.* *BAM survey period: Dec to Feb*	Present.	Yes

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
			Breeding habitat constraint: Cave, tunnel, mine, culvert or other structure known or suspected to be used for breeding including species records with microhabitat code "IC - in cave;" observation type code "E nest-roost;" with numbers of individuals >500. Recorded on the subject property in January 2008 (Bionet sightings). Targeted surveys not conducted for this assessment. The subject land does not contain caves or other structures suitable for roosting. The subject land does not contain a 'forested' area likely to provide suitable habitat for hunting. The species is wide-ranging and may hunt across the land opportunistically while moving through the landscape.		
Southern Myotis *Myotis macropus*	V/-	Sp	*Forages over streams and pools catching insects and small fish by raking their feet across the water surface. Roosts close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, wharves, bridges and in dense foliage.* *BAM survey period: Oct to Mar* *Habitat constraint: Waterbodies; Waterbodies with permanent pools/stretches 3m or wider, including rivers, large creeks, billabongs, lagoons, estuaries, dams and other waterbodies, on or within 200m of the site* Targeted surveys not conducted for this assessment. Not previously recorded in the assessment area. The subject land provides theoretical habitat for this species.	Assumed present.	Yes
Barking Owl *Ninox connivens*	V/-	Sp	*Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. Roosts in shaded portions of tree canopies. Preferentially hunts small arboreal mammals such as Squirrel Gliders and Common Ringtail Possums, but will also catch other prey including birds, rodents rabbits and bats.* *BAM survey period: all year* *Habitat constraint: Hollow bearing trees; a living or dead tree with a hollow >20 cm diameter that occurs >4 metres above the ground.* Targeted surveys were not conducted for this assessment. Not previously recorded in the assessment area. No suitable breeding hollows occur within the subject land. The subject land does not contain habitat that would support important arboreal mammal prey species (isolated and lacks tree-hollows). A wide-ranging species that could theoretically hunt across the subject land, but it is not known to occur locally and there are much better areas of potential habitat in the locality.	Absent – not suitable habitat.	No

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
Powerful Owl *Ninox strenua*	V/-	Sp	*Inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. Occupies large territories 400-4000ha. Main prey items are medium-sized arboreal marsupials, particularly the Greater Glider, Common Ringtail Possum and Sugar Glider. As most prey species require hollows and a shrub layer, these are important habitat components for the owl. Nests in large tree hollows (at least 0.5m deep), in large eucalypts (DBH 80-240cm) that are at least 150 years old. While the female and young are in the nest hollow the male Powerful Owl roosts nearby (10-200 m) guarding them, often choosing a dense "grove" of trees that provide concealment from other birds that harass him. The species can breed and forage in very small patches of vegetation.* *BAM survey period: all year* *Habitat constraint: Hollow bearing trees; a living or dead tree with a hollow >20 cm diameter that occurs >4 metres above the ground.* Targeted surveys were not conducted. Not previously recorded in the assessment area. No suitable breeding hollows occur within the subject land. The subject land does not contain habitat that would support important arboreal mammal prey species (isolated and lacks tree-hollows). A wide-ranging species that could theoretically hunt across the subject land, but it is not known to occur locally and there are much better areas of potential habitat in the locality.	Absent – not suitable habitat.	No
Scarlet Robin *Petroica boodang*	V/-	Eco	*The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. Habitat usually contains abundant logs and fallen timber: these are important components of its habitat. Scarlet Robin pairs defend a breeding territory and mainly breed between the months of July and January; they may raise two or three broods in each season. In autumn and winter many Scarlet Robins live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees* *BAM survey period: n/a* Not recorded during bird surveys conducted for this assessment (October 2021). No nests observed. One previous record in the assessment area, from adjacent to the Wollondilly River. The subject land is mostly exotic grassland with only a few isolated trees providing theoretical nesting sites. It does not contain a structurally diverse habitat. The species tends to be sedentary within relatively small home ranges. On the basis of lack of evidence or nearby records, and the low value of habitats present, this species is not likely to occur within the subject land.	Absent – not likely to occur.	No

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
Flame Robin *Petroica phoenicea*	V/-	Eco	*Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. In winter, birds migrate to drier more open habitats in the lowlands (valleys below the ranges and to the western slopes and plains).* *Breeding and non-breeding habitat is very different, key should be protecting breeding habitat. The species will occupy smaller patches outside breeding season. Paddock trees are used for roosting and foraging.* *The groundlayer of both breeding and non-breeding habitat is dominated by native grasses.* *BAM survey period: n/a* Not recorded during bird surveys conducted for this assessment (October 2021). No nests observed. No previous records in the assessment area. The subject land does not contain breeding habitat for this species and the groundlayer is not dominated by native grasses. On the basis of lack of evidence or nearby records, and the low suitability of habitats present, this species is not likely to occur within the subject land.	Absent – not likely to occur.	No
Squirrel Glider *Petaurus norfolcensis*	V/-	Sp	*Inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas. Prefers mixed species stands with a shrub or Acacia midstorey. Require abundant tree hollows for refuge and nest sites.* *BAM survey period: all year* Targeted surveys were not conducted for this assessment. No chew marks or other indirect evidence was observed on trees. No suitable hollows present. No previous records in the assessment area. The subject land does not contain suitable habitat for this species, and is too isolated from nearby treed areas to provide gliding access for the species.	Absent – not suitable habitat.	No
Brush-tailed Phascogale *Phascogale tapoatafa*	V/-	Sp	*Prefer dry sclerophyll open forest with sparse groundcover of herbs, grasses, shrubs or leaf litter. Also inhabit heath, swamps, rainforest and wet sclerophyll forest. Agile climber foraging preferentially in rough barked trees of 25 cm DBH or greater. Females have exclusive territories of approximately 20 - 40 ha, while males have overlapping territories often greater than 100 ha. Nest and shelter in tree hollows with entrances 2.5 - 4 cm wide and use many different hollows over a short time span.* *BAM survey period: Dec to Jun*	Absent – not suitable habitat.	No

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
			Targeted surveys were not conducted for this assessment. No indirect evidence was observed on trees. No suitable hollows present. No previous records in the assessment area. The subject land does not contain suitable habitat for this species, and is too isolated from nearby treed areas to provide connectivity value for this species.		
Koala *Phascolarctos cinereus*	E/E	Sp	*Inhabit eucalypt woodlands and forests. Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species. Inactive for most of the day, feeding and moving mostly at night. Home range size varies with quality of habitat, ranging from less than two ha to several hundred hectares in size.* *BAM survey period: all year* *Habitat constraint: Presence of koala use trees – refer to the Koala (Phascolarctos cinereus): Biodiversity Assessment Method Survey Guide for information on targeted survey requirements and mapping species polygons.* Not recorded within the subject land during fauna surveys conducted in October 2021. No indirect evidence recorded. No records within the assessment area (Bionet sightings). The species has been recorded in remnant patches of woodland beyond the assessment area and can be wide-ranging, particularly during the breeding season and during dispersal of young. However, the subject land does not contain viable habitat for this species and based on the local pattern of records, is not known or likely to be within a movement corridor for the species.	Absent – not likely to occur.	No
Grey-headed Flying-fox *Pteropus poliocephalus*	V/V	Dual	*Occurs 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 20km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.* *BAM breeding survey period: Oct to Dec* *Breeding habitat constraint: breeding camps* Targeted surveys were not conducted for this assessment. No camps were present during fauna surveys conducted in October 2021, nor during botanical surveys conducted at other times of the year. There is no anecdotal record of a camp on the property - which would be expected if a camp was present, given proximity to residential dwellings. No previous records within the assessment area.	Absent – not likely to occur.	No

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
			Whilst this is a wide-ranging species that will use a variety of habitats, it is not likely to occur within the subject land given the sparsity of records in the region, distance from known camps, and the extremely small extent of potential foraging habitat present within the subject land relative to the extent of eucalypt woodland and forest in the broader region.		
Speckled Warbler *Chthonicola sagittata*	V/-	Eco	*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. Large, relatively undisturbed remnants are required for the species to persist in an area. Pairs are sedentary and occupy a breeding territory of about ten hectares, with a slightly larger home-range when not breeding. The rounded, domed, roughly built nest of dry grass and strips of bark is located in a slight hollow in the ground or the base of a low dense plant, often among fallen branches and other litter. A side entrance allows the bird to walk directly inside.* *BAM survey period: n/a* *Paddock trees can be important for this species as they can link remnant foraging habitat.* Not recorded during bird surveys conducted for this assessment (October 2021). No nests recorded. No previous records in the assessment area. The subject land does not contain suitable habitat for this species and is not located proximate to areas where the species is known to occur. The subject land is mostly exotic grassland with only a few isolated trees. The species tends to be sedentary within small home ranges. On the basis of lack of evidence or nearby records, and the low suitability of habitats present, this species is not likely to occur within the subject land.	Absent - not likely to occur.	No
Yellow-bellied Sheath-tail Bat *Saccolaimus flaviventris*	V/-	Eco	*Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.* *BAM survey period: n/a* Recorded on the subject property in January 2008 (Bionet sightings). Targeted surveys not conducted for this assessment. The subject land provides theoretical habitat for this species.	Present.	Yes

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
Diamond Firetail *Stagonopleura guttata*	V/V	Eco	*Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. Often found in riparian areas (rivers and creeks), and sometimes in lightly wooded farmland. Groups separate into small colonies to breed, between August and January. Nests are globular structures built either in the shrubby understorey, or higher up, especially under hawk's or raven's nests. Appears to be sedentary, though some populations move locally, especially those in the south.* *BAM survey period: n/a* Not recorded during bird surveys conducted for this assessment (October 2021). No nests recorded. No previous records in the assessment area. The subject land is mostly exotic grassland with only a few isolated trees. The land does not contain a shrubby understorey. The species tends to be sedentary within relatively small home ranges. On the basis of lack of evidence or nearby records, and the low value of habitats present, this species is not likely to occur within the subject land.	Absent – not likely to occur.	No
Masked Owl *Tyto novaehollandiae*	V/-	Sp	*Lives in dry eucalypt forests and woodlands from sea level to 1100 m. A forest owl, but often hunts along the edges of forests, including roadsides. Typical diet consists of tree-dwelling and ground mammals, especially rats. Pairs have a large home-range of 1000 hectares or more, depending on prey availability. Roosts and breeds in moist eucalypt forested gullies, using large tree hollows or sometimes caves for nesting.* *BAM survey period: all year* *Habitat constraint: Hollow bearing trees; a living or dead tree with a hollow >20cm diameter that occurs >4m above the ground.* *Masked Owls will use patches of habitat within fragmented areas especially as foraging habitat but also for roosting and occasionally nesting.* *Hollows in dead stags are commonly selected for roosting and nesting habitat and are a limited resource due to natural attrition. Hollows in live trees are also used, and the prey of owls are often hollow-dependent. Masked Owls may be found nesting in paddock trees and caves.* *Masked Owls need large home ranges to provide adequate prey resources, with 2000 hectares being a reasonable estimated standard to expect in many habitats occupied by the species.*	Absent – not likely to occur.	No

Relevant Species	BC/ EPBC Status	Sp/Eco credit	Habitat suitability (Bionet TBDC) and field survey details	Conclusion	s7.3 Test of Sig. requ.
			Targeted surveys were not conducted for this assessment. Not previously recorded in the assessment area. The subject land does not contain roosting or breeding habitat and no suitable breeding hollows occur. The subject land does not contain habitat that would support important arboreal mammal prey species (isolated and lacks tree-hollows). A wide-ranging species that could theoretically hunt across the subject land, but it is not known to occur locally and there are much better areas of potential habitat in the locality.		

3.4 SEPP (Biodiversity and Conservation) 2021

3.4.1 Identifying Relevant Chapters

Chapter	Title	Applicable to site
2	Vegetation in non-rural areas	No – does not apply to activities that require development consent.
3	Koala habitat protection 2020	No – subject land is zoned E4 General Industrial
4	Koala habitat protection 2021	Yes – see Ch3.4.2 below.
5	River Murray lands	No – subject land is not within the mapped catchment area.
6	Water Catchments	Yes – subject land is within the Sydney drinking water catchment. Neutral or Beneficial Effect on Water Quality is addressed in the Water Cycle Management Study by Sowdes. No – subject land is not within the mapped areas for the Sydney Harbour catchment, Georges River catchment or the Hawkesbury-Nepean catchment.
7-12	Repealed	
13	Strategic conservation planning	No – subject land is not within the land application map area.

3.4.2 Chapter 4 - Koala habitat protection 2021

Does Koala habitat protection 2021 apply?

The subject land is within an LGA listed in Schedule 2 of the SEPP	Yes, Goulburn Mulwaree LGA
The subject land is dedicated, reserved, or acquired under the *National Parks and Wildlife Act 1974* or under the *Forestry Act 2012*	No
Biodiversity Certification under the *Biodiversity Conservation Act 2016* has been conferred to the land	No
The subject land is zoned RU1, RU2, or RU3.	No, land is zoned E4
An exemption applies to the land under Section 4.6 of the SEPP	No

Yes, Chapter 4 (Koala Habitat Protection 2021) applies to the proposed development.

Does Part 4.2 Development control of koala habitats apply?

Proposed development is on land to which an approved koala plan of management applies.	No
Proposed development is on land which has an area of at least 1 hectare (including adjoining land within the same ownership).	Yes

Yes – Section 4.9 under Part 4.2 of the SEPP applies to the proposed development.

Presence of koalas or koala habitat

Goulburn Mulwaree LGA is assigned in the SEPP to the 'Central and Southern Tablelands' koala management area (KMA).

The subject property and subject land consist primarily of exotic pasture with isolated individuals of Cabbage Gum *Eucalyptus amplifolia,* Apple Box *Eucalyptus bridgesiana*, Yellow Box *Eucalyptus melliodora* and Blakely's Red Gum *Eucalyptus blakelyi*. Each of these species is listed as a 'koala use tree' for the Central & Southern Tablelands Koala Management Area.

The subject land is, therefore, classed as koala habitat.

There is no evidence for use of the land by Koalas, and no previous records of Koalas on the land or within the assessment area (Bionet sightings, 24th March 2026).

Impacts of the proposed development

Koalas do not reside within the subject land and are not considered likely to use the subject land for breeding migrations or dispersal.

The proposed development has been designed to retain mature eucalypts present where possible (*ie* around the existing driveway entrance to the property from Murrays Flat Road, and within the riparian corridor adjacent to the subject land). Three smaller trees have been identified for removal from within the property. The proposed upgrade of the intersection of Murrays Flat Road with the Hume Highway is expected to require removal of one further native tree.

The development would not be likely to adversely affect any Koalas.

Council may grant consent

Under Section 4.9(3), Council may grant consent to a development application where Council is satisfied the development is likely to have a low or no impact on koalas or koala habitat.

Additionally, under Section 4.9(5)(a)(i), Council may grant development consent if the applicant provides to Council information that Council is satisfied demonstrates that the subject land is not 'core koala habitat'.

The land is not regarded as 'core koala habitat' on the basis that it is:

i. not 'highly suitable' due to the limited extent of resources and highly fragmented condition; and

ii. there is no evidence of koalas using the land, or historical records of koala presence on the land.

On the basis of site assessment findings set out above, Council may grant consent to the development application on the basis of either or both:

* The development would have a low or no impact on koalas or koala habitat; and
* The subject land does not contain core koala habitat.

Conclusion

Chapter 4 *Koala habitat protection 2021* of *SEPP (Biodiversity Conservation) 2021* is relevant to the subject land and Part 4.2 *Development control of koala habitats* applies. The development would have a low or no impact on Koalas or Koala habitat. The subject land does not contain core koala habitat. Council may grant consent to the development application.

3.5 Identifying Prescribed Biodiversity Impacts

These are potential impacts on threatened entities and their habitat in addition to, or instead of, impacts from clearing of vegetation, as set out in Clause 6 of the BC Reg.

Table 4 *Prescribed biodiversity impacts and their relevance to the subject land.*

Prescribed Biodiversity Impact	Details
Impacts on threatened entities associated with karst, caves, crevices cliffs, rocks and other geological features of significance	There is no karst, or caves, rock or other features of geological significance within the subject land.
Impacts on the habitat of threatened entities associated with human made structures or non-native vegetation.	No human-made structures are proposed to be removed. Non-native vegetation consists of exotic pasture. No threatened species are associated with this vegetation.

Prescribed Biodiversity Impact	Details
Impacts on connectivity of habitat of threatened entities	Habitat within the subject land is currently isolated and located within a broadly cleared area. The subject land does not provide important connectivity for threatened entities.
Impacts on water quality, water bodies and hydrological processes that sustain threatened entities	No streams are located within the subject land. Two small farm dams within the subject land would be retained within landscaped areas. Additional waterbodies would be constructed to manage site water in accordance with engineering requirements and plans. The Southern Myotis is assumed to be present and could use any of the water bodies currently within the property, or proposed to be constructed. The better quality habitat is associated with inline dams along the stream to the east of the subject land. The character and quality of groundwater within the subject land and surrounding landscape would reflect previous extensive land clearing and long term human management of the region. The proposed development would not have a material impact on water bodies or hydrological processes that sustain threatened entities.
Impacts of wind turbine strikes on protected animals.	Not applicable.
Impacts of vehicle strikes on threatened fauna or fauna that are part of a TEC	The development would be accessed by Murrays Flat Road which runs through open cleared land to the Hume Highway, approximately 500m south of the subject land. The increased risk of vehicle strikes on fauna as a result of the development would be negligible.

4 STAGE 2: IMPACT ASSESSMENT

4.1 Identification, Avoidance and Minimisation of Impacts

4.1.1 Project Design to Avoid and Minimise Impacts

The proposed development would make use of existing cleared land and existing infrastructure within the property.

The development has been located and designed to avoid impacts on streams and waterbodies, and to retain mature native trees where possible (*ie* around the existing driveway entrance from Murrays Flat Road). Three smaller native trees have been identified for removal.

The proposed upgrade of the intersection of Murrays Flat Road with the Hume Highway may require removal of one further native tree, from the western side of Murrays Flat Road.

Existing small dams within the subject land would be retained within landscaped areas.

Refer to Figure 2 (Development layout) and Figure 5 (Direct impacts on native vegetation).

4.1.2 Direct Impacts

The subject land contains 0.22 ha of native vegetation (as described in Chapter 3.2.1).

The development would directly impact 0.18 ha of native vegetation, including:

- Loss of four native trees with a canopy area of 0.02 ha;
- Probable disturbance and/or loss of up to 0.16 ha of native grassland;

Direct impacts on native vegetation are illustrated on Figure 5 (Direct impacts on native vegetation) and set out in Table 5 below.

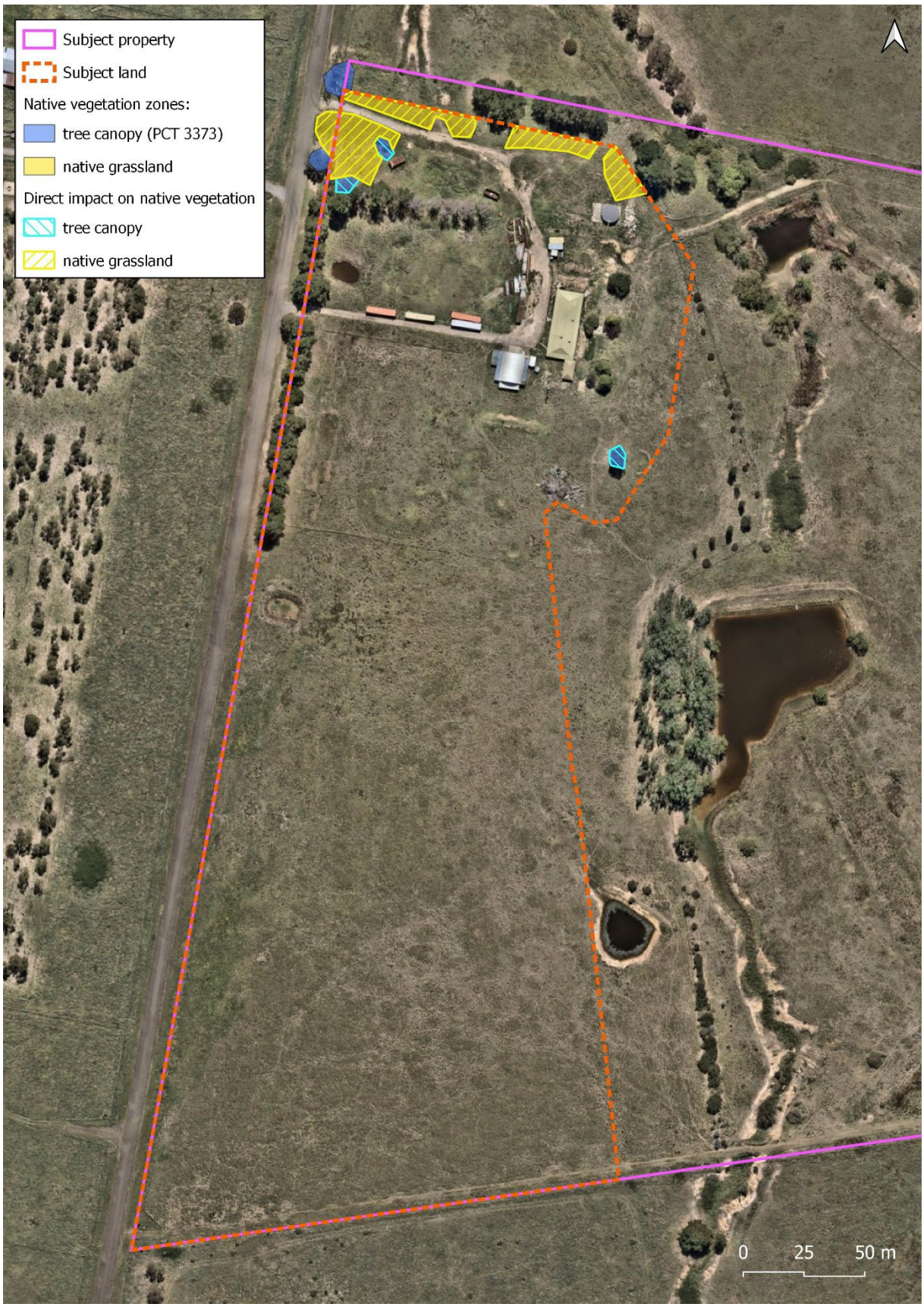

Figure 5A *Direct impacts on native vegetation within the subject property (aerial photo from Nearmap, 1st March 2025).*

Figure 5B *Direct impacts on native vegetation around the proposed highway intersection upgrade (aerial photo from Nearmap, 1st March 2025).*

Table 5 *Direct impacts (including potential impacts) of the proposed development upon native vegetation and threatened entities, with details of the vegetation zones affected, the extent of impact, and a summary of measures to avoid and/or minimise the impact.*

Type of Impact	Veg. Zone	Extent & details of impact	Summary of avoidance and minimisation
Complete loss of native vegetation	Native trees	Four isolated native trees with a combined canopy area of approximately 0.02ha.	The development layout was designed to retain mature native trees where possible. Three smaller trees have been identified for removal within the development footprint. One further tree may require removal adjacent to the highway intersection, to enable safe use of the intersection.
Probable disturbance and/or loss of native vegetation	Native grassland	Up to 0.16 ha of low quality native grassland.	These areas are dominated by exotic pasture grasses and weeds and are of low biodiversity value. Most are not directly within the development footprint and may be retained in their existing condition, or included in site landscaping. No specific avoidance measures are warranted.

4.1.3 Indirect Impacts

Retained native vegetation may be subject to indirect impacts, as set out in Table 6.

The relevant indirect impacts would not be new to the area, but would be minor increases to existing impacts. The development has been designed to enable indirect impacts to be managed and contained within the subject land.

Table 6 *Indirect impacts (including potential impacts) of the proposed development upon native vegetation and threatened entities, with details of the nature, extent, duration and timing of the impact, and a summary of measures to avoid and/or minimise the impact.*

Type of Impact	Details	Summary of avoidance and minimisation
Inadvertent physical damage to retained vegetation.	There is potential during construction activities for inadvertent damage to existing trees to be retained, particularly around the existing driveway entrance to the property. Of particular note is the tentative identification of a sapling as either	Tree protection measures shall be installed around native trees to be retained within the subject land, as recommended by an Arborist. The extent of site works for the highway intersection upgrade shall be clearly marked on site, to minimise risk

Type of Impact	Details	Summary of avoidance and minimisation
	Eucalyptus macarthurii or *Eucalyptus aggregata* (both listed as threatened species) approx. 20m beyond the footprint of the proposed highway intersection works.	of inadvertent damage to trees and saplings outside of the works footprint.
Reduced viability of habitat due to edge effects.	There are no vegetation 'edges' to be managed.	No measures proposed.
Reduced viability of habitat due to noise, dust or light spill.	The potential increase in noise, light, and dust from construction works and subsequent use of the development would be negligible given existing impacts from dwellings, agricultural activities, and the nearby Hume Highway.	No measures proposed beyond compliance with standard environmental controls.
Spread of diseases and weeds.	There is risk of introduction of diseases and weed propagules with construction equipment coming onto the site, and with future landscaping activities. The increase in risk resulting from the development would be negligible given the existing condition of the land and existing agricultural activities on the land.	Biosecurity risk during construction should be addressed as follows: i) all machinery, equipment and work boots be cleaned of soil and plant propagules prior to entering the development site, and upon leaving the development site; and ii) any fill, soil, or mulch imported to the site be screened and certified clean of diseases and weeds.
Loss of food and shelter for fauna.	The development would not alter the availability of food and shelter for fauna in areas of retained vegetation.	No measures proposed.
Loss of breeding habitat.	The development would not result in loss of breeding habitat for native species in areas of retained vegetation.	No measures proposed.
Trampling of threatened flora species.	Not applicable.	No measures proposed.
Inhibition of nitrogen fixation and increased soil salinity.	Unlikely impact.	No measures proposed.
Fertiliser drift.	No change to existing impact.	No measures proposed.

Type of Impact	Details	Summary of avoidance and minimisation
Rubbish dumping.	Unlikely impact.	No measures proposed.
Wood collection.	No change to existing impact.	No measures proposed.
Removal of rocks.	Not applicable.	No measures proposed.
Increase in predators.	No change to existing impact.	No measures proposed.
Increase in pest animal populations.	Unlikely to change.	No measures proposed.
Changed fire regime.	Unlikely to change.	No measures proposed.
Disturbance to specialist breeding and foraging habitat.	The development would not result in loss of specialist breeding or foraging habitat in areas of retained vegetation.	No measures proposed.

4.1.4 Prescribed Biodiversity Impacts

Prescribed impacts are potential impacts on threatened entities and their habitat in addition to, or instead of, impacts from clearing of vegetation, as set out in Clause 6 of the BC Reg.

Prescribed biodiversity impacts are discussed in Ch 3.5 of this report. There are no prescribed biodiversity impacts of relevance to the proposed development.

4.1.5 Mitigation of impacts

Supplementary planting of local native tree and shrub species is recommended for the riparian corridor to the east of the subject land, to replace native vegetation removed from the subject land and improve biodiversity values of the property.

A planting plan should be prepared in consultation with an ecologist or revegetation specialist.

4.1.6 Summary of avoidance, minimisation and mitigation measures

Table 7 *Summary of measures to be implemented to avoid, minimise and mitigate impacts. Essential measures are those relied upon for the purpose of the impact assessment in this report.*

Action	Outcome	Timing	Responsibility	Essent'l
Prior to construction				
Tree protection measures shall be installed around trees to be retained within the subject land, as recommended by an Arborist.	Avoid inadvertent physical damage to retained trees.	Prior to commencement of construction activities, for the duration of works.	Project Arborist	✓
The extent of site works for the highway intersection upgrade shall be clearly marked on site.	Minimise risk of inadvertent damage to trees and saplings outside of the works footprint.	Prior to commencement of construction activities, for the duration of works.	Construction site manager	✓
Installation of sediment and erosion control features to meet relevant standards.	Minimise impacts downslope and downstream.	Prior to commencement of construction works, for the duration of works.	Construction site manager	
During construction				
Cleaning of machinery, equipment and boots.	Avoid spread of disease and weeds.	Throughout site works, whenever equipment, machinery or workboots enters or leaves site.	Construction site manager & all site workers	
Fill, soil, or mulch imported to the site to be screened and certified clean of diseases and weeds.	Minimise potential for spread of diseases and weeds.	As relevant.	Project Manager	
Following construction				
Careful removal of tree protection measures, sediment & erosion control, and any other temporary features.	Minimise potential for spread of diseases and weeds.	Upon completion of all site works and stabilisation of soil surface.	Construction site manager	
Supplementary planting of local native tree and shrub species in the riparian corridor to the east of the subject land.	Replace native vegetation removed from the subject land. Improve floristic and structural diversity of the riparian corridor.	Prior to occupation/use of the development.	Project Manager	

4.2 Does the Biodiversity Offset Scheme apply?

4.2.1 Areas of Outstanding Biodiversity Value (AOBV)

The development would not affect land declared to be an Area of Outstanding Biodiversity Value.

4.2.2 BOS Area Criteria

If a development project will clear an area of native vegetation equivalent to the area specified in column 2 of the area of clearing table (see below) established under clause 7.2 of the BC Reg, then the project exceeds the Biodiversity Offset Scheme threshold.

Column 1	Column 2
Minimum lot size of land	Area of clearing
Less than 1 hectare	0.25 hectare or more
Less than 40 hectares but not less than 1 hectare	0.5 hectare or more
Less than 1,000 hectares but not less than 40 hectares	1 hectare or more
1,000 hectares or more	2 hectares or more

A minimum lot size has not been assigned to the land. The actual lot size is 32 hectares. The area of clearing criteria is 0.5 hectares.

The proposed development would directly impact approximately 0.18 hectares of native vegetation. This is below the area threshold. The proposed development would not exceed the area threshold.

4.2.3 BOS Biodiversity Values Map

No part of the subject land is included on the Biodiversity Values Map.

The proposed development would not impact land included on the map. The development would not exceed the map threshold.

4.2.4 Test of Significance

For development projects that do not exceed the BOSET area or map criteria, a Test of Significance is required to determine whether the project "*is likely to significantly affect threatened species or ecological communities, or their habitats*", in accordance with s7.3 of the BC Act.

The test of significance set out below has been prepared in accordance with the *Threatened Species Test of Significance Guidelines* (NSW Office of Environment and Heritage, July 2018), gazetted on 3rd August 2018.

Relevant threatened species

The OEH (2018) guidelines state:

> *A species does not have to be considered as part of the test of significance if recent and reliable data, relating to the study area and subject site and derived from field surveys consistent with OEH guidelines, clearly show that the species:*
>
> - *does not occur in the study area, and*
> - *will not use on-site habitats on occasion, and*
> - *will not be influenced by off-site impacts of the proposal.*
>
> *Justification for excluding a species from the assessment must be provided with the test of significance to the consent authority, including details of supporting surveys or studies.*
>
> *Otherwise all species likely to occur in the study area, and known to use that type of habitat, should be considered in the rationale that determines the list of threatened species and ecological communities for the test of significance.*

Relevant threatened species are listed in Chapter 3.3 Table 3 of this report. Field surveys were conducted to search for threatened flora and for specific resources of relevance for threatened fauna. Surveys were also conducted to search for indirect evidence of threatened fauna.

Consideration as to whether relevant species are known or potentially present within the subject land on the basis of survey and habitat assessment data is summarised in Table 3, with a conclusion as to whether an assessment of impacts is required.

Test of Significance

The following is to be taken into account for the purpose of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

- *Dusky Woodswallow*: Recorded on the subject property in 2008 (Bionet record). Not recorded during subsequent surveys and no nests recorded. This species is more likely to use vegetation associated with the riparian corridor to the east of the subject land than the isolated trees within the subject land. The proposed development would result in loss of three smaller native trees from the subject land, with retention of larger mature trees at the property entrance, and along the riparian corridor. The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands and within the foraging range of this species. No unique or rare resources would be removed. No likely impact on life cycle.

* *Gang-gang Cockatoo*: Has not been recorded within the subject land. No suitable hollows for roosting and breeding are present or would be removed. A wide-ranging species assumed to forage within trees present on occasions. The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands and within the foraging range of this species. No unique or rare resources would be removed. No likely impact on life cycle.

* *Spotted Harrier*: Has not been recorded within the subject land. No nests have been recorded. A wide-ranging species assumed to hunt across the land on occasions. The scale of the development is not significant relative to the extent of open foraging habitat available on surrounding lands and within the foraging range of this species. No unique or rare resources would be removed. No likely impact on life cycle.

* *Eastern False Pipistrelle*: Recorded on the subject property in 2008 (Bionet record). No previous records in the assessment area. The subject land does not provide typical habitat for this species and it was not predicted to occur by the BAM-Calculator. The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands and within the foraging range of this species. No unique or rare resources would be removed. No likely impact on life cycle.

* *Latham's Snipe*: A migratory shorebird that breeds in the northern hemisphere. It has not been recorded within the subject land or within the assessment area, but is conservatively assumed to visit wet areas within the subject property to forage on occasions. Habitats present are not rare or unique in the landscape and would not be of importance for any aspect of the species' life style. The proposed development would primarily impact dry grassland areas within the property, with minimal impact on the riparian corridor or wet areas. No likely impact on life cycle.

* *White-bellied Sea-Eagle*: Has not been recorded within the subject land. No nests have been recorded. A wide-ranging species assumed to hunt across dams present on the subject property on occasions. The proposed development would not impact on any dams likely to be of value and would not remove large eucalypts potentially providing nesting sites. No likely impact on life cycle.

* *Little Eagle*: Has not been recorded within the subject land. No nests have been recorded. A wide-ranging species assumed to hunt across the land on occasions. The scale of the development is not significant relative to the extent of open foraging habitat available on surrounding lands and within the foraging range of this species. No unique or rare resources would be removed. No likely impact on life cycle.

* *Large Bent-wing Bat*: Recorded on the subject property in 2008 (Bionet record). No previous records in the assessment area. The subject land does not provide roosting or breeding habitat for this species, nor typical foraging habitat, and it was not predicted to occur by the BAM-Calculator. The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands and within the foraging range of this species. No unique or rare resources would be removed. No likely impact on life cycle.

* *Southern Myotis*: Not known to occur within the subject property or assessment area. It is assumed to hunt across farm dams within the property and potentially roost in nearby trees or culverts. The two small farm dams within the subject land would be retained within

landscaped areas. The better quality habitat is associated with inline dams along the stream to the east of the subject land, which would not be impacted by the development. The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands. No likely impact on life cycle.

* *Yellow-bellied Sheath-tail Bat*: Recorded on the subject property in 2008 (Bionet record). No previous records in the assessment area. The subject land does not provide typical habitat for this species and it was not predicted to occur by the BAM-Calculator. The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands and within the foraging range of this species. No unique or rare resources would be removed. No likely impact on life cycle.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

Not applicable.

(c) in relation to the habitat of a threatened species or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.

* *Dusky Woodswallow*: The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands and within the foraging range of this species. Habitats within the subject land are currently isolated and located within a broadly cleared area. The development would not alter the current state of isolation and fragmentation of habitats. No unique or rare resources would be removed. The species is not resident. The habitat is not likely to be of particular importance to the survival of this species.

* *Gang-Gang Cockatoo*: The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands and within the foraging range of this species. Habitats within the subject land are currently isolated and located within a broadly cleared area. The development would not alter the current state of isolation and fragmentation of habitats. No unique or rare resources would be removed. The species would not breed within the site and is not resident. The habitat is not likely to be of particular importance to the survival of this species.

* *Spotted Harrier:* The scale of the development is not significant relative to the extent of open foraging habitat available on surrounding lands and within the foraging range of this species. Habitats within the subject land are currently isolated and located within a broadly cleared area. The development would not alter the current state of isolation and fragmentation of habitats. No unique or rare resources would be removed. The species is not resident. The habitat is not likely to be of particular importance to the survival of this species.

* *Eastern False Pipistrelle*: The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands and within the foraging range of this species. Habitats within the subject land are currently isolated and located within a broadly cleared area. The development would not alter the current state of isolation and fragmentation of habitats. No unique or rare resources would be removed. The subject land does not provide typical habitat for this species and it was not predicted to occur by the BAM-Calculator. The habitat is not likely to be of particular importance to the survival of this species.

* *Latham's Snipe*: No waterbodies likely to be used by this species would be directly impacted by the development. Habitats within the subject land are currently isolated and located within a broadly cleared area. The development would not alter the current state of isolation and fragmentation of habitats for this highly mobile migratory species. No unique or rare resources would be removed. The species is not resident. The habitat is not likely to be of particular importance to the survival of this species.

* *White-bellied Sea-Eagle*: No waterbodies likely to be used by this species would be directly impacted by the development. The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands and within the foraging range of this species. Habitats within the subject land are currently isolated and located within a broadly cleared area. The development would not alter the current state of isolation and fragmentation of habitats. No unique or rare resources would be removed. The species is not resident. The habitat is not likely to be of particular importance to the survival of this species.

* *Little Eagle*: The scale of the development is not significant relative to the extent of open foraging habitat available on surrounding lands and within the foraging range of this species. Habitats within the subject land are currently isolated and located within a broadly cleared area. The development would not alter the current state of isolation and fragmentation of habitats. No unique or rare resources would be removed. The species is not resident. The habitat is not likely to be of particular importance to the survival of this species.

* *Large Bent-wing Bat*: The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands and within the foraging range of this species. Habitats within the subject land are currently isolated and located within a broadly cleared area. The development would not alter the current state of isolation and fragmentation of habitats. No unique or rare resources would be removed. The subject land does not provide roosting or breeding habitat for this species, nor typical foraging habitat, and it was not predicted to occur by the BAM-Calculator. The habitat is not likely to be of particular importance to the survival of this species.

- *Southern Myotis*: The two small farm dams within the subject land would be retained within landscaped areas. The better quality habitat associated with inline dams along the stream to the east of the subject land would not be impacted by the development. The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands. Habitats within the subject land are currently isolated and located within a broadly cleared area. The development would not alter the current state of isolation and fragmentation of habitats. No unique or rare resources would be removed. The species is not likely to be resident (based on lack of a site record from bat surveys conducted in 2008 and lack of other records in the assessment area). The habitat is not likely to be of particular importance to the survival of this species.
- *Yellow-bellied Sheath-tail Bat*: The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands and within the foraging range of this species. Habitats within the subject land are currently isolated and located within a broadly cleared area. The development would not alter the current state of isolation and fragmentation of habitats. No unique or rare resources would be removed. The subject land does not provide typical habitat for this species and it was not predicted to occur by the BAM-Calculator. The habitat is not likely to be of particular importance to the survival of this species.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

- There are no declared areas of outstanding biodiversity value on the subject land or within the assessment area.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

Table 8 *Key Threatening Processes listed under the BC Act, relevant to the IBRA Bungonia sub-region (Bionet).*

Key Threatening Process	Effect of proposal
Aggressive exclusion of birds from potential woodland and forest habitat by over-abundant noisy miners (*Manorina melanocephala*)	nil
Alteration of habitat following subsidence due to longwall mining	nil
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	negligible
Anthropogenic climate change	negligible
Bushrock removal	nil
Clearing of native vegetation	not significant
Competition and grazing by the feral European Rabbit *Oryctolagus cuniculus*	nil

Key Threatening Process	Effect of proposal
Competition and habitat degradation by Feral Goats *Capra hircus*	nil
Competition from feral honey bees *Apis mellifera*	nil
Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	nil
Habitat degradation and loss by Feral Horses (brumbies, wild horses), Equus caballus Linnaeus 1758	nil
Herbivory and environmental degradation caused by feral deer	nil
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	nil
Importation of red imported fire ants *Solenopsis invicta*	nil
Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations	nil
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	unlikely
Infection of native plants by *Phytophthora cinnamomi*	unlikely
Introduction and establishment of Exotic Rust Fungus of the order Pucciniales pathogenic on plants of the family Myrtaceae	unlikely
Introduction of the large earth bumblebee *Bombus terrestris*	nil
Invasion and establishment of exotic vines and scramblers	nil
Invasion and establishment of Scotch Broom (*Cytisus scoparius*)	nil
Invasion and establishment of the cane toad (*Bufo marinus*)	nil
Invasion of native plant communities by African Olive *Olea europaea* ssp *cuspidata*	nil
Invasion of native plant communities by *Chrysanthemoides monilifera*	nil
Invasion of native plant communities by exotic perennial grasses	No change
Invasion of the yellow crazy ant (*Anoplolepis gracilipes*) into NSW	nil
Invasion, establishment and spread of Lantana (*Lantana camara*)	nil
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants.	unlikely
Loss of hollow-bearing trees	nil
Loss or degradation (or both) of sites used for hill-topping by butterflies	nil
Predation and hybridisation of feral dogs (*Canis lupus familiaris*)	nil
Predation by *Gambusia holbrooki* Girard, 1859 (plague minnow or mosquito fish)	nil
Predation by European red fox (*Vulpes vulpes*)	nil
Predation by the feral cat (*Felis catus*)	negligible
Predation, Habitat degradation, Competition and Disease Transmission by Feral Pigs (*Sus scrofa*)	nil
Removal of dead wood and dead trees	negligible

The likely and potential impacts of the proposed development are not regarded as significant for any of the relevant threatened species.

There is a theoretical increase to risk of spread of some diseases, and risk of further weed spread. These impacts would not be new to the subject land or retained vegetation in the vicinity, and would not be significant for any threatened species.

Test of Significance Conclusion

The likely and potential impacts of the proposed development upon threatened species have been considered pursuant to s7.3 of the BC Act. In conclusion, the proposed development is not "*likely to significantly affect threatened species or ecological communities, or their habitats*".

4.2.5 Biodiversity Offset Scheme Conclusion

In conclusion:

1. The development would not affect any Areas of Outstanding Biodiversity Value (AOBV)
2. The development would not exceed the Biodiversity Offset Scheme Entry Threshold (BOSET)
3. The development would not be likely to significantly affect threatened species or ecological communities, or their habitats.

The Biodiversity Offset Scheme does not apply. Further assessment of the project using the Biodiversity Assessment Method (BAM) is not required. A Biodiversity Development Assessment Report (BDAR) is not required. Offsetting of impacts under the Biodiversity Offsets Scheme (BOS) is not required.

4.3 Commonwealth EPBC Act

The *Commonwealth Environment Protection & Biodiversity Conservation Act 1999* requires that an action which has, will have or is likely to have a significant impact upon one or more matters of National Environmental Significance (NES) must be referred to the Commonwealth Minister for Environment & Heritage for approval. These actions are referred to as 'controlled actions'.

Matters of NES include World Heritage properties, listed Ramsar Wetlands of international importance, listed threatened species and communities, listed migratory species, nuclear actions and Commonwealth marine areas.

4.3.1 Matters of National Environmental Significance

Table 9 *Identification of mattters of National Environmental Significance for assessment.*

NES	Relevance to project
World Heritage Properties	n/a
Ramsar Wetlands	n/a
Threatened plant species	n/a
Threatened fauna species	Gang Gang Cockatoo *Callocephalon fimbriatum* (E) – assumed to forage in vegetation within the subject land on occasions. Latham's Snipe *Gallinago hardwickii* (V) – assumed to use the subject land for foraging on occasions.
Threatened communities	n/a
Migratory species	A large number of listed migratory bird species are known to occur in the region. Many would be likely to range over the subject land on occasions, and could theoretically use resources present on occasions. The site does not contain unique features that would be of particular value for migratory birds. Latham's Snipe has been considered above. It is not likely that any other migratory species would use the subject land or include it as part of a regular foraging range. The proposed development would not be likely to affect any migratory species listed under the EPBC Act.
Nuclear actions	n/a
Commonwealth marine areas	n/a

4.3.2 Assessment of Significance

Critically Endangered and Endangered species – Gang-Gang Cockatoo

An action is likely to have a significant impact on a critically endangered or 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;

  Gang-Gang Cockatoo – A wide-ranging species assumed to forage within trees present on occasions. No suitable nesting hollows are present. The proposed development would result in loss of up to four small trees providing potential foraging resources for this species. The extent of tree cover removal proposed is very small (0.02ha) and not significant relative to that present on surrounding lands and within the foraging range of this species. No unique or rare resources would be removed. The development would not alter the current state of isolation and

fragmentation of habitats. The habitat that would be removed does not provide breeding features and is not likely to be of particular importance for this species. The development would not lead to a long-term decrease in the size of a population of this species.

* reduce the area of occupancy of the species;

  The Gang Gang Cockatoo does not 'occupy' the site. Habitats present may be used on an occasional basis. The proposed development would not prevent ongoing use of the habitat. The proposed development would not reduce the area of occupancy for the species.

* fragment an existing population into two or more populations;

  Habitats within the subject land are currently isolated and located within a broadly cleared area. The development would not alter the current state of isolation and fragmentation of habitats.

* adversely affect habitat critical to the survival of a species;

  No critical habitat has been defined under s.207A of the EPBC Act. Habitat identified as critical to the species in the Australian Government conservation advice includes all foraging habitat during both breeding and non-breeding seasons, and hollow-bearing trees with known or potentially suitable hollow chambers. The development would impact upon approximately 0.02ha of scattered trees assumed to be non-breeding foraging habitat for the species. The species is not known to occur within the subject land and there is only one record of the species within the assessment area. The proposed loss is not considered to be a significant impact on the species.

* disrupt the breeding cycle of a population;

  The Gang Gang Cockatoo would not breed within the subject land. The proposed development would not disrupt movement for breeding or any other aspect of the breeding cycle.

* modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;

  The proposed development would result in loss of up to four small trees providing potential foraging resources for this species. This loss would be negligible in relation to the extent of potential habitat available in the surrounding area. Indirect impacts would be negligible given the current condition of the land and existing agricultural activities. The proposed development would not affect the availability or quality of retained habitat for the species to the extent such that the species would decline.

* result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat;

  The proposed development would not alter the current situation in regard to harmful species.

* introduce disease that may cause the species to decline, or;

  The proposed development would not alter the current situation in regard to disease.

* interfere with the recovery of the species.

  A National recovery plan has not been prepared for this species. The proposed development would not interfere with or prevent recovery actions for this species set out in the Australian Government conservation advice for the species.

Vulnerable species – Latham's Snipe

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;

  A migratory shorebird that breeds in the northern hemisphere. It has not been recorded within the subject land or within the assessment area, but individuals are conservatively assumed to visit wet areas within the subject property to forage on occasions. The subject land does not support an important population of the species. The proposed development would primarily impact dry grassland areas within the property, with minimal impact on the riparian corridor or wet areas. The development would not 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;

  Latham's Snipe does not 'occupy' the site. Habitats present may be used on an occasional basis. The proposed development would not prevent ongoing use of the habitat. The proposed development would not reduce the area of occupancy for the species.

* fragment an existing important population into two or more populations;

  Habitats within the subject land are currently isolated and located within a broadly cleared area. The development would not alter the current state of isolation and fragmentation of habitats.

* adversely affect habitat critical to the survival of a species;

  No critical habitat has been defined under s.207A of the EPBC Act. No specific habitat type or features have been identified in the Australian Government conservation advice as critical to the species in Australia.

* disrupt the breeding cycle of an important population;

  The species breeds only in the northern hemisphere. The proposed development would not disrupt movement for breeding or any other aspect of the breeding cycle.

* modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;

  The proposed development would primarily impact dry grassland areas within the property, with minimal impact on the riparian corridor or wet areas. The proposed development would not affect the availability or quality of retained habitat for this species to the extent that the species would decline.

* result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat;

  The proposed development would not alter the current situation in regard to harmful species.

* introduce disease that may cause the species to decline, or;

  The proposed development would not alter the current situation in regard to disease.

* interfere substantially with the recovery of the species.

A National recovery plan has not been prepared for this species. The proposed development would not interfere with or prevent recovery actions for this species set out in the Australian Government conservation advice for the species.

4.3.3 Conclusion

The proposed development would not be likely to impose a significant impact upon any matter of *National Environmental Significance* listed under the Commonwealth EPBC Act.

On this basis, there is no requirement to refer the project to the Commonwealth Minister for Environment.

5 LOCAL GOVERNMENT CONTROLS

5.1 Goulburn Mulwaree LEP 2009 (GMLEP)

The Subject Land is zoned E4 General Industrial under GMLEP (2009).

Objectives

The objectives for the E4 zone are:

- *To provide a range of industrial, warehouse, logistics and related land uses.*
- *To ensure the efficient and viable use of land for industrial uses.*
- *To minimise any adverse effect of industry on other land uses.*
- *To encourage employment opportunities.*
- *To enable limited non-industrial land uses that provide facilities and services to meet the needs of businesses and workers.*

Clauses

Relevant clauses within the GMLEP relating to biodiversity conservation and management are:

* Clause 7.2 Terrestrial biodiversity.

  This clause applies to land identified as '*Biodiversity*' on the Terrestrial Biodiversity Map. The subject land is mapped as *Biodiversity*. The clause therefore applies.

  The objectives of the clause are to protect, maintain or improve the diversity of native vegetation, including:

  a) protecting biological diversity of native flora and fauna, and
  b) protecting the ecological processes necessary for their continued existence, and
  c) encouraging the recovery of threatened species, communities or populations and their habitats.

  Development controls are satisfied through:

  * The lodgement of this Flora and Fauna Assessment report with the development application to Council.
  * The design and siting of the development to minimise impacts on native trees and natural watercourses.
  * Consideration of appropriate measures to minimise and mitigate potential adverse impacts on biodiversity values of the land.

5.2 Local Government Controls Conclusion

The proposed development is consistent with the biodiversity conservation provisions of GMLEP (2009).

6 SUMMARY & CONCLUSIONS

National

The proposed development would not be likely to impose a significant impact upon any matter of *National Environmental Significance* listed under the Commonwealth EPBC Act. On this basis, there is no requirement to refer the project to the Commonwealth Minister for Environment.

State

BC Act - The Biodiversity Offset Scheme does not apply. Further assessment of the project using the Biodiversity Assessment Method (BAM) is not required. A Biodiversity Development Assessment Report (BDAR) is not required. Offsetting of impacts under the Biodiversity Offsets Scheme (BOS) is not required.

SEPP (Biodiversity Conservation) 2021 - Chapter 4 *Koala habitat protection 2021* is relevant to the subject land and Part 4.2 *Development control of koala habitats* applies. The development would have a low or no impact on Koalas or Koala habitat. The subject land does not contain core koala habitat. Council may grant consent to the development application.

Local

The proposed development is consistent with the biodiversity conservation provisions of GMLEP (2009).

APPENDIX 1

Vegetation data (recorded by Daniel Clarke on 30th September 2021 and 26th February 2026).

Description of the subject property (September 2021):

- Vegetation on the site consists mainly of grassland with very few trees present.
- The highest concentration of trees is in the north of the site, proximate to the existing dwelling. This area also contained patches of regenerating saplings.
- Native canopy trees identified were *Eucalyptus amplifolia* (Cabbage Gum) and *Eucalyptus bridgesiana* (Apple Box). Stands of *Pinus radiata* (Radiata Pine) occur near the existing dwelling.
- Grassland areas were generally dominated by exotic species. The treed areas in the north of the site contained patches of groundcover with at least 15% cover of native grasses, including *Austrostipa bigeniculata, Sporobolus creber* and *Chloris truncata.* Mapping of native cover is complicated by seasonal variation, so a conservative approach was taken assuming that native cover will increase through spring and into summer.
- Grasslands were typically dominated by weed species *Dactylis glomerata* (Crowsfoot Grass), *Avena barbata* (Oats Grass), cover crops of *Hordeum leporinum* (barley Grass) and *Lolium rigidum* (Wimmera Ryegrass), *Trifolium subterraneum* (Subterranean Clover), *Plantago lanceolata* (Common Plantain), *Festuca pratensis* (Meadow Fescue), *Bromus molliformis* (Soft Brome) and *Eleusine indica* (Crowsfoot Grass). The woody weed *Lycium ferocissimum* (African Boxthorn) was also prolific in most areas.
- No threatened flora species were recorded within the subject land and it is considered unlikely that any would occur within the subject land.
- One sapling identified as potentially the threatened *Eucalyptus macarthurii* or *Eucalyptus aggregata* was sighted approximately 20m to the east of the Highway intersection (refer to Figure 5B within the main report).

Observation Points:

Observation Point: 1 GPS: 755266, 6153135	
Natives: *Einadia polygonoides*	Exotic / Non-local natives **Avena barbata* **Lycium ferocissimum* **Plantago lanceolata* **Phalaris aquatica* **Hordeum leporinum* **Dactylis glomerata*
Comments: Patch of exotic groundlayer. Some native groundcover twining through African Boxthorn	
Observation Point: 2 GPS: 755295, 6153148	
Natives:	Exotic / Non-local natives

Einadia polygonoides	**Avena barbata* **Lycium ferocissimum* **Plantago lanceolata* **Phalaris aquatica* **Hordeum leporinum*
Comments: Patch of exotic groundlayer. Some native groundcover twining through African Boxthorn	
Observation Point: 3 GPS: 755353, 6153162	
Natives: None observed	Exotic / Non-local natives **Plantago lanceolata* **Festuca pratensis* **Eleusine indica* **Lolium rigidum* **Trifolium subterraneum* **Avena barbata* **Hordeum leporinum* **Lycium ferocissimum* **Phalaris aquatica* **Bromus molliformis*
Comments: Patch of exotic groundlayer	
Observation Point: 4 GPS: 755392, 6153175	
Natives: *Panicum effusum* *Austrostipa bigeniculata*	Exotic / Non-local natives **Plantago lanceolata* **Festuca pratensis* **Eleusine indica* **Lolium rigidum* **Sisymbrium irio* **Bromus molliformis*
Comments: Mostly exotic grassland. Native grass about 5% cover.	
Observation Point: 5 GPS: 755435, 6153188	
Natives: *Austrostipa bigeniculata*	Exotic / Non-local natives **Plantago lanceolata* **Festuca pratensis* **Eleusine indica* **Sisymbrium irio* **Dactylis glomerata* **Trifolium subterraneum* **Bromus molliformis* **Echinochloa esculenta*
Comments: Mostly exotic patch – native groundlayer 5%	
Observation Point: 6 GPS: 755449, 6153231	
Natives: *Panicum effusum*	Exotic / Non-local natives **Plantago lanceolata*

Chloris truncata	**Festuca pratensis*
Sporobolus creber	**Eleusine indica*
Austrostipa bigeniculata	**Lolium rigidum*
Comments: Patch close to first dam. Native grass cover about 5%	

Observation Point: 7	
GPS: 755480, 6153229	
Natives:	Exotic / Non-local natives
#Acacia floribunda	**Lycium ferocissimum*
#Callistemon rigidus	**Lolium perenne*
#Acacia rubida	**Dactylis glomerata*
#Melaleuca thymifolia?	
#Acacia elongata	
Austrostipa bigeniculata	
Panicum effusum	
Comments: Planted local and non-local native shrubs in 3 m wide corridor. Native grass cover about 5%	

Observation Point: 8	
GPS: 755504, 6153178	
Natives:	Exotic / Non-local natives
Eucalyptus amplifolia	**Lolium perenne*
Bothriochloa macra	**Dactylis glomerata*
Cassinia sifton	**Nassella trichotoma*
Atriplex semibaccata	**Lycium ferocissimum*
Rytidosperma pilosum	**Plantago lanceolata*
Austrostipa scabra	**Trifolium subterraneum*
Comments: Isolated *Eucalyptus amplifolia* on creekline. Substantial native component along creek area.	

Observation Point: 9	
GPS: 755501, 6153278	
Natives:	Exotic / Non-local natives
Panicum effusum	**Lolium perenne*
Austrostipa bigeniculata	**Dactylis glomerata*
Chrysocephalum apiculatum	**Nassella trichotoma*
Bothriochloa macra	**Lycium ferocissimum*
	**Avena barbata*
Comments: Native grass cover at least 15% along creekline.	

Observation Point: 10	
GPS: 755496, 6153296	
Natives:	Exotic / Non-local natives
Panicum effusum	**Lolium perenne*
Austrostipa bigeniculata	**Dactylis glomerata*
Eucalyptus amplifolia (across creek)	**Nassella trichotoma*
	**Lycium ferocissimum*
	**Hypericum perforatum*
	**Hypochaeris radicata*
Comments: Area adjoining creek to main dam. Native grass cover still around 20%.	

Observation Point: 11

GPS: 755551, 6153361

Natives:	Exotic / Non-local natives
Chloris truncata	**Eleusine indica*
Austrostipa bigeniculata	**Lolium perenne*
Juncus usitatus	**Trifolium subterraneum*
	**Hordeum leporinum*
	**Phalaris aquatica*
	**Dactylis glomerata*
	**Plantago lanceolata*

Comments: On fringe of main dam. Fringing strip of *Juncus usitatus* – native grass cover decreasing otherwise.

Observation Point: 12
GPS: 755587, 6153329

Natives:	Exotic / Non-local natives
Chloris truncata	**Eleusine indica*
Austrostipa bigeniculata	**Lolium perenne*
	**Trifolium subterraneum*
	**Hordeum leporinum*
	**Lycium ferocissimum*
	**Dactylis glomerata*
	**Plantago lanceolata*

Comments: Patch of exotic grass. Native cover less than 5%

Observation Point: 13
GPS: 755619, 6153264

Natives:	Exotic / Non-local natives
Eucalyptus amplifolia	**Eleusine indica*
Austrostipa bigeniculata	**Lolium perenne*
Sporobolus creber	**Trifolium subterraneum*
Panicum effusum	**Hordeum leporinum*
	**Lycium ferocissimum*
	**Dactylis glomerata*
	**Plantago lanceolata*

Comments: Isolated *Eucalyptus amplifolia* and a strip of native grass on raised bund at 15% cover

Observation Point: 14
GPS: 755675, 6153226

Natives:	Exotic / Non-local natives
Chloris truncata	**Eleusine indica*
	**Lolium perenne*
	**Trifolium subterraneum*
	**Hordeum leporinum*
	**Lycium ferocissimum*
	**Dactylis glomerata*
	**Festuca pratensis*
	**Plantago lanceolata*

Comments: Mostly exotic grass – very low native cover.

Observation Point: 15

GPS: 755764, 6153220

Natives:	Exotic / Non-local natives
Austrostipa bigeniculata	**Eleusine indica*
	**Lolium perenne*
	**Trifolium subterraneum*
	**Hordeum leporinum*
	**Lycium ferocissimum*
	**Bromus catharticus*
	**Bromus molliformis*

Comments: Mostly exotic grass. Very minor native component

Observation Point: 16
GPS: 755815, 6153218

Natives:	Exotic / Non-local natives
None observed	**Nassella trichotoma*
	**Eleusine indica*
	**Lolium perenne*
	**Trifolium subterraneum*
	**Hordeum leporinum*
	**Plantago lanceolata*
	**Dactylis glomerata*

Comments: No native species recorded. Patch of exotic grass

Observation Point: 17
GPS: 755842, 6153232

Natives:	Exotic / Non-local natives
Austrostipa bigeniculata	**Lolium rigidum*
Juncus usitatus	**Plantago lanceolata*
	**Eleusine indica*

Comments: Fringe of *Juncus usitatus* around dam on southern, western and eastern sides - reaching 10% cover.

Observation Point: 18
GPS: 755893, 6153213

Natives:	Exotic / Non-local natives
Austrostipa bigeniculata	**Trifolium subterraneum*
Juncus usitatus	**Plantago lanceolata*
	**Bromus molliformis*
	**Dactylis glomerata*
	**Eleusine indica*

Comments: Small depression which may be an abandoned dam or filled in. Substantial *Juncus usitatus* >15% cover.

Observation Point: 19
GPS: 755837, 6153199

Natives:	Exotic / Non-local natives
Austrostipa bigeniculata	**Trifolium subterraneum*
	**Plantago lanceolata*
	**Lycium ferocissimum*

Comments: Patch of native grassland <15% cover.

Observation Point: 20 GPS: 755951, 6153184	
Natives: *Chloris truncata* *Austrostipa bigeniculata*	Exotic / Non-local natives **Dactylis glomerata* **Trifolium subterraneum* **Plantago lanceolata* **Eleusine indica*
Comments: Mainly exotic groundlayer. Native cover <10%.	
Observation Point: 21 GPS: 756017, 6153192	
Natives: *Panicum effusum* *Austrostipa bigeniculata*	Exotic / Non-local natives **Nassella trichotoma* **Trifolium subterraneum* **Lolium rigidum* **Lycium ferocissimum* **Phalaris aqautica*
Comments: 5% cover native grasses. Exotic groundlayer.	
Observation Point: 22 GPS: 756083, 6153170	
Natives: None observed	Exotic / Non-local natives **Dactylis glomerata* **Eleusine indica* **Bromus catharticus* **Hordeum leporinum* **Phalaris aquatica* **Trifolium subterraneum*
Comments: No native component	
Observation Point: 23 GPS: 756155, 6153135	
Natives: None observed	Exotic / Non-local natives **Avena barbata* **Plantago lanceolata* **Eleusine indica* **Bromus catharticus* **Hordeum leporinum* **Lolium rigidum* **Lycium ferocissimum* **Phalaris aquatica* **Echinochloa esculenta*
Comments: Patch of exotic groundlayer.	
Observation Point: 24 GPS: 756127, 6153222	
Natives: None observed	Exotic / Non-local natives **Dactylis glomerata* **Plantago lanceolata*

	**Eleusine indica* **Bromus catharticus* **Hordeum leporinum* **Lolium rigidum* **Sisymbrium irio* **Trifolium subterraneum*
Comments: Patch of exotic groundlayer	
Observation Point: 25 GPS: 756108, 6153326	
Natives: *Austrostipa bigeniculata*	Exotic / Non-local natives **Dactylis glomerata* **Plantago lanceolata* **Eleusine indica* **Bromus catharticus* **Hordeum leporinum* **Arctotheca calendula* **Rumex acetosella* **Trifolium subterraneum*
Comments: Patch of exotic groundlayer. Native cover <1%	
Observation Point: 26 GPS: 756120, 6153422	
Natives: None observed	Exotic / Non-local natives **Dactylis glomerata* **Bromus catharticus* **Hordeum leporinum* **Lolium rigidum* **Nassella trichotoma* **Phalaris aquatica*
Comments: Patch of exotic groundlayer.	
Observation Point: 27 GPS: 756032, 6153463	
Natives: *Austrostipa bigeniculata* *Sporobolus creber*	Exotic / Non-local natives **Dactylis glomerata* **Plantago lanceolata* **Eleusine indica* **Bromus molliformis* **Hordeum leporinum* **Lolium rigidum* **Rumex acetosella* **Phalaris aquatica*
Comments: Patch dominated by exotics. Very minor native groundlayer <5%.	
Observation Point: 28 GPS: 755934, 6153481	
Natives: None observed	Exotic / Non-local natives **Dactylis glomerata* **Plantago lanceolata*

	**Eleusine indica* **Bromus molliformis*
Comments: Exotic groundlayer	
Observation Point: 29 GPS: 755849, 6153499	
Natives: *Eucalyptus bridgesiana* *Atriplex semibaccata*	Exotic / Non-local natives **Lycium ferocissimum* **Bromus molliformis* **Hordeum leporinum* **Trifolium subterraneum* **Lolium rigidum*
Comments: Single *Eucalyptus bridgesiana* on edge of paddock	
Observation Point: 30 GPS: 755792, 6153523	
Natives: *Austrostipa bigeniculata*	Exotic / Non-local natives **Bromus molliformis* **Hordeum leporinum* **Trifolium subterraneum* **Phalaris aquatica* **Lolium rigidum*
Comments: Patch at junction of gates. Mainly exotic groundlayer. Native cover <5%	
Observation Point: 31 GPS: 755695, 6153533	
Natives: None observed	Exotic / Non-local natives **Populus nigra* **Rumex acetosella* **Bromus molliformis* **Hordeum leporinum* **Trifolium subterraneum* **Eleusine indica* **Dactylis glomerata*
Comments: Planted row of Poplars with groundlayer dominated by exotic species.	
Observation Point: 32 GPS: 755676, 6153474	
Natives: *Cassinia sifton* *Chloris truncata* *Austrostipa bigeniculata* *Sporobolus creber*	Exotic / Non-local natives **Hypericum perforatum* **Bromus molliformis* **Hordeum leporinum* **Trifolium subterraneum* **Phalaris aquatica* **Eleusine indica* **Salix babylonica*

Comments: Area of dam system in north of site. Not accessible due to sturdy barbed-wire fence. 10% native grass cover in some areas.

Observation Point: 33
GPS: 755609, 6153536

Natives:	Exotic / Non-local natives
Sporobolus creber	**Lolium rigidum*
Chloris truncata	**Bromus molliformis*
Austrostipa bigeniculata	**Hordeum leporinum*
	**Rumex acetosella*
	**Trifolium subterraneum*
	**Phalaris aquatica*
	**Eleusine indica*

Comments: Along northern boundary. Native grasses with about 5% cover.

Observation Point: 34
GPS: 755522, 6153565

Natives:	Exotic / Non-local natives
Typha sp.	**Salix babylonica*
Austrostipa bigeniculata	**Rubus anglocandicans*
	**Eleusine indica*
	**Dactylis glomerata*
	**Plantago lanceolata*

Comments: Planted willow around dam. No major native groundlayer. Fringing edge of native sedges and Typha. Not accessible due to sturdy barbed-wire fence

Observation Point: 35
GPS755512, 6153561

Natives:	Exotic / Non-local natives
None observed	**Salix babylonica*
	**Rubus anglocandicans*
	**Dactylis glomerata*
	**Lycium ferocissimum*

Comments: Degraded area near and west of major dam system (towards dwelling house). Isolated willow trees and blackberry infestation. Minimal native groundlayer.

Observation Point: 36
GPS: 755465, 6153557

Natives:	Exotic / Non-local natives
Eucalyptus amplifolia	**Lolium rigidum*
	**Bromus molliformis*
	**Hordeum leporinum*
	**Dactylis glomerata*
	**Trifolium subterraneum*

Comments: Area of regenerating *Eucalyptus amplifolia* with a stand of Radiata Pines (north of dwelling house). Highly degraded groundlayer.

Observation Point: 37
GPS: 755419, 6153564

Natives:	Exotic / Non-local natives

Eucalyptus amplifolia	**Lolium perenne* **Avena barbata* **Hordeum leporinum* **Dactylis glomerata* **Lycium ferocissimum* **Cupressus sempervirens* (planted)
Comments: Regenerating Eucalyptus amplifolia in north-west corner of site with substantial soil disturbance.	
Observation Point: 38 GPS: 755385, 6153545	
Natives:	Exotic / Non-local natives
Eucalyptus amplifolia	**Lycium ferocissimum* **Avena barbata* **Hordeum leporinum* **Bromus molliformis* **Dactylis glomerata* **Rubus anglocandicans*
Comments: Some planted pine trees with stands and saplings of *Eucalyptus amplifolia* in north-west area of site (north of dwelling house). Extensive soil disturbance	
Observation Point: 39 GPS: 755475, 6153495	
Natives:	Exotic / Non-local natives
Eucalyptus amplifolia	**Lolium rigidum* **Arctotheca calendula* **Hordeum leporinum* **Hypochaeris radicata* **Trifolium subterraneum*
Comments: Exotic lawn area on east side of dwelling house. One *Eucalyptus amplifolia* to right	
Observation Point: 40 GPS: 755459, 6153362	
Natives:	Exotic / Non-local natives
Austrostipa bigeniculata *Eucalyptus amplifolia*	**Dactylis glomerata* **Plantgo lanceolata* **Hordeum leporinum* **Populus alba*
Comments: Stand of *Populus alba* on west side of large dam. Native grasses with 5% cover. One *Eucalyptus amplifolia* at southern tip.	
Observation Point: 41 GPS: 755368, 6153289	
Natives:	Exotic / Non-local natives
Austrostipa bigeniculata *Panicum effusum*	**Festuca pratensis* **Plantgo lanceolata* **Hordeum leporinum* **Lolium rigidum* **Eleusine indica*
Comments: Mostly exotic groundlayer – Native grasses with 5% cover.	

APPENDIX 2

Fauna species recorded in the study area and habitats present within the development site. Recorded by Rebecca Hogan (6th October 2021) and Lesryk Environmental (19th October 2021).

Specific resources within the development site:

Habitat Features:	
Hollow-bearing trees	Two HBTs within development site: * Tree 6 – live tree, 8m tall, 1 hollow 10cm diameter * Tree 8 – live tree, 8m tall, 1 hollow <5cm diameter
Large trees	No large native trees.
Large stags	No
Logs, fallen debris	No
Mistletoe	No
Casuarina or Allocasuarina spp	No
Termite mounds	No
Water	Several small dams within the site, most of which do not contain wetland vegetation and would be of limited habitat value. Nearby modified riparian corridor with moderate sized dams providing good habitat.
Caves, culverts etc	No
Surface rock	No
Other	No

Signs of fauna:	
Diggings	No
Scratches/chews on trees	No
Scats	No
Burrows/dens	No
Nests	No
Chewed cones	No
Other	No

Species recorded in the study area

Key	
Status	
*	Introduced species
V	Species listed as Vulnerable under the BC Act

Status	Common Name	Scientific Name	Detection method
	AMPHIBIANS		
	Spotted Grass Frog	*Limnodynastes tasmaniensis*	Heard Calling
	Eastern Sign-bearing Froglet	*Crinia parinsignifera*	Heard Calling
	Common Eastern Froglet	*Crinia signifera*	Heard Calling
	REPTILES		
	Eastern Snake-necked Turtle	*Chelodina longicollis*	Observed
	BIRDS		
	Australian Wood Duck	*Chenonetta jubata*	Observed
	Australasian Grebe	*Tachybaptus novaehollandiae*	Observed
	Eurasian Coot	*Fulica atra*	Observed
	Crested Pigeon	*Ocyphaps lophotes*	Observed
	Galah	*Eolophus roseicapilla*	Heard
	Crimson Rosella	*Platycercus elegans*	Observed
	Red-rumped Parrot	*Psephotus haematonotus*	Observed
	Sacred Kingfisher	*Todiramphus sanctus*	Observed
	Yellow-rumped Thornbill	*Acanthiza chrysorrhoa*	Observed
	Noisy Miner	*Manorina melanocephala*	Observed
	Australian Magpie	*Cracticus tibicen*	Observed
	Australian Raven	*Corvus coronoides*	Observed
	Willie Wagtail	*Rhipidura leucophrys*	Observed
	Magpie-lark	*Grallina cyanoleuca*	Observed
*	Common Starling	*Sturnus vulgaris*	Observed
*	Common Myna	*Sturnus tristis*	Observed
	Australasian Pipit	*Anthus naovaeseelandiae*	Observed

APPENDIX 3

Planning Secretary's Environmental Assessment Requirements (SEAR) 2038

Requirements	Comment	Reference
DPHI Secretary's EARs Biodiversity		
Accurate predictions of any vegetation clearing on site or for any road upgrades.	Impacts assessed through overlay of development site plans on native vegetation maps and aerial imagery.	Figure 2.
A detailed assessment of all potential direct and indirect impacts on any threatened species, populations, endangered ecological communities or their habitats, groundwater dependent ecosystems and any potential for offset requirements.	Discussion of direct and indirect impacts. Test of significance applied to all relevant threatened species and their habitats. GDEs are addressed in the native vegetation description, and as a Prescribed Impact. Offsets not required under the BOS. Compensatory replacement of native trees and vegetation has been incorporated into the separate Landscape Masterplan (Tetras Landscape Architects).	Ch 4.1 Ch 4.2 Ch 3.2.2, Ch 3.5 Ch 4.2.5
Addressing any potential impacts from proposed facilitatory road upgrades on roadside vegetation, including on threatened bird species such as the Dusky Woodswallow and the Little Eagle.	Discussion of direct and indirect impacts. Test of significance applied to all threatened species including Dusky Woodswallow and Little Eagle.	Ch 4.1.2, Ch 4.1.3, Ch 4.2.4
Details of weed management during construction and operation in accordance with existing State, regional or local weed management plans or strategies.	Measures to minimise indirect impacts (including risk of spread of diseases and weeds) are set out in Table 6. No weed management plans are known to be of specific relevance to the property.	Ch 4.1.3
A detailed description of the measures to avoid, minimise, mitigate and/or offset biodiversity impacts.	Utilises existing cleared areas, retains mature native trees, avoids impacts on streams and waterbodies.	Ch 4.1.1
DCCEEW CPHR EARs C. Biodiversity		
1.A – whether the development is to be carried out in a declared AOBV	It is not.	Ch 4.2.1
1.B – whether the development would exceed the BOS thresholds.	It would not. No part of the subject land is included on the Biodiversity Values Map. The area of clearing criteria is 0.5 hectares. The proposed development would directly impact	Ch 4.2.2 & Ch 4.2.3

Requirements	Comment	Reference
	approximately 0.16 hectares of native vegetation.	
1.C – whether the development is likely to significantly affect threatened species or ecological communities:	It would not. The test of significance has been applied to each relevant species.	Ch 4.2.4
i. Field survey in accordance with relevant guidelines	Details set out in relevant chapters.	Ch 2.1, Ch 2.3, Ch 2.4, Ch 2.5
ii. Information required to include:	-	-
description and mapping of the study area	Written description with relevant features shown on maps.	Ch 1.2, Figures 1, 3A, 3B & 4
description of survey methods & weather	Details set out in relevant chapters.	Ch 2.3, Ch 2.4, Ch 2.5
qualifications and experience of project team	Set out in a table on the inside cover.	Page i
identification of relevant threatened biota	Using the BAM, Bionet vegetation classification, and Bionet sightings.	Ch 3.2.3, Ch 3.3.1
description of likely impacts	Loss of native vegetation, indirect impacts on retained trees and waterbodies.	Ch 1.3, Ch 4.1.2, Ch 4.1.3, Ch 3.5
identification of avoidance, mitigation and management measures	Utilises existing cleared areas, retains mature native trees, avoids impacts on streams and waterbodies.	Ch 4.1.1
description of residual impacts	Loss of 4 native trees (canopy 0.02ha) and disturbance/loss of native grassland (0.14ha).	Ch 4.1.2
iii. Threatened species test of significance.	Set out with separate reference to each species.	Ch 4.2.4
2. – whether a BDAR is required.	The Biodiversity Offset Scheme does not apply. Further assessment of the project using the Biodiversity Assessment Method (BAM) is not required. A Biodiversity Development Assessment Report (BDAR) is not required. Offsetting of impacts under the Biodiversity Offsets Scheme (BOS) is not required.	Ch 4.2.5
3. – if the development is unlikely to significantly affect threatened species:	This requirement applies to the project.	-
a. design to avoid and minimise impacts	Utilises existing cleared areas, retains mature native trees, avoids impacts on streams and waterbodies.	Ch 4.1.1

Requirements	Comment	Reference
b. biodiversity offset package	Offsets not required under the BOS. Compensatory replacement of native trees and vegetation has been incorporated into the Landscape Masterplan (Tetras Landscape Architects).	Separate document.
Note – EPBC Act referral	The proposed development would not be likely to impose a significant impact upon any matter of *National Environmental Significance* listed under the Commonwealth EPBC Act. On this basis, there is no requirement to refer the project to the Commonwealth Minister for Environment.	Ch 4.3.