Biodiversity Development Assessment Report

Subdivision of 18-50 Mayne Drive, Westdale

Report prepared for:

Brightlands Living

Prepared by Cedar Ecology Pty Ltd

Version 1 – 10th March 2025.

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Certification

As required under *Section 6.15 Currency of biodiversity assessment report* of the NSW BC Act, I certify this BDAR (Case 00051964) has been prepared in accordance with requirements of (and information provided under) the Biodiversity Assessment Method 2020 as at 10/03/2025.

NOTE: This BDAR must be submitted must be within 14 days of the date shown on the finalised credit report generated using the BAM Calculator (refer to Appendix D).

Executive Summary

This Biodiversity Development Assessment Report (BDAR) has been prepared for [redacted] for a residential subdivision at 18-50 Mayne Drive, Westdale within the Tamworth Local Government Area (LGA). The BDAR has been prepared to address the requirements of the *Biodiversity Conservation Act 2016* (BC Act).

The Site

The site occurs off Mayne Drive in Westdale and is approximately 5 km to the south west of the Tamworth CBD. It is an irregular shaped parcel of land that includes a single dwelling and associated infrastructure. Vehicular access to the site is provided by a gravel road which extends south of the existing Mayne Drive roadway and lies within a 20 m wide easement along the eastern side boundary of the access handle. The site has been historically used for the grazing of livestock (cattle and horses) and small-scale cropping (fodder). Horses are currently grazed on the property which includes a network of temporary and permanent fencing and a small farm dam.

A first order tributary of Timbumburi Creek is mapped traversing a central portion of the site in a west to east direction. The mapped waterway does not include any defined bed or banks and is likely to act as an ephemeral drainage line after large rainfall events.

The Proposal

Approval is sought for subdivision of the site into 47 residential lots with associated road and service infrastructure. The existing house will be contained within one of the proposed new lots. The application does not seek approval for the design of any built form on the new lots. Any new building on any of the new lots will require the submission of a separate DA/ CDC application.

Native vegetation clearing facilitated by the subdivision of the site has been assessed by this BDAR and will be offset by the retirement of biodiversity credits.

Native Vegetation Overview

Vegetation assessment was completed at the site in accordance with the Biodiversity Assessment Method (BAM). One native Plant Community Types PCTs was identified on the site*; PCT 599 - Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion*. The following three vegetation zones were identified on the site:

- Zone_1_Modified A (large trees) – large mature trees on the site with a predominantly exotic groundcover.
- Zone_2_Modified B (small trees) – area including scattered small mature trees on the site with a predominantly exotic groundcover.
- Zone_3_Derived – predominantly exotic grassland on the site lacking trees.

PCT 599 is representative of the *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* (Box-Gum Woodland) which is listed as a Critically Endangered Ecological Community (CEEC) under the BC Act. As there are no condition thresholds nominated for this TEC all vegetation on the site including derived grassland has been considered to be representative of this TEC.

Threatened Species Overview

In accordance with the BAM, threatened species have been assessed as predicted ecosystem credit species and/ or candidate species credit species.

- Predicted species (ecosystem credit species)
  - A total of 17 threatened fauna species have been identified as predicted ecosystem credit species associated with the development footprint.
- Candidate species (species credit species):
  - A total of 11 threatened flora species were identified as candidate flora 'species credit species' associated with the development footprint. Targeted surveys did not detect any of these species on the site.
  - A total of 6 threatened fauna species were identified as candidate fauna 'species credit species' associated with the development footprint. Targeted surveys did not detect any of these species on the site.

Impact Summary

Demonstration that the proposal has suitably avoided/ minimised biodiversity impacts in its design are provided in this BDAR. Residual impacts have been assessed in accordance with Stage 2 of the BAM (2020). The following direct impacts would occur as a result of the proposal:

- Removal of 27.03 ha of vegetation which includes:
  - 7.06 ha of PCT 599 – 'modified' condition (with small trees).
  - 19.97 ha of PCT 599 – 'derived' condition.

It is noted that the Box-Gum Woodland TEC is a Serious and Irreversible Impact (SAII) Entity. Additional information addressing this SAII entity in relation to the proposal is provided in the BDAR which confirms that a serious and irreversible impact to this species is unlikely as a result of the proposal.

Credit Requirements

Biodiversity offset obligations have been determined using the BAM-C. The proposal will require retirement of the following credits:

- 85 ecosystem credits.

The offset requirement identified by this BDAR will be satisfied either via retirement of suitable biodiversity credits available on the biodiversity credit register or payment into the Biodiversity Conservation Fund.

Other Statutory Matters

- *State Environmental Planning Policy (Biodiversity and Conservation) 2021 Chapter 4 Koala Habitat Protection*: Based on BioNET results and site investigations the site is not considered to contain core Koala habitat and impacts to Koalas and their habitats are negligible. On this basis the Policy has been satisfactorily addressed and there are no further requirements.

- *Environment Protection and Biodiversity Conservation Act 1999*: No significant impact is likely to occur as a result of the project on federally listed threatened species, TECs or other protected matters under the Act.

1. Introduction

1.1 Overview

This Biodiversity Development Assessment Report (BDAR) has been prepared for [redacted] for a residential subdivision at 18-50 Mayne Drive, Westdale within the Tamworth Local Government Area (LGA).

This BDAR has been prepared to address the requirements of the *Biodiversity Conservation Act 2016* (BC Act) for future development of the site, where clearing of native vegetation required for the proposal exceeds the Biodiversity Offset Scheme (BOS) area threshold for the site of 0.25 ha. On this basis, the BOS is triggered and a BDAR is required. The BDAR has been prepared to support a Development Application (DA) submitted to Tamworth Regional Council (TRC). Details of the project are summarised in **Table 1.1**. The project has been entered into the Biodiversity Accredited Assessor System (BAAS) as Case 00051964.

Table 1-1 Project Details

Site Details	
LGA	Tamworth
Subject lots	Lot 1 DP1017953
Site Area	Approximately 29 ha
Zoning	R2 – Low Density Residential RU4 – Primary Production Small Lots
Minimum lot size	4,000 m²
Development type	Residential subdivision

1.2 Report Terminology

The following terms are discussed throughout this report and are defined as:

- **The site**: The lot in which the proposed development occurs within.
- **Development footprint**: the area of land that is directly impacted by the proposed development, including access roads, APZs and areas used to store construction materials.
- **Locality**: the area within 10 km of the site.

1.3 Site Description

The site occurs off Mayne Drive in Westdale and is approximately 5 km to the south west of the Tamworth CBD (refer to **Illustration 1.1**).

The site as shown in detail in **Illustration 1.2** is an irregular shaped parcel of land that includes a single dwelling and associated infrastructure. Vehicular access to the site is provided by a gravel road which extends south of the existing Mayne Drive roadway and lies within a 20 m wide easement along the eastern side boundary of the access handle.

The site has been historically used for the grazing of livestock (cattle and horses) and small-scale cropping (fodder). Horses are currently grazed on the property which includes a network of temporary and permanent fencing and a small farm dam.

A first order tributary of Timbumburi Creek is mapped traversing a central portion of the site in a west to east direction. The mapped waterway does not include any defined bed or banks and is likely to act as an ephemeral drainage line after large rainfall events.

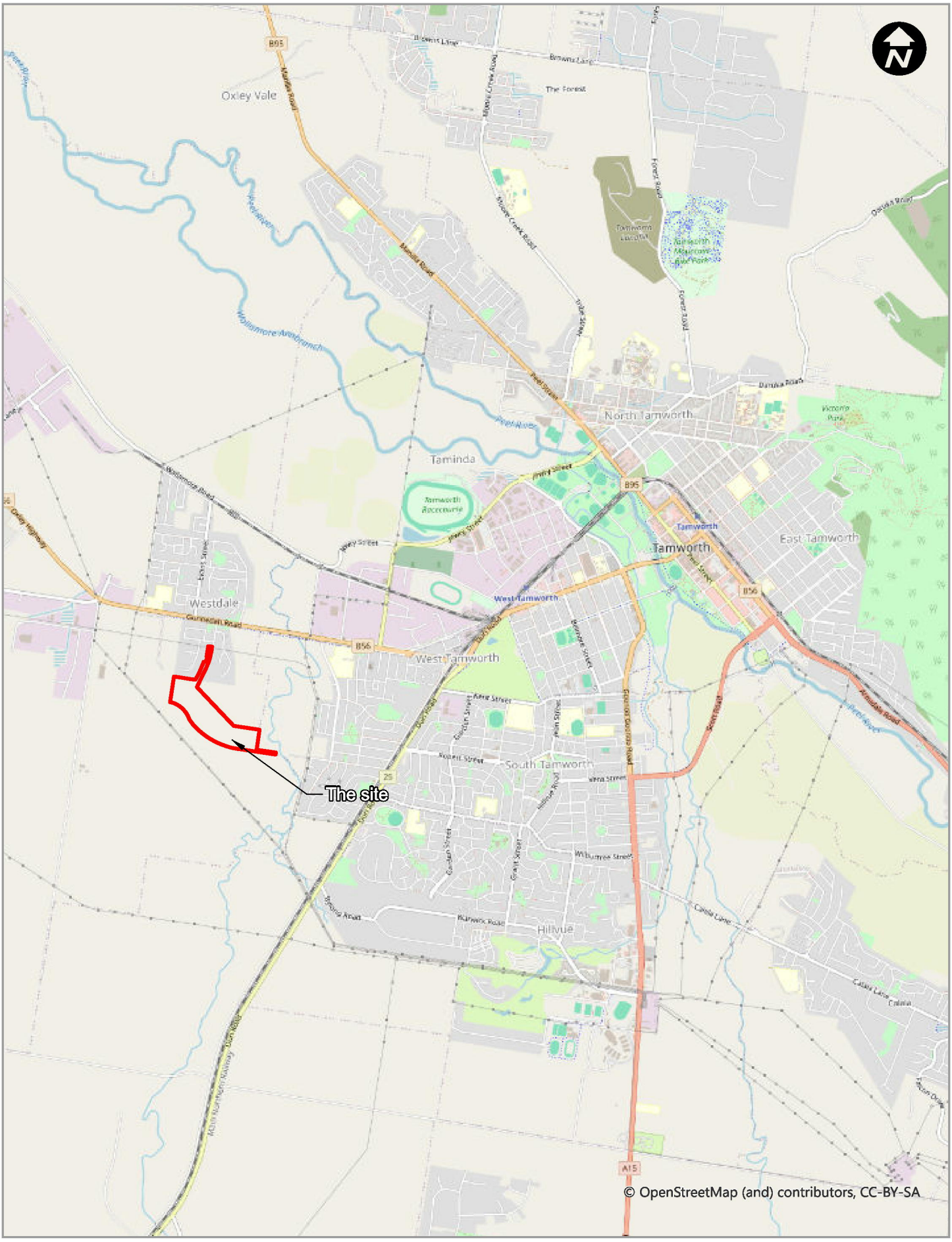
Photographs of the site are provided at **Plate 1.1** to **1.4**.

Plate 1.1 – Typical vegetation on the site including grazing land and lightly timbered areas

Plate 1.2 – Farm dam on the site

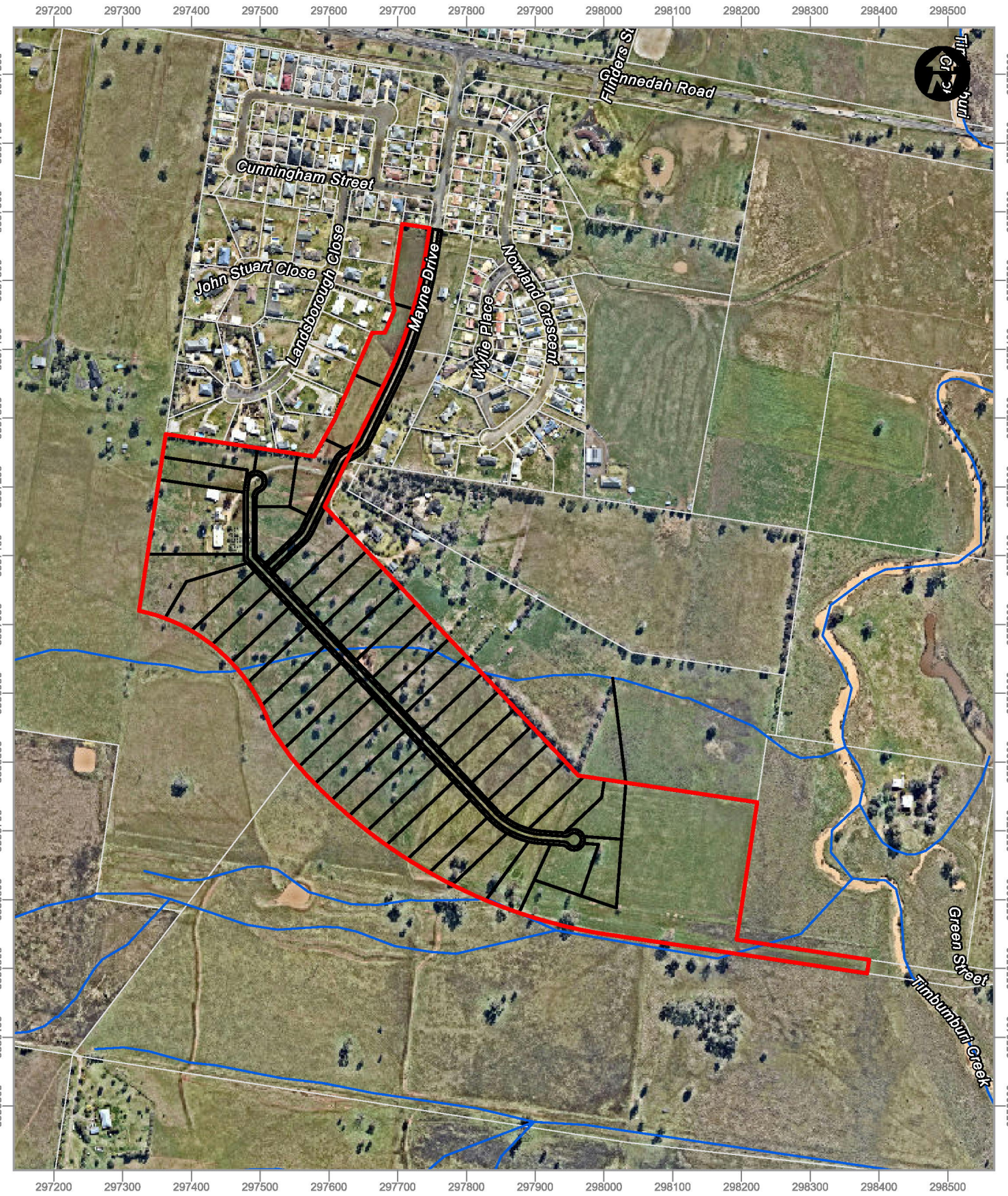
Plate 1.3 – Existing house and associated infrastructure on the site

Plate 1.4 – Driveway servicing the site from Mayne Drive



0 1 km

Site Locality - Illustration 1.1



LEGEND

- Site boundary
- Cadastre
- Watercourse
- Proposed subdivision

0 150 Metres

The Site - Illustration 1.2

[redacted]

1.4 Proposed Development

Approval is sought for subdivision of the site into 47 residential lots with associated road and service infrastructure as detailed in **Figure 1.1** and **Appendix A**. The existing house will be contained within one of the proposed new lots.

The application does not seek approval for the design of any built form on the new lots. Any new building on any of the new lots will require the submission of a separate DA/ CDC application.

Native vegetation clearing facilitated by the subdivision of the site has been assessed by this BDAR and will be offset by the retirement of biodiversity credits.

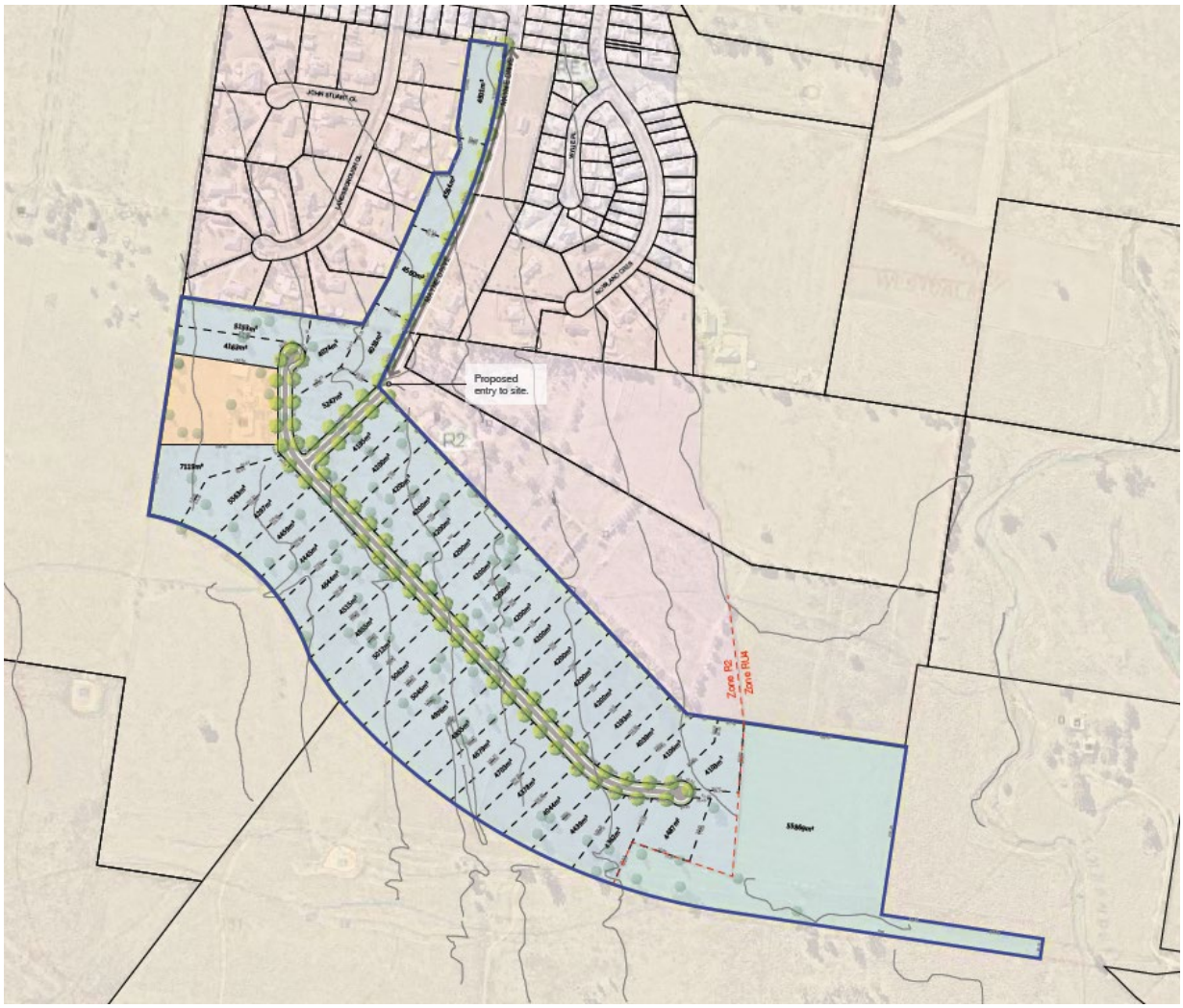


Figure 1-1 Plan of Subdivision

1.5 Personnel

The contributors to the preparation of this BDAR, their qualifications and roles are listed in **Table 1.2**. Assessors involved with the project have extensive experience in assessing native vegetation and threatened species within the Tamworth LGA including undertaking targeted surveys for candidate threatened species identified by the BAM Calculator (BAM-C) for the site. All content and fieldwork are in accordance with the Biodiversity Assessment Method 2020 (NSW Department of Planning and Environment 2020a).

Table 1-2 Personnel

[redacted]

1.6 Report Scope and Limitations

This BDAR has been prepared based on field assessment and use of the BAM-C and is based on vegetation clearing impacts and proposed development described in **Section 8**. Biodiversity credits were generated by utilising the BAM-C, which is established and managed by the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW). Data has been entered in the BAM Calculator (BAM-C) in good faith and any errors or deficiencies in the calculator results are attributed to DCCEEW. The conclusions in this report are based upon data acquired for the proposal and the environmental field surveys, therefore, they are merely indicative of the environmental condition of the site at the time of preparing the report, including the presence or otherwise of species. It should be recognised that site conditions, including the presence of threatened species, can change with time.

2. Methodology

This section provides a detailed description of the methodologies used in the preparation of this BDAR. Methodologies used included a combination of desk-based searches of relevant databases and historical records, as well as detailed field inspections of the site to identify and assess biodiversity values in accordance with Stage 1 and Stage 2 of the BAM (2020).

2.1 Information Sources

Data and resources used or consulted in this assessment include:

- The Biodiversity Assessment Method (NSW Department of Planning and Environment 2020a).
- The Biodiversity Assessment Method Operational Manual – Stage 1 (NSW Department of Planning and Environment 2020b).
- The Biodiversity Assessment Method Operational Manual – Stage 2(NSW Department of Planning and Environment 2019).
- Threatened entity surveys guidelines (amphibians, microchiropteran bats, mammals and flora and their habitat).
- BioNet Vegetation Classification (NSW Department of Planning and Environment 2023a).
- BioNet Threatened Biodiversity Data Collection (TBDC)(NSW Department of Planning and Environment 2023b).
- Biodiversity Assessment Method Calculator (BAM-C).
- BioNet Threatened Species Profiles.
- PlantNET NSW (Royal Botanic Gardens 2023).
- Biodiversity Offsets and Agreement Management System (BOAMS).

Spatial data used in this report has included data from the following sources:

- NSW Department of Finance and Services (via Six Maps).
- IBRA Regions and Subregions (Thackway & Cresswell 1995).
- NSW (Mitchell) Landscapes - Version 3.1 (Planning Industry and Environment 2016).
- Directory of Important Wetlands in Australia (Department of Climate Change Energy the Environment and Water 2023a).
- Fauna Corridors for North East NSW (Department of Planning Industry and Environment 2010).
- Important Habitat Map (BOAMS).

2.2 Database Searches

Database searches were undertaken to identify threatened flora and fauna species, populations and ecological communities, Commonwealth listed migratory species or critical habitat recorded previously or predicted to occur in the locality of the site. This allowed for known habitat characteristics to be compared with those present on the site to determine the habitat suitability for each species or population.

Records of threatened species, populations and ecological communities known or predicted to occur in the locality of the site were obtained from a range of databases as detailed in **Table 2.1**.

Table 2-1 Database Searches

Database	Search Date	Area Searched	Reference
BioNet Atlas of NSW Wildlife search tool	20/02/2025	20 km x 20 km centred on the site	(NSW Department of Planning and Environment 2024c)
EPBC Act Protected Matters Search Tool (PMST)	20/02/2025	10 km radius from the site the site	(Department of Climate Change Energy the Environment and Water 2024b)
Biodiversity Assessment Calculator (BAM-C)	20/02/2025	Based on IBRA Bioregion/ Subregions and PCT VI plot data collected and imported.	(NSW Government 2024)

2.3 Identification of Relevant Threatened Species

Relevant threatened species are those that have been assessed as having a moderate to high likelihood of occurring in the site based on desktop assessment and field assessment. Threatened species are defined as either 'ecosystem credit species' or 'species credit species' under the BAM:

- **Ecosystem credit species:** are threatened species whose occurrence can generally be predicted by vegetation surrogates and/or landscape features, or that have a low probability of detection using targeted surveys.
- **Species credit species (candidate species):** are threatened species for which vegetation surrogates and/or landscape features cannot reliably predict the likelihood of their occurrence or components of their habitat. A targeted survey or an expert report is required to confirm the presence of these species on the subject land. Targeted surveys were undertaken for candidate species as outlined in **Section 5.4.1.3** and **5.4.2.3**.

As stated in the BAM (2020) subsection 5.2.3.2, a candidate species credit species will be considered unlikely to occur on the site if:

- After carrying out a field assessment of the habitat constraints or microhabitats on the site, the assessor determines that the habitat is substantially degraded such that the species is unlikely to utilise the site; or
- An expert report that is prepared in accordance with subsection 6.5.2 states that the species is unlikely to be present on the site or specific vegetation zones.

A candidate species credit species that is not considered to have suitable habitat on the site does not require further assessment on the site (NSW Department of Planning and Environment 2020a).

2.4 Survey Dates and Weather Conditions

Survey dates and a summary of the weather conditions during the survey period is provided in **Table 2.2**.

Table 2-2 Weather Conditions During Survey Periods

Date	Temperate (C°)		Rain (mm)	Wind Maximum (direction/ speed (km/hr))
	Minimum	Maximum		
01/10/24	7.4	22.6	0.2	SE / 28
10/12/24	19.3	34.3	0	W / 31
11/12/24	16.8	33.5	0	SW / 48
12/02/25	14.7	34.7	0	WNW / 41
13/02/25	19.1	33.4	0	NNE / 35
14/02/25	21	31.7	0	N / 37

Source: Bureau of Meteorology – Automatic Weather Station (AWS) 055325 – Tamworth (Bureau of Meteorology 2025)

2.5 Vegetation Surveys

The following vegetation survey methods were undertaken for the site.

2.5.1 Mapping of Native Vegetation

The vegetation within the site was firstly assessed to a Plant Community Type (PCT) level and then aligned to a vegetation zone which is defined in the BAM as ‘an area of native vegetation on the site that is the same PCT and has a similar broad condition state’ (NSW Department of Planning and Environment 2020a).

2.5.2 Vegetation Integrity Plots

Seven vegetation integrity plots were completed in accordance with BAM (2020) and BAM Operational Manual – Stage 1 (NSW Department of Planning and Environment 2020b) to reflect the proposed design and account for vegetation impacted within the development footprint (refer to **Table 2.1**). Plot locations are shown in **Illustration 2.1** with plot data provided in **Appendix B**.

Table 2-3 Location and Orientation of Vegetation Integrity Plots Completed

Plot ID	PCT and Zone	Easting[1]	Northing[1]	Orientation
1	PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion**: Zone_1_Modified A (mature trees)**	297861	6556616	119
2	PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion**: Zone_2_Modified_B (small trees)**	297745	6556925	221
3	PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion**: Zone_2_Modified_B (small trees)**	297565	6557002	349
4	PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion**: Zone_2_Modified_B (small trees)**	297617	6557105	338
5	PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion**: Zone_3_Derived**	297828	6556838	257
6	PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion**: Zone_3_Derived**	297944	6556686	13
7	PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion**: Zone_3_Derived**	297416	6557049	71

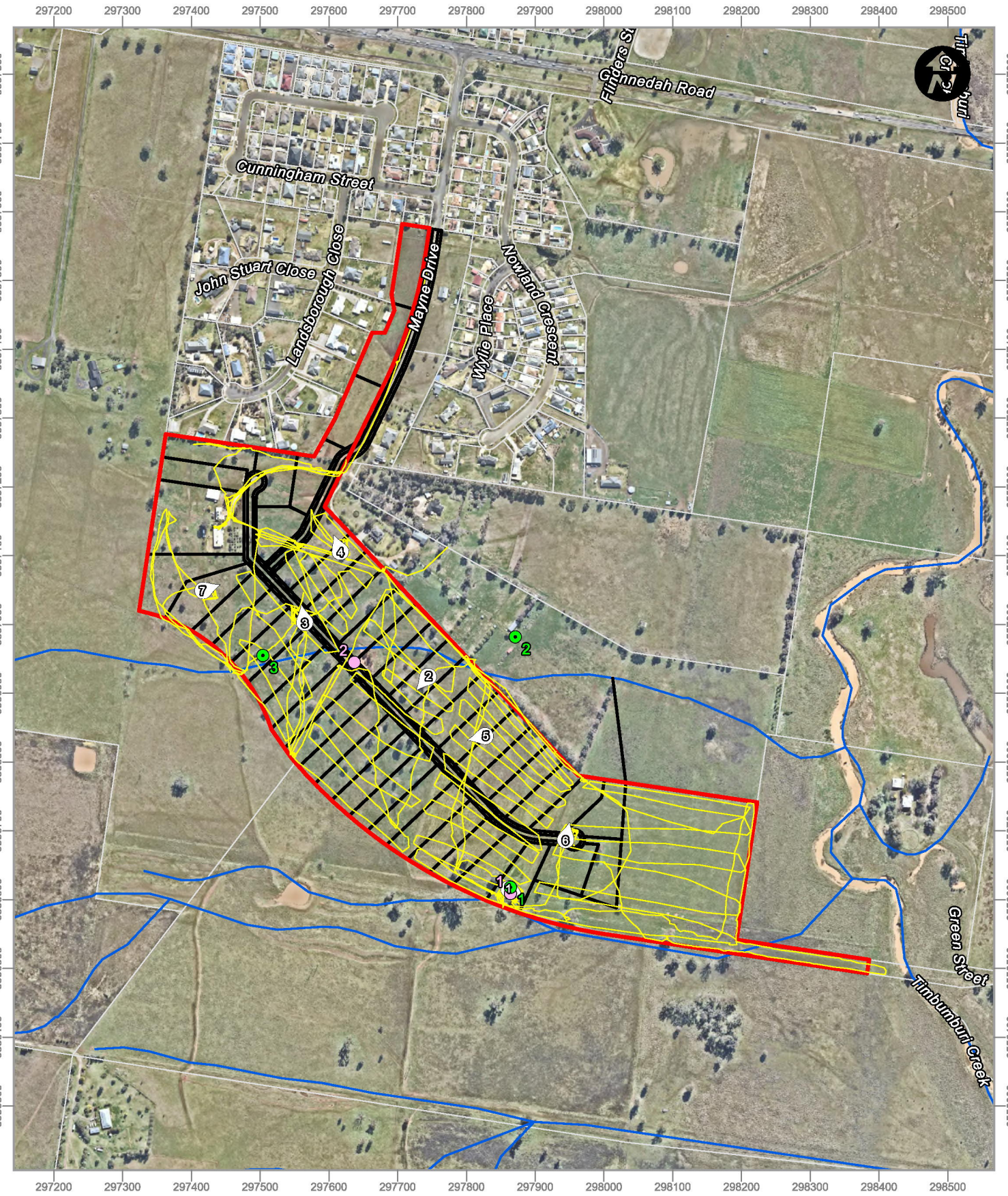
(1) GPS Co-ordinates – Zone 56.

2.6 Threatened Flora Surveys

Target surveys were undertaken for all candidate threatened flora species by completing parallel traverses over the entire site at 5-10 m spacings consistent with the methodology for surveying threatened plants (DPIE 2020). Survey effort for threatened flora surveys is shown in **Illustration 2.1**. Candidate threatened flora species, required survey timing and actual survey timing is provided in **Table 2.6** which indicates that targeted survey timing for all candidate species is compliant with BAM requirements.

Table 2-4 Candidate Threatened Flora Survey Timing

Scientific Name	Common Name	BAM Survey Timing	Survey dates
Acacia atrox	Myall Creek Wattle	All year	01/10/24 11/12/25 13/02/25 14/02/25
Calistemon pungens		Sept-Feb	
Dichanthium setosum	Bluegrass	Nov-May	
Digitaria porrecta	Finger Panic Grass	Jan-Feb	
Euphrasia arguta		Nov-March	
Homophilis belsonii	Belson's Panic	Dec-April	
Picris evae	Hawkweed	Nov-Feb	
Prasophyllum sp Wybong	-	Sept-Nov	
Swainsona sericea	Silky Swainson-pea	Nov-Feb	
Thesium australe	Austral Toadflax	Nov-Feb	
Tylophora linearis		Oct-May	



LEGEND

- Site boundary
- Cadastre
- Watercourse
- Proposed subdivision
- Threatened flora transects
- Bird survey
- Remote sensor camera
- VI plot

0 150 Metres

Plot Locations and Survey Effort - Illustration 2.1

2.7 Threatened Fauna Surveys

This section outlines the fauna survey effort completed for candidate threatened fauna species identified by the BAM-C. Surveys were undertaken in accordance with the following guidelines:

- Threatened Biodiversity Survey and Assessment Guidelines for Developments and Activities – Working Draft 2004 (Department of Environment and Conservation 2004).
- Survey Guidelines for Australia's Threatened Birds (Magrath et al. 2010)(Department of Environment Water Heritage and the Arts 2010).
- Threatened Species survey and assessment guidelines: field survey and methods for fauna-Amphibians (Department of Environment and Climate Change 2009).
- Survey guidelines for Australia's threatened frogs (Department of the Environment Water Heritage and the Arts 2010).
- NSW Survey Guide for Threatened Frogs and their habitats- NSW survey guide for the BAM (NSW Department of Planning and Environment 2020d).
- Koala (*Phascolarctos cinereus*) – Biodiversity Assessment Method Survey Guide (NSW Department of Planning and Environment 2022b).
- Threatened reptiles – Biodiversity Assessment Method survey guide (NSW Department of Planning and Environment 2022a).
- Threatened Species Profile Database (NSW Department of Planning and Environment 2022b).

2.7.1 Hollow-bearing Tree Surveys

Hollow bearing tree surveys were undertaken to identify potential breeding habitat for the Glossy Black Cockatoo. No suitable hollow-bearing trees for the subject species (hollows > 15 cm diameter and > 8m above the ground) were detected on the site. Additional searches for the species were undertaken as described in **Section 2.7.7**.

2.7.2 Stick Nest Surveys

Breeding habitat for the White-bellied Sea-eagle was targeted during stick nest surveys conducted during all site visits. Searches of all vegetation on site and immediate surrounds were undertaken for stick nests representing breeding habitat for this species.

2.7.3 Remote Cameras

Although highly marginal habitat is present on the site, the Squirrel Glider was targeted with the use of baited remote sensor cameras. Three arboreal cameras were deployed for a two-month period commencing on 11/12/2024 (refer to **Illustration 2.1**). Baits consisted of honey, peanut butter & oat bars and trees sprayed with a strong honey water mixture. The terrestrial cameras were setup following the methodology stated in Taylor *et.al* (Taylor et al. 2013).

2.7.4 Koala Surveys

As required by the *Koala BAM Survey Guideline*, targeted Koala surveys at the site included a scat and a non-scat-based method as follows:

- Searches under all eucalypts on the site were undertaken for Koala scats.
- Spotlighting surveys targeting Koalas were undertaken at the site over four nights.

2.7.5 Border Thick-tailed Gecko Surveys

Although the site comprises highly marginal Border Thick-tailed Gecko habitat, as required under the *BAM Threatened Reptile Survey Guideline* four nights of spotlighting searches were undertaken at the site in December and February. It is noted that as rocky areas (preferred habitat) are absent from the site, searches were confined to trees and around the base of trees.

2.7.6 Tusked Frog Surveys

Although highly marginal habitat for the species is present at the site (a farm dam), targeted surveys for the species were undertaken including four nights of searches and call playback around the dam in December and February.

2.7.7 Diurnal Bird Surveys

Threatened bird surveys were completed in December and February. Three 20 -minute diurnal bird surveys were completed at points shown in **Illustration 2.1** on four separate occasions. All birds were identified to the species level, either through direct observation or identification of calls. Bird surveys were completed during different times of the day but generally occurred during morning hours (5am-10am) or late afternoon (4pm-6pm). Birds were also recorded opportunistically during all other surveys. Hollow-bearing trees in proximity to the site were also monitored for the presence of nesting Glossy Black-Cockatoos over the four-day period.

BAM STAGE 1- BIODIVERSITY ASSESSMENT

3. Landscape Context

This chapter addresses the landscape context of the site in accordance with Section 3 of the BAM and provides information on a range of landscape features that occur on the site and in surrounding areas. The landscape features outlined below are used to inform the habitat suitability of the site for threatened species and the potential movement of species across the landscape.

3.1 Landscape Features

Table 3-1 Summary of the Site Landscape Features

Landscape Feature	Occurrence in the Site
IBRA bioregion	Nandewar
IBRA subregion	Peel
NSW landscape regions (Mitchell landscapes)	Tamworth – Keepit Slopes and Plains
Local Government Area (LGA)	Tamworth Regional Council
Local Land Service (LLS) region	North Coast
Botanical subregion	NNC - North Coast
Rivers, streams and estuaries	A first order tributary of Timbumburi Creek is mapped traversing a central portion of the site in a west to east direction. The mapped waterway does not include any defined bed or banks and is likely to act as an ephemeral drainage line after large rainfall events.
Important and local wetlands	No Wetlands of International Importance or Nationally Important Wetlands occur within 5 km of the site.
Connectivity features	No mapped fauna corridors occur on or near the site.
Areas containing karst, caves, crevices, cliffs, rocks or other geological features of significance	No areas containing significant geological features occur within the site.
Areas of soil hazard features	No areas of soil hazard are associated with the site.
Areas of outstanding biodiversity value	No areas of outstanding biodiversity value have been declared within the site of the Tamworth Regional Council LGA.

3.2 Native Vegetation Extent

As per the BAM methodology (Section 3.2) a buffer of 1500 m was established around the site and a calculation of native vegetation cover was derived using native vegetation mapping (NSW Department of Planning and Environment 2021) summing values of ‘tree cover’ and ‘tree cover matrix’ values.

Approximately 63.5 ha of native vegetation was identified within 1500 m of the site (within a total area of 1246.56 ha), therefore a native vegetation cover of approximately 5.1% was estimated for the purposes of the BAM-C (**Table 3.2**). Native vegetation extent is shown in **Illustration 3.3**.

Table 3-2 Native Vegetation Cover Assessment

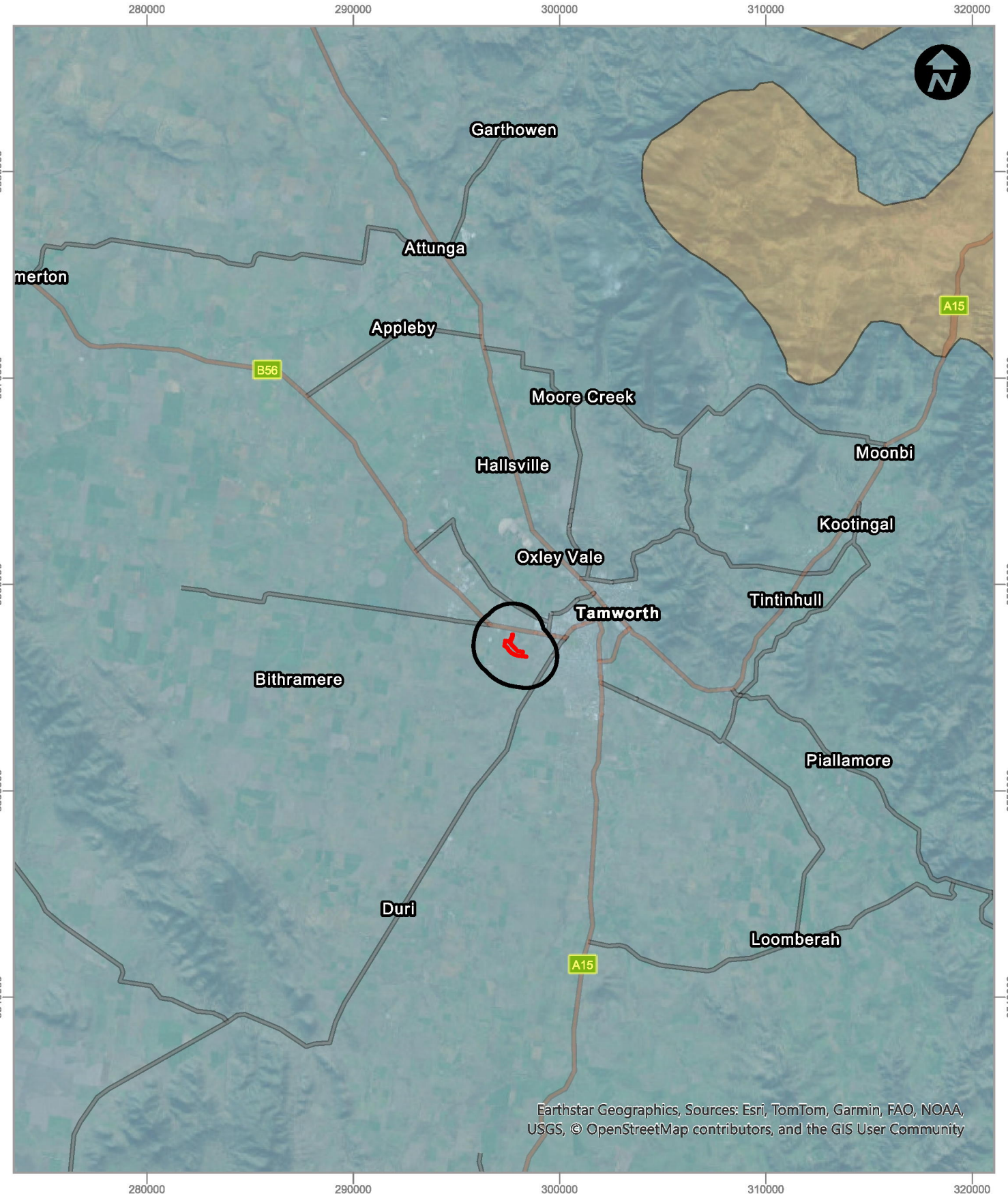
Assessment Area	Total Assessment Area (ha)	Area of Native Vegetation Cover (ha)	Native Vegetation Percentage Cover (%)	Native Vegetation Cover Class
Buffer area	1246.56	63.5	5.1%	0>30%

3.3 Patch Size

Patch size is defined under the BAM (NSW Department of Planning and Environment 2020a) as an area of native vegetation that:

- occurs on the site;
- includes native vegetation that has a gap of less than 100 m from the next area of moderate to good native vegetation (or ≤ 30 m for non-woody ecosystems); and
- patch size may extend onto adjoining land that is not part of the site.

Patch size area is assigned to each vegetation zone as a class, being < 5ha, 5-24 ha, 25-100 ha or ≥ 100 ha. A patch size class of ≥ 100 ha was assigned to all vegetation zones due to predominately good connectivity and patches having a gap of less than 100 m.



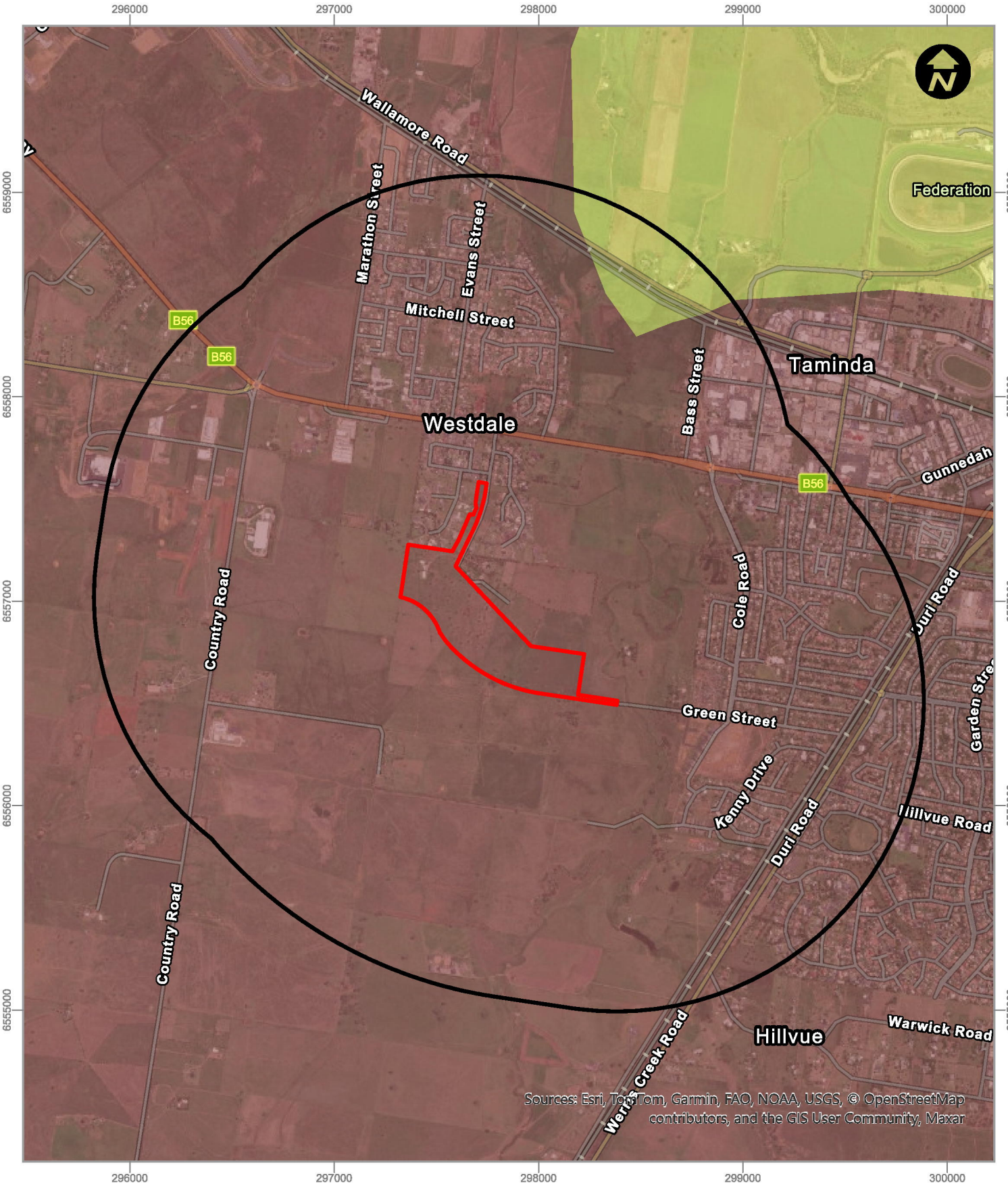
LEGEND

- Site boundary
- 1500m site buffer
- Eastern Nandewars (New England Tablelands)
- Peel (Nandewar)

0 5 km

IBRA Landscape - Illustration 3.1

[redacted]

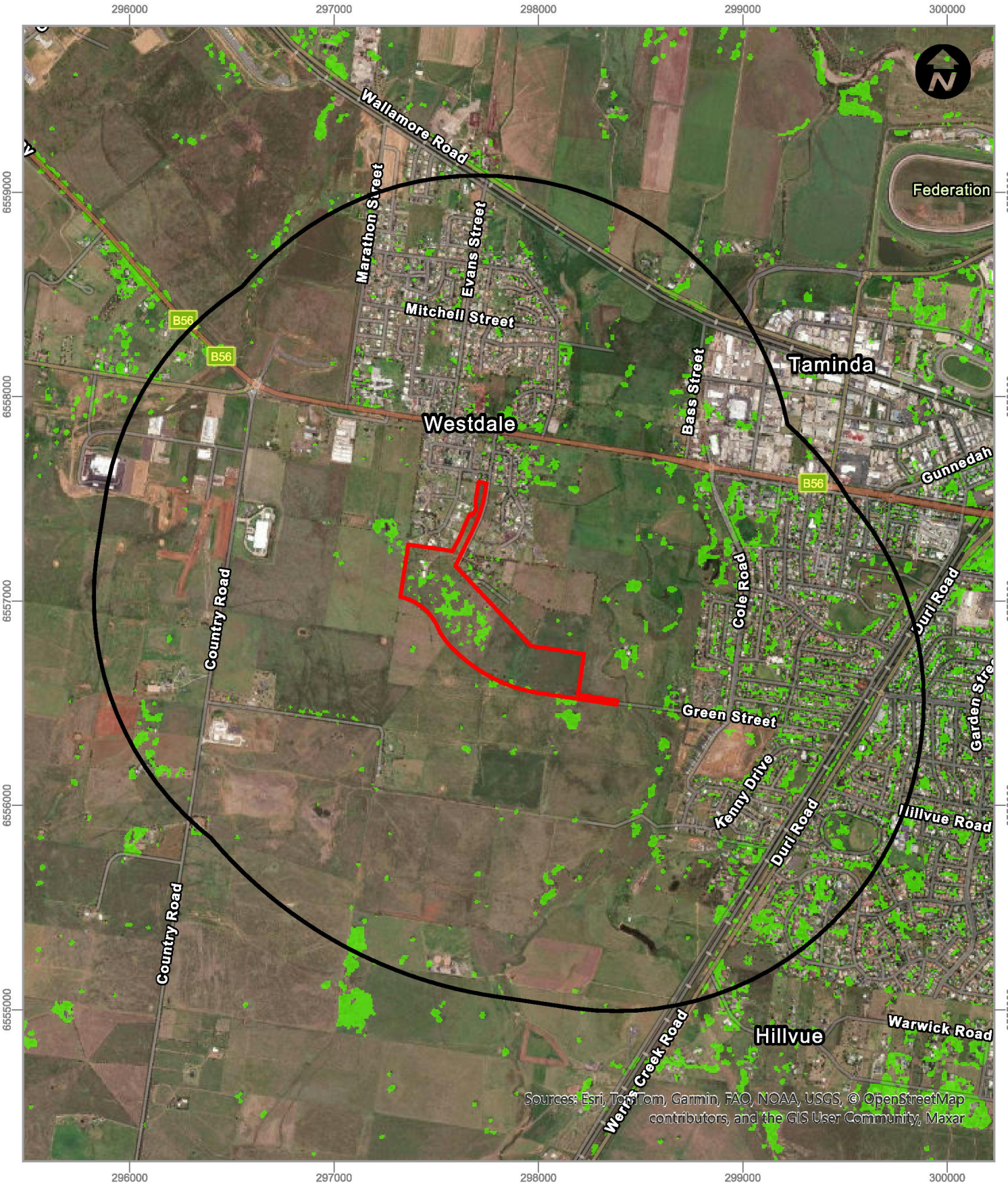


LEGEND

- Site boundary
- 1500m site buffer
- Peel Channels and Floodplain
- Tamworth - Keepit Slopes and Plains

0 500 Metres

Michell Landscapes - Illustration 3.2

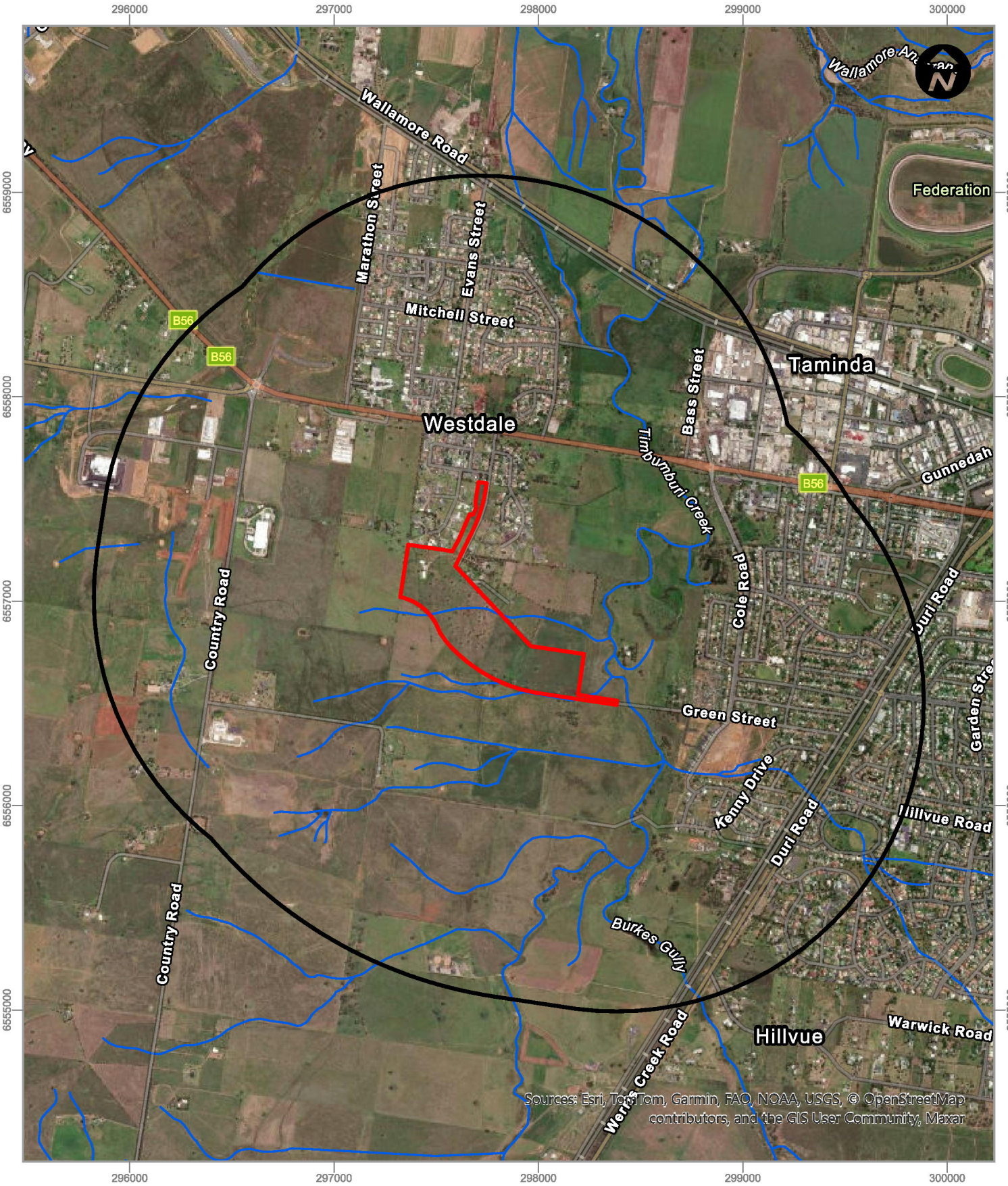


LEGEND

- Site boundary
- 1500m site buffer
- Native vegetation extent

0 500 Metres

Native Vegetation Extent - Illustration 3.3

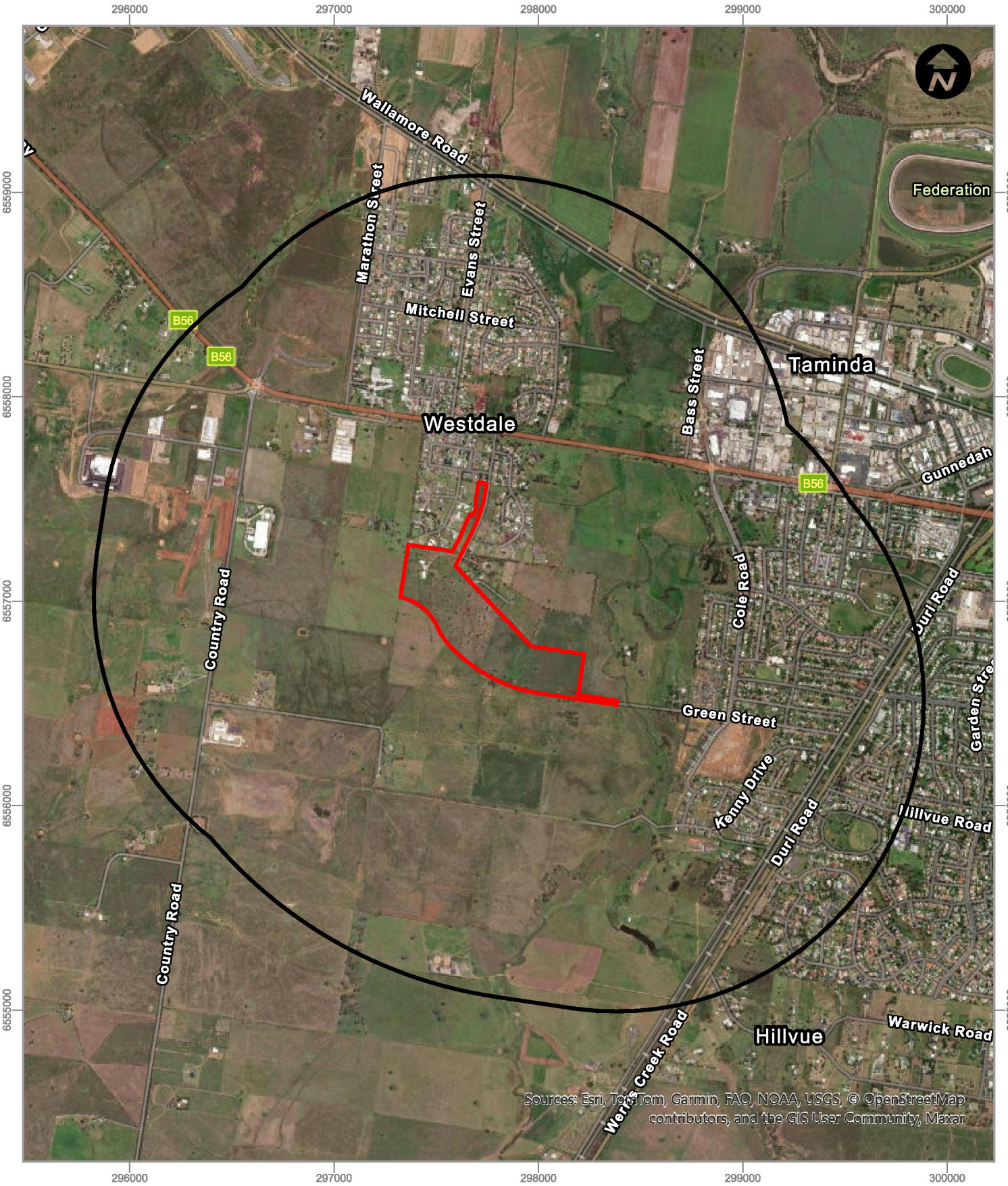


LEGEND

- Site boundary
- 1500m site buffer
- Watercourse or drainage

0 500 Metres

Water Features - Illustration 3.4



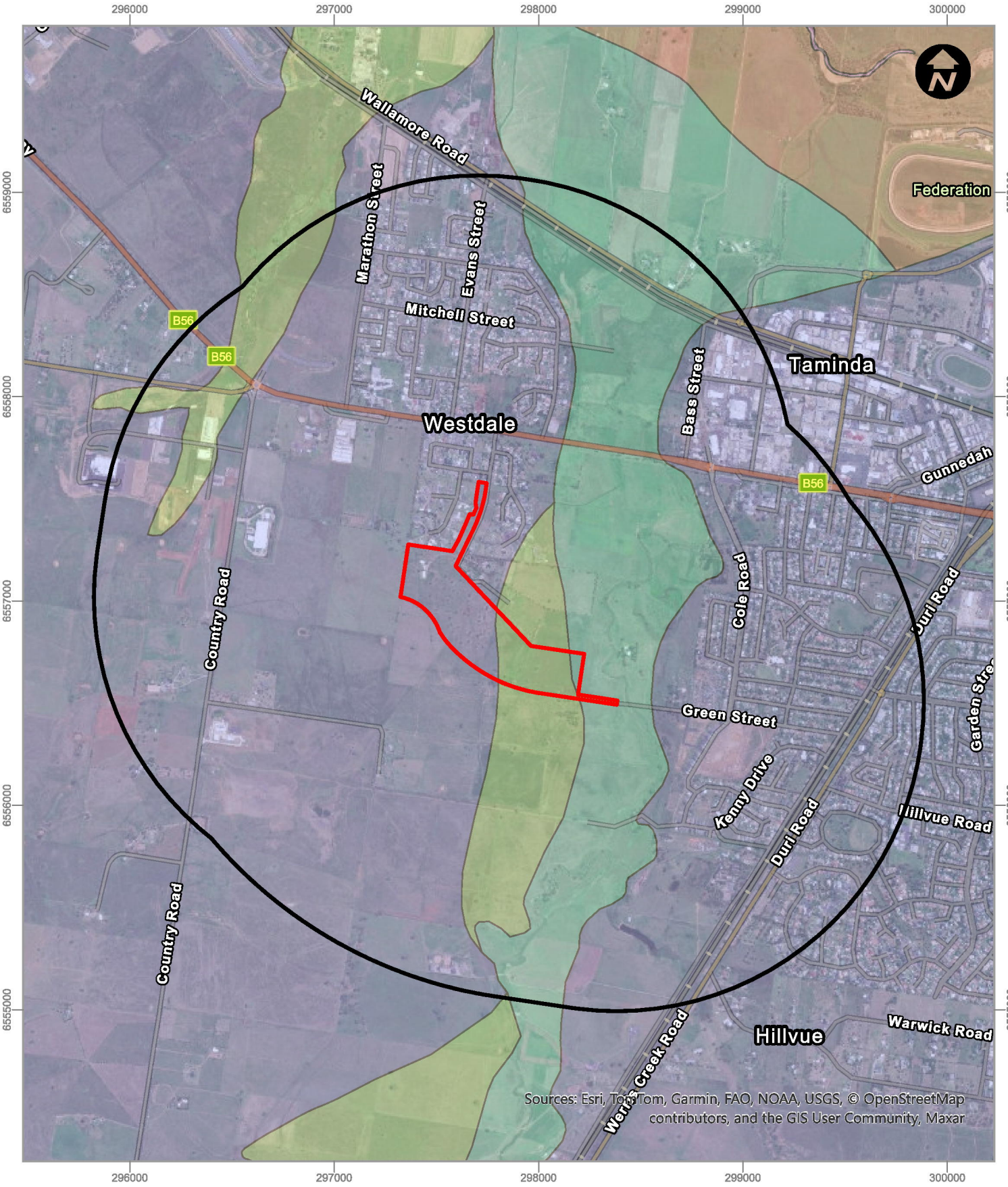
LEGEND

Site boundary

1500m site buffer

0 500 Metres

Connectivity - Illustration 3.5



LEGEND

- Site boundary
- 1500m site buffer

Soil Landscapes

- Duri
- Goonoo Goonoo
- Peel
- Warral Station
- Water

0 500 Metres

Geology and Soils - Illustration 3.6

[redacted]

4. Native Vegetation

This chapter address native vegetation in accordance with Chapter 4 of the BAM (2020) and matters relating to the BC Act. Specifically, this section maps and identifies all native and non-native vegetation types within the site and provides an assessment of vegetation integrity and whether any recorded vegetation types correspond to threatened ecological communities listed under the BC Act.

4.1 Plant Community Types

Native vegetation has been recorded by vegetation formation, class and associated PCT in accordance with the NSW BioNet Vegetation Classification System (NSW Department of Planning and Environment 2022a). One native PCT was recorded on the site. A detailed description of this PCT, justification, floristic and structural composition along with representative photos are provided in **Table 4.1**. The extent of this PCT on the site is shown in **Illustration 4.1.**

4.2 Vegetation Zones

Vegetation at the site was stratified into vegetation zones which are defined in the BAM as 'an area of native vegetation on the site that is the same PCT and has a similar broad condition state' (NSW Department of Planning and Environment 2023a).

The following three vegetation zones were identified on the site:

- Zone_1_Modified A (large trees) – large mature trees on the site with a predominantly exotic groundcover.
- Zone_2_Modified B (small trees) – area including scattered small mature trees on the site with a predominantly exotic groundcover.
- Zone_3_Derived – predominantly exotic grassland on the site lacking trees.

On a precautionary basis, plots were positioned within better quality representations of each vegetation zone. Vegetation zones are shown on **Illustration 4.1**.

Table 4-1 Summary of PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion

Description	
PCT description/ justification	Vegetation on site comprises mostly cleared land with scattered mature eucalypts which are predominantly Blakely's Red Gum (*Eucalyptus blakeyi*). Several large mature trees occur in the southern portion of the site with trees in the central and northern portions of the site being smaller mature trees (approximately 30 cm DBH). The site is highly disturbed on account of current/ historical farming practices and generally lacks a midstorey. Similarly, groundcover flora assemblages have been highly degraded by past cropping and heavy grazing and include minimal native species with exotic and weed species dominant. PCT 599 was considered to be the best fit PCT for vegetation on the site for the following reasons: ▪ The PCT is listed as occurring within the IBRA region/ subregion relevant to the site. ▪ The State Vegetation Type Map (SVTM) indicates areas of this PCT occurring in the locality of the site. ▪ The primary component of the vegetation community extant on the site, Blakely's Red Gum is listed as a diagnostic species for PCT 599 within the BioNet VIS.
Vegetation class	Western Slopes Grassy Woodland
Vegetation formation	Grassy Woodlands
Conservation status	Associated with the White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland TECs listed under the BC Act and EPBC Act.
SAII entity	Yes
% cleared	80%
Dominant canopy species	*Eucalyptus blakeyi, Melia azedarach*
Dominant midstorey species	*Not present*
Dominant ground cover species	*Medicago sativa*, Medicago polymorpha*, Glandularia aristigera*, Cynodon dactylon, Bothriochloa macra Cenchrus clandestinus*, Austrostipa verticillate.* **denotes exotic species.*
Vegetation zone & condition	**Zone_1_Modified A (large trees)** – – Low condition generally lacking native midstorey and groundcover (refer to **Plate 4.1**). **Zone_2_Modified_B (small trees)** – Low condition generally lacking native midstorey and groundcover (refer to **Plate 4.2**). **Zone_3_Derived** – Very low condition generally lacking native species (refer to **Plate 4.3**).
Extent	**Zone_1_Modified_A (large trees)** – 0.55 ha **Zone_2_Modified_B (small trees)** – 7.06 ha **Zone_3_Derived** – 19.97 ha

Plate 4.1 **Plot photo from Zone 1**

Plate 4.2 **Plot photo from Zone 2**

Plate 4.3 **Plot photo from Zone 3**

4.3 Planted Vegetation

Under the BAM planted native vegetation may be assessed under the BAM *Appendix D – Streamlined Assessment Module - Planted Native Vegetation*. Planted vegetation on the site is shown on **Illustration 4.1**. An assessment of planted vegetation on the site in accordance with Appendix D of the BAM is provided below in **Table 4.2**.

Table 4-2 BAM Appendix D – Planted Vegetation Module

D1 Decision Making Key	
1. Does the planted native vegetation occur within an area that contains a mosaic of planted and remnant native vegetation and which can be reasonably assigned to a PCT known to occur in the same IBRA subregion as the proposal?	No … Go to 2
2. Is the planted native vegetation: a. planted for the purpose of environmental rehabilitation or restoration under an existing conservation obligation listed in BAM Section 11.9(2.), and b. the primary objective was to replace or regenerate a plant	No … Go to 3
3. Is the planted/translocated native vegetation individuals of a threatened species or other native species planted/translocated for the purpose of providing threatened species habitat under one of the following: a. a species recovery project b. *Saving our Species* project c. other types of government funded restoration project d. condition of consent for a development approval that required those species to be planted or translocated for the purpose of providing threatened species habitat e. legal obligation as part of a condition or ruling of court. This includes regulatory directed or ordered remedial plantings (e.g. Remediation Order for clearing without consent issued under the BC Act or the Native Vegetation Act) f. ecological rehabilitation to re-establish a PCT or TEC that was, or is carried out under a mine operations plan, or g. approved vegetation management plan (e.g. as required as part of a Controlled Activity Approval for works on waterfront land under the NSW *Water Management Act 2000*)?	No … Go to 4
4. Is the native vegetation (including individuals of a threatened flora species) planted for functional, aesthetic, horticultural or plantation forestry purposes? This includes examples such as: windbreaks in agricultural landscapes, roadside plantings (including street trees, median strips, roadside batters), landscaping in parks, gardens and sport fields/complexes, macadamia plantations or teatree farms?	Yes …area of planted vegetation have been planted as part of residential gardens primarily for aesthetic purposes. Go to D.2 Assessment of planted native vegetation for threatened species habitat (the use of Chapters 4 and 5 of the

D1 Decision Making Key	
	BAM are not required to be applied). The assessment of planted vegetation has been included in the threatened species assessment provided in Chapter 5.

4.4 Threatened Ecological Communities

PCT 599 is representative of the *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* (Box-Gum Woodland) which is listed as a Critically Endangered Ecological Community (CEEC) under the BC Act. As there are no condition thresholds nominated for this TEC all vegetation on the site included derived grassland has been considered to be representative of this TEC.

EPBC listed TECs are discussed in **Section 6.1.1**.

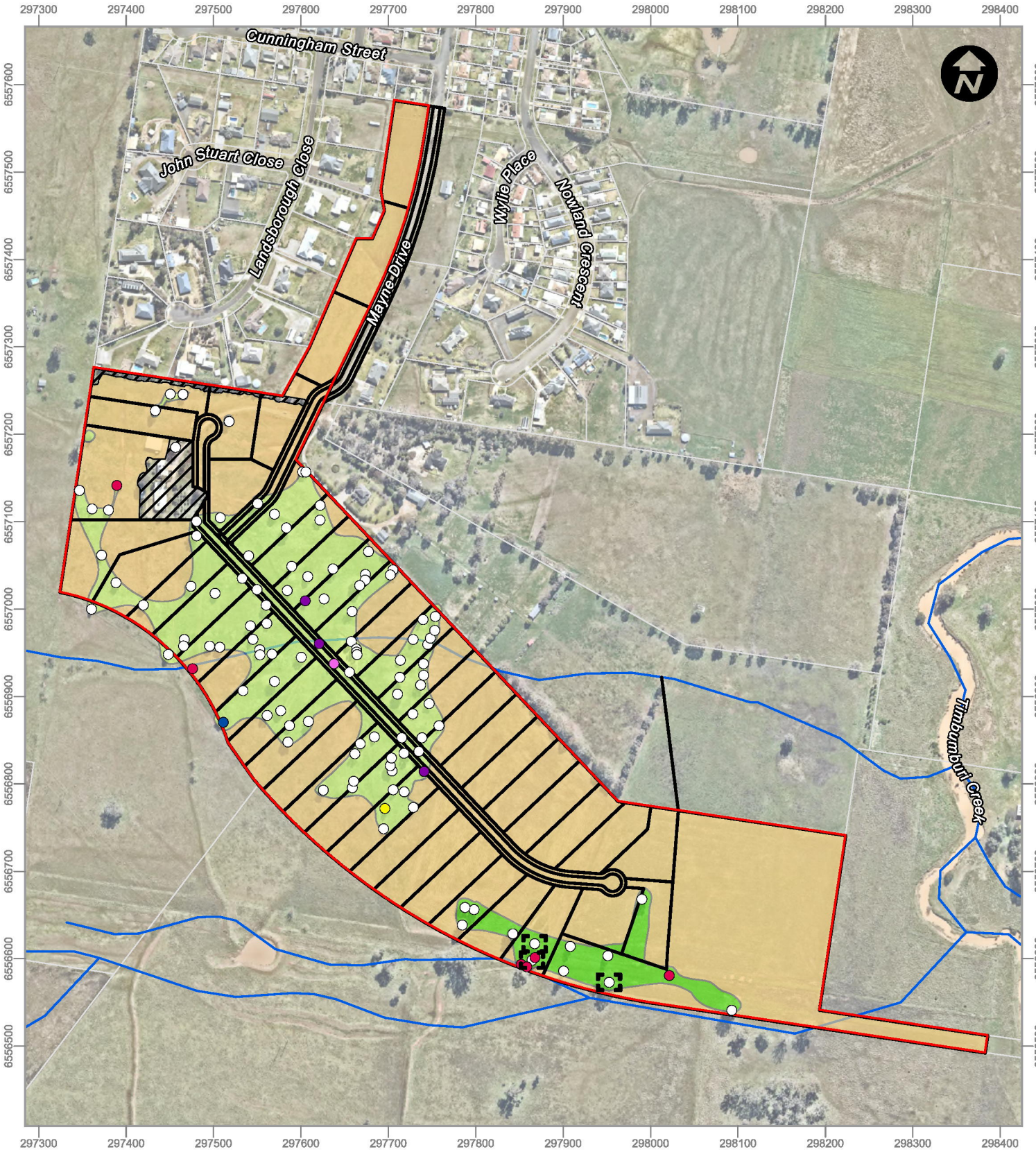
4.5 Vegetation Integrity Scores

As mentioned seven vegetation integrity plots were undertaken as described in **Section 2.5.2** at locations shown in **Illustration 2.1.**

All plot data (included in **Appendix B**) was entered into the BAM-C (Case 00051964) in accordance with the BAM methodology. Vegetation attribute scores and Vegetation Integrity (VI) scores for each vegetation zone are provided below in **Table 4.3**.

Table 4-3 Vegetation Attribute and Vegetation Integrity Scores

Plant Community Type	Vegetation Zone	Area on site (ha)	Composition Score	Structure Score	Function Score	Vegetation Integrity Score
PCT 599 - Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion	**Zone 1_Modified A (mature trees)**	0.55	8.4	81.8	38.2	**29.7**
	Zone 2_Modified_B (small trees)	7.06	6.7	60.6	17.8	**19.4**
	Zone 3_ Derived	19.97	10	57.3	1	**8.3**



LEGEND

- Site boundary
- Cadastre
- PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion (TEC) - zone 1
- PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion (TEC)- zone 2
- Cleared grassland - zone 3
- Planted vegetation
- Proposed subdivision

- Watercourse or drainage
- Hollow-bearing tree
- Blakely's Red Gum
- Pepper Tree
- Red Gum
- River Red Gum
- Stringybark
- White Cedar

0 120 Metres

Vegetation Within the Site - Illustration 4.1

5. Threatened Species

5.1 Identification of Threatened Species

This chapter addresses threatened species in accordance with Chapter 5 of the BAM (2020) and matters relating to the BC Act.

Following input of all plot data into the BAM-C, a list of threatened species with potential to occur at the site was generated. The BAM-C sorts threatened species into two biodiversity credit classes as follows:

1. **Ecosystem credit species**: are threatened species whose occurrence can generally be predicted by vegetation surrogates and/or landscape features, or that have a low probability of detection using targeted surveys. These are identified in the Threatened Biodiversity Data Collection (TBDC) as ecosystem credit species. Targeted survey is not required for these species.
2. **Species credit species**: are threatened species for which vegetation surrogates and/or landscape features cannot reliably predict the likelihood of their occurrence or components of their habitat. A targeted survey or an expert report is required to confirm the presence of these species on the subject land. Threatened species or specific components of species habitat are identified in the TBDC and BAM-C.

5.2 Ecosystem Credit Species

Ecosystem credit threatened species were assessed using information about site context, PCTs and vegetation integrity attributes collected during the field surveys, and data from the TBDC as required by subsections 5.3.1 and 5.3.2 of the BAM.

5.2.1 Predicted Ecosystem Credit Species Generated from BAM Calculator

A list of 17 predicted ecosystem credit species was generated from the BAM-C based on associated plant community types within the site (refer to **Table 5.1**). An accredited assessor has the ability to add additional ecosystem credit species where justification can be provided. No additional ecosystem credit species were considered necessary to add to the BAM-C.

Table 5-1 List of BAM-C Predicted Ecosystem Species

Scientific Name	Common Name	BC Act	EPBC Act	Sensitivity to Gain Class
Birds				
Anthochaera phrygia	Regent Honeyeater	CE	CE	High
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	Moderate
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	V	V	High
Chthonicola sagittata	Speckled Warbler	V	-	High
Climacteris picumnus victoriae	Brown Treecreeper	V	V	High
Falco niger	Black Falcon	V	-	Moderate

Scientific Name	Common Name	BC Act	EPBC Act	Sensitivity to Gain Class
Glossopsitta pusilla	Little Lorikeet	V	-	High
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	-	High
Hirundapus caudacutus	White-throated Needletail	V	V	High
Lathamus discolor	Swift Parrot	E	CE	Moderate
Melanodryas cucullata	South-eastern Hooded Robin	E	E	Moderate
Petroica boodang	Scarlet Robin	V	-	Moderate
Pomatostomus temporalis temporalis	Grey-crowned Babbler	V	-	Moderate
Stagonopleura guttata	Diamond Firetail	V	V	Moderate
Mammals				
Dasyurus maculatus	Sotted-tailed Quoll	V	E	High
Miniopterus orianaea oceanensis	Large Bent-winged Bat	V	-	High
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	High

V = Vulnerable; E = Endangered; CE = Critically Endangered

5.2.2 Justification for Exclusion of Any Predicted Ecosystem Credit Species

No ecosystem credit species were excluded from the BAM-C predicted list.

5.3 Species Credit Species

Species credit species are those species that cannot be confidently predicted to occur based on habitat surrogates and landscape features. These species can also be reliably detected by survey.

5.3.1 Threatened Flora Species Credit Species

A list of 11 candidate threatened flora species credit species was generated by the BAM-C for the site based on associated vegetation types recorded within the site. Candidate threatened flora species are presented in **Table 5.2**.

Table 5-2 List of BAM-C Threatened Flora Species Credit Species

Scientific Name	Common Name	BC Act	EPBC Act
Acacia atrox	Myall Creek Wattle	CE	-
Calistemon pungens		-	V
Dichanthium setosum	Bluegrass	V	V
Digitaria porrecta	Finger Panic Grass	E	-
Euphrasia arguta		CE	CE

Scientific Name	Common Name	BC Act	EPBC Act
Homophilis belsonii	Belson's Panic	E	V
Picris evae	Hawkweed	V	V
Prasophyllum sp Wybong	-	-	CE
Swainsona sericea	Silky Swainson-pea	V	-
Thesium australe	Austral Toadflax	V	V
Tylophora linearis		V	E
V = Vulnerable; E = Endangered; CE = Critically Endangered			

5.3.2 Justification for Inclusion of Any Additional Threatened Flora Species Credit Species

No additional threatened flora 'species credit species' were considered necessary to add to the BAM-C.

5.3.3 Justification for Exclusion of Any Additional Threatened Flora Species Credit Species

No threatened flora 'species credit species' were excluded for further assessment based on habitat constraints or geographic limitations.

5.3.4 Assessment of Candidate Threatened Flora to Determine Affected Species

All 11 candidate threatened flora species were subject to targeted surveys completed within all habitat on the site as described in **Section 2.7**. No threatened flora species were detected at the site.

5.3.5 Threatened Fauna Species Credit Species

A list of 12 candidate threatened fauna species credit species was generated by the BAM-C for the site based on associated vegetation types recorded within the site. Candidate threatened fauna species are presented in **Table 5.3**.

Table 5-3 List of BAM-C Threatened Fauna Species Credit Species

Scientific Name	Common Name	BC Act	EPBC Act
Amphibians			
Adelotis brevis – endangered population	Tusked Frog population in the Nandewar and New England Tableland Bioregions	E	-
Litoria booroolongensis	Booroolong Frog	E	E
Birds			
Anthochaera phrygia	Regent Honeyeater	CE	CE
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	V
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	-
Lathamus discolor	Swift Parrot	E	CE

Scientific Name	Common Name	BC Act	EPBC Act
Mammals			
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-
Petaurus norfolcensis	Squirrel Glider	V	-
Phascolarctos cinereus	Koala	E	E
Pteropus poliocephalus	Grey-headed Flying-fox	V	V
Reptiles			
Aprasia parapulchella	Pink-tailed Legless Lizard	V	V
Uvidicolus sphyrurus	Border-thick-tailed Gecko	V	V
V = Vulnerable; E = Endangered; CE = Critically Endangered			

5.3.6 Justification for Inclusion of Any Additional Threatened Fauna Species Credit Species

No additional threatened flora 'species credit species' were considered necessary to add to the BAM-C.

5.3.7 Justification for Exclusion of Any Additional Threatened Fauna Species Credit Species

In refining the candidate threatened fauna species list for further assessment, six threatened fauna species predicted by the BAM-C were excluded from the BAM-C candidate species credit list. A summary of the justification for this exclusion is provided in **Table 5.4**.

Table 5-4 Justification for Exclusion of Any Threatened Fauna Species Credit Species

Scientific Name	Common Name	Habitat Features/ Geographic Constraints (BAM-C)	Justification for Exclusion
Amphibians			
Litoria booroolongensis	Booroolong Frog	-	The BioNet TBDC includes habitat requirements for this species as "*Live along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses*". The site does not include and is not in proximity to any permanent streams. This species can be excluded as a candidate species on the basis that the site does not include required microhabitat features for the species.
Birds			
Anthochaera phrygia	Regent Honeyeater (Breeding)	■ Mapped in 'Important Habitat Map'	The site does not occur within mapped important areas as defined by DPE. These areas are considered essential to support critical life stages of the species, e.g. breeding areas or locations important for foraging/over-wintering for migratory species. As a result, the species was excluded from being further considered as a species credit species.
Lathamus discolor	Swift Parrot	■ Mapped in 'Important Habitat Map'	The site does not occur within mapped important areas as defined by DPE. These areas are considered essential to support critical life stages of the species, e.g. breeding areas or locations important for foraging/over-wintering for migratory species. As a result, the species was excluded from being further considered as a species credit species
Mammals			
Miniopterus orianae oceanensis	Large Bent-winged Bat	■ Cave, tunnel, mine, culvert or other structure known or suspected to be used for breeding including species records with numbers of individuals >500	Bentwing-bats occur along the east coast in a variety of well-timbered / forested habitats. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Populations are usually centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young (NSW Department of Planning and Environment 2022b). A key breeding requirement for the species is caves or cave-like structures. The site does not provide any roosting habitat in the form of caves, derelict mines, storm-water tunnels, abandon buildings and other suitable man-made structures. It is unlikely that the species would readily breed or be reliant on the site for breeding purposes. As a result, this species was excluded from being further considered as a species credit species.

Scientific Name	Common Name	Habitat Features/ Geographic Constraints (BAM-C)	Justification for Exclusion
Pteropus poliocephalus	Grey-headed Flying-fox	■ Breeding camps	A key habitat feature for the species to be considered as a species credit is the presence of a breeding camp within the site. Based on field investigations no breeding camps occur within the site or in close proximity to the site, as such, the species was excluded from being further considered as a species credit species
Reptiles			
Aprasia parapulchella	Pink-tailed Legless Lizard	■ Rocky areas; or ■ Or within 50 m of rocky areas	The site and surrounding areas does not include rocky areas (a listed habitat feature for this species). As such the species was excluded from being further considered as a species credit species.

5.3.7.1 Assessment of Candidate Threatened Fauna to Determine Affected Species

A final list of six candidate threatened fauna species was determined with these species being subject to target surveys as described in **Section 2.7**. None of these species or any other threatened fauna species were detected on the site.

6. Matters of National Significance

This chapter describes Matters of National Environmental Significance (MNES) relating to Commonwealth legislation under the EPBC Act. The following biodiversity MNES protected under the EPBC Act were considered for their relevance to the proposal:

- Listed threatened species and communities.
- Listed migratory species.
- Critical habitat.
- Wetlands of national and international importance.

This BDAR provides an assessment of all EPBC Act listed threatened species and communities that may be impacted. This list of species and communities for assessment has also been supplemented and refined with database searches (i.e. BioNet, BAM-C and PMST) to provide a thorough assessment.

6.1 EPBC Act Listed Threatened Species and Communities

6.1.1 Nationally Threatened Ecological Communities

Based on vegetation on the site not having a predominantly native understorey (defined as at least 50% of the perennial vegetation in the ground layer being made up of native species), vegetation on the site is not representative of the EPBC listed *White Box – Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*.

6.1.2 Nationally Threatened Flora

No EPBC listed threatened flora were detected at the site and therefore no assessments of significance for such species were required.

6.1.3 Nationally Threatened Fauna

Thirty-one (31) EPBC Act listed threatened fauna species are known to occur or are predicted to occur within the locality of the site. None of these were identified as having a moderate or higher likelihood of occurrence based on previous records and availability of potential habitat, therefore no assessments of significance for such species were required.

6.1.4 Offsets for EPBC Act Listed Entities

Any offsets proposed for impacts to EPBC Act listed threatened entities will be done in accordance with the NSW BOS, the NSW Assessment Bilateral Agreement – Amending Agreement No. 1, and NSW BC Regulation. Further details on required offsets is provided in Chapter 12.

6.2 Migratory Species

Migratory species are protected under international agreements, to which Australia is a signatory, including JAMBA, CAMBA, RoKAMBA and the Bonn Convention on the Conservation of Migratory species of Wild Animals. Migratory species are considered MNES and are protected under the EPBC Act.

A total of 8 EPBC Act listed migratory species are known or predicted to occur within the locality of the site based on the results of database searches. No migratory species were recorded during surveys completed however the site provides potential foraging habitat for two of these species (refer to **Table 6.1**).

Table 6-1 Migratory Species with Suitable Habitat within the Site

Scientific Name	Common Name	EPBC Act	Likelihood Occurrence
Apus pacificus	Fork-tailed Swift	M	**Moderate.** May occur in aerial habitats over the proposal site on a seasonal basis.
Hirundapus caudacutus	White-throated Needletail	V; M	**Moderate.** Although local records are sparse, due to wide ranging habitats, it may occur in aerial habitats over the site on a seasonal basis.

M = Migratory; Ma = Marine; V = Vulnerable

While two terrestrial migratory species of bird may potentially use the site occasionally, the site would not be classed as 'important habitat' as defined by the '*Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*' (Department of the Environment 2013) as the site does not contain habitat:

- Utilised by a migratory species occasionally or periodically within a region that supports an ecological significant proportion of the population of the species.
- Utilised by a migratory species which is at the limit of the species range.
- Within an area where the species is declining.

As such, it is not likely that the proposal would significantly affect migratory species and therefore migratory species have not been considered further.

6.3 Critical Habitat

No EPBC Act listed critical habitat has been recorded or is considered likely to occur within the site.

6.4 Wetlands of National and International Importance

Wetlands are valuable for the environment, food production, our culture and recreation. A healthy wetland has a rich natural diversity of plants and animals. Wetlands may support threatened species and migratory species. Wetlands are important provide strategic refuge during drought and frequently support threatened species. Most of the migratory bird species listed under international convention agreements with Australia may be found in these wetlands.

6.4.1 Nationally Important Wetlands

No wetlands of national importance were identified by database searches within the locality.

6.4.2 Wetlands of International Importance

No wetlands of international importance were identified by database searches within the locality.

BAM STAGE 2 – IMPACT ASSESSMENT

7. Avoid and Minimise

The following provides information on avoiding and minimising impacts on biodiversity values through the planning and design phase of the proposal. This information is provided to directly address Chapter 7 of the BAM (2020).

7.1 Avoiding and Minimise Biodiversity Impacts

7.1.1 Location

In accordance with Section 7.1.1 of the BAM (2020), efforts to avoid and minimise direct impacts on native vegetation and habitat through location of the proposal are addressed in **Table 7.1**.

Table 7-1 Efforts to Avoid and Minimise Direct Impacts on Native Vegetation and Habitat During Proposal Location

Principles to Avoid and Minimise Impact Through Location	Proposal's Consistency
Locating the proposal to avoid minimise impacts	
a) Locating the proposal in areas lacking biodiversity values	The development would avoid large mature trees occurring along the southern boundary of the site which represent the best quality trees including only hollow-bearing (habitat) trees on the site These trees are proposed to be protected on title by an instrument under Section 88b of the *Conveyancing Act 1919*. Impacts from the development would therefore be confined to areas of cleared pastureland and lightly timbered areas with relatively small trees. Whilst this BDAR assumes the loss of all small mature trees on the site it is intended and likely that some of these trees will be retained on new residential lots where reasonable and feasible.
b) Locating where native vegetation or threatened species habitat is in the poorest condition	
c) Avoid habitat for species with high biodiversity risk weighting or native vegetation that is a TEC or a highly cleared PCT	
d) Outside of the buffer area around breeding habitat features such as nest trees or caves	Habitat trees would be retained on the site. No species credit species were confirmed on the site which
Considerations of alternatives	
a) Alternative modes or technologies that would avoid or minimise impacts on biodiversity values	No alternative modes or technologies are considered necessary to avoid or minimise impacts to biodiversity.
b) Alternative routes that would avoid or minimise impacts on biodiversity values	As mentioned, the development footprint utilises land with relatively low biodiversity values and would retain all large mature trees on the site including habitat trees. Alternative routes or designs are not required to further avoid/ minimise impacts to biodiversity values.
c) Alternative locations that would avoid or minimise impacts on biodiversity values	
d) Alternative sites within a property on which the proposal is located that would avoid or minimise impacts on biodiversity values.	

7.1.2 Design

In accordance with Section 7.1.2 of the BAM (2020), efforts to avoid and minimise direct impact on native vegetation and habitat through design of the proposal are addressed in **Table 7.2**.

Table 7-2 Efforts to Avoid and Minimise Direct Impacts on Native Vegetation and Habitat During Proposal Design

Principles to avoid and minimise impact through design	Proposal's consistency
a) Reducing the proposal's clearing footprint by minimising the number and type of facilities	As mentioned mature trees on the site including habitat trees would be retained and protected on the site. Whilst the BDAR assumes the loss of all other vegetation on the site, further avoidance of mature trees on the site is likely to be undertaken as development proceeds on the site. Given the nature of the development, ancillary sites would be accommodated within cleared degraded parts of the site.
b) Locating ancillary facilities in areas that have no biodiversity values	
c) Locating ancillary facilities in areas where the native vegetation or threatened species habitat is in the poorest condition	
d) Locating ancillary facilities in areas that avoid habitat for species and vegetation that has a high threat status (e.g. an endangered ecological community (EEC) or critically endangered ecological community (CEEC) or is an entity at risk of a serious and irreversible impact (SAII)	
e) Actions and activities that provide for rehabilitation, ecological restoration and/or ongoing maintenance of retained areas of native vegetation, threatened species, threatened ecological communities and their habitat on the subject land.	If required by Council, a Vegetation Management Plan can be provided to prescribe actions for the rehabilitation/ restoration of areas associated with mature trees to be retained.

8. Impact Assessment

8.1 Assessment of Direct Impacts

Assessment of direct impacts unable to be avoided is prepared in accordance with Chapter 8 of the BAM (2020).

8.1.1 Impacts on Native Vegetation

Creation of a residential subdivision at the site will facilitate clearing for earthworks, construction of buildings, roads, services and bushfire Asset Protection Zones (APZs). For the purposes of this BDAR it has been assumed that all vegetation on the site would be removed with the exception of large mature trees in the south of the site which are defined as *Zone_1_Modified_A (mature trees).* On the basis that these trees would be retained and protected, this vegetation was excluded from the BAM-Calculator in determining the credit obligation for the proposal.

Native vegetation requiring clearing for the proposal includes areas of cleared mostly exotic grassland and small mature trees planted across the site. The impacts of the development footprint on native vegetation including each PCT and vegetation zones within the development footprint is shown on **Illustration 8.1** and summarised below in **Table 8.1**.

Table 8-1 Direct Impacts on Native Vegetation

Plant Community Type	Vegetation Zone	Current Vegetation Integrity	Change in Vegetation Integrity	Future Vegetation Integrity	Direct Impact (ha)
PCT 599 - Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion	**Zone_2_Modified_B (small trees)**	19.4	-19.4	0	7.06
	Zone_3_Derived	8.3	-8.3	0	19.97
				Total direct impact on native vegetation	**27.03**

8.1.2 Direct Impacts on Threatened Ecological Communities

Impacts to TECs on the site are shown on **Illustration 8.1** and summarised in **Table 8.2**.

Table 8-2 Direct Impacts on TECs

TEC	Associated PCT	Vegetation Zone	Area (ha)
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 (Box-Gum Woodland)	PCT 590 White Box grassy woodland on the Inverell basalts mainly in the Nandewar Bioregion	Zone_2_Modified_B (small trees)	7.06
		Zone_3_Derived	19.97
		Total direct impact on native vegetation	**27.03**

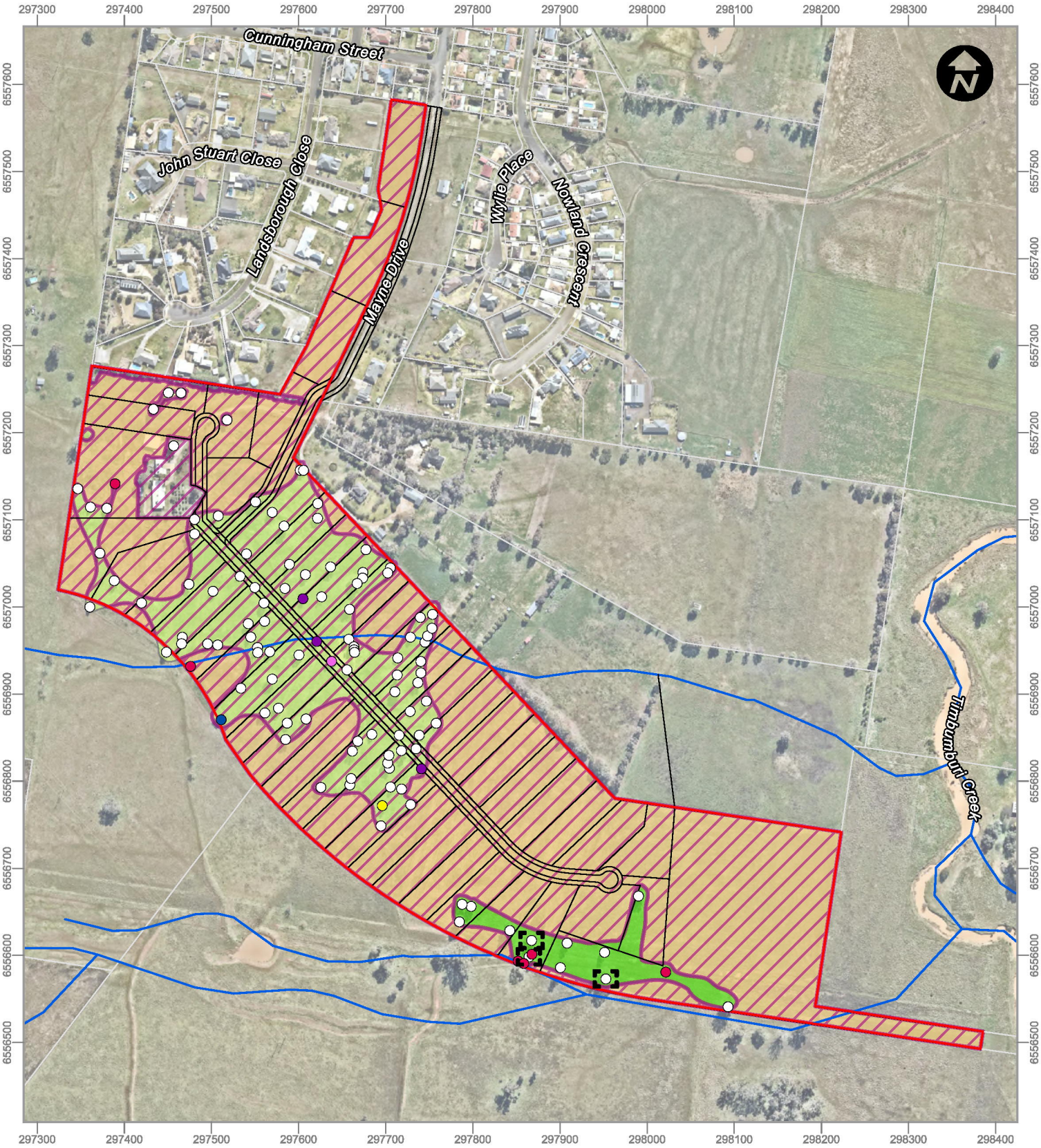
8.1.3 Direct Impacts on Threatened Species Credit Species

Threatened Flora

No direct impacts to threatened flora species or habitat for such species would occur as a result of the proposal.

Threatened Fauna

No direct impacts to threatened fauna species or habitat for such species would occur as a result of the proposal.



LEGEND

- Site boundary
- Cadastre
- PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion (TEC) - zone 1
- PCT 599 Blakely's Red Gum – Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion (TEC)- zone 2
- Cleared grassland - zone 3
- Vegetation impacted
- Watercourse or drainage
- Proposed subdivision
- Hollow-bearing tree
- Blakely's Red Gum
- Pepper Tree
- Red Gum
- River Red Gum
- Stringybark
- White Cedar

0 120 Metres

Vegetation Impacts - Illustration 8.1

[redacted]

8.2 Assessment of Indirect Impacts

The assessment of indirect impacts has been prepared in accordance with Section 8.2 of the BAM (2020). Indirect impacts have been considered in terms of the nature, extent and duration of impacts on native vegetation, threatened ecological communities and threatened species habitats likely to be affected. The assessment of indirect impacts is presented in **Table 8.3**.

Table 8-3 Assessment of Indirect Impacts

Indirect Impact	Construction/ Operation	Nature	Extent	Duration	Consequence
Inadvertent impacts on adjacent habitat or vegetation	Construction	Native vegetation Threatened species habitat	All PCTs	Short term	**Low**. Inadvertent impacts on adjacent vegetation can include a range of indirect impacts including soil disturbance, introduction of weeds, erosion, sedimentation, enriched runoff, and water quality. Construction of the proposal has the potential to result in sedimentation and erosion and mobilisation of contaminants within the development footprint and into adjoining native vegetation and ephemeral drainage lines, through soil disturbance and construction activities. Sediment laden runoff and spills affect water quality and adversely affect aquatic life particularly during construction near creek lines. The mobilisation of sediments would be contained within the disturbance area as sediment containment measures would be implemented as part of mitigation measures.
Inadvertent impacts on hydrology and GDEs	Construction / operation	Hydrology	Aquatic habitats associated with creeklines	Long term	**Low**. Inadvertent impacts on surface water within proximity to disturbance footprint. Indirect impacts could include enriched run-off, decreased water quality and/or minor alterations to hydrology as a result of increase water run-off due to hard surfaces. Based on the relatively minor excavation required, the proposed development is not considered likely to significantly impact on the quantity and quality of surface and groundwater flows.
Reduced viability of adjacent habitat due to edge effects	Construction / operation	Native vegetation	All PCTs	Long term	**Low**. Edge effects create vulnerable areas subject to degradation by the establishment and spread of weeds, enriched water run-off from roadways and dumping of rubbish and have the potential to reduce the viability of adjacent habitat long-term. Implementation of mitigation measures including weed & biosecurity management and water runoff controls will reduce the potential impact of edge effects on site both during construction and operation. With the implementation of mitigation measures, the residual indirect impacts from the proposal are considered minor at a local and regional scale.
Reduced viability of adjacent habitat due to noise, dust or light spill	Construction / operation	Native vegetation Threatened species habitat	All PCTs	Short and long-term	**Low**. Noise, dust, light and contaminant pollution are indirect impacts that are likely to result from activities associated with the development footprint. These impacts are likely to have cumulative effects. Noise, dust, light and contaminant pollution are likely to occur from both construction and operational phases, although the intensity will be greatest where activities take place near vegetated areas and during predominately during construction. During all construction increased noise and vibration levels in the site and immediate surrounds are likely due to ground disturbance, machinery and vehicle movements, and general human presence. The noise and vibration from construction would potentially disturb fauna and may disrupt foraging, reproductive, or movement

Indirect Impact	Construction/ Operation	Nature	Extent	Duration	Consequence
					behaviours. The impacts from noise emissions are likely to be localised to the construction areas and are not considered likely to have a significant, long-term impact on wildlife populations outside the area of impact. Elevated levels of dust may be deposited onto the foliage of vegetation adjacent to the development. This has the potential to reduce photosynthesis and transpiration and cause abrasion and heating of leaves resulting in reduced growth rates and decreases in overall health of the vegetation. Dust pollution is likely to be greatest during periods of substantial earthworks, vegetation clearing, vehicle movements for construction and decommissioning activities and during adverse weather conditions. However, deposition of dust on foliage is likely to be highly localised, intermittent, and temporary and is therefore not considered likely to be a major impact of the proposal in the long term. Dust reduction measures will also be employed throughout construction and operational phases to reduce any residual impacts due to works. Ecological light pollution is the descriptive term for light pollution that includes direct glare, chronic or periodic increased illumination, and temporary unexpected fluctuations in lighting (including lights from a passing vehicles), that can have potentially adverse effects on wildlife (Longcore & Rich 2004). It has been assumed that no night works would be required during construction and light pollution is considered negligible during this phase. In regard to operational phase, due to the rural setting and location of the proposal, changes to light regimes during nocturnal periods within the site and adjacent habitat are considered as significant changes from current conditions. To mitigate light pollution as a result of the proposal, lighting associated with the development footprint would be designed to minimise 'light spill' (i.e. use of light shields on external lights to direct light away from remnant vegetation) to adjacent habitat by incorporating 'soft lighting' principles reducing the potential residual impacts on adjacent habitat and local fauna populations. During the construction and operational phase localised release of contaminants (i.e. hydraulic fluids, oils, fluids, etc.) into the surrounding environment (including drainage lines) could accidentally occur. The most likely result of contaminant discharge would be the localised contamination of soil and potential direct physical trauma to flora and fauna that come into contact with contaminants. Any accidental release of contaminants is likely to be localised and would be unlikely to have a significant effect on the environments of the site, particularly due to the implementation of mitigation measures to immediately address any spills.
Transport of weeds and pathogens from the site to adjacent vegetation	Construction / operation	Native vegetation	All PCTs	Long term	**Low**. The development footprint has the potential to increase the spread of pathogens that threaten native biodiversity values, such as the soil-borne pathogen *Phytophthora cinnamomi* (Phytophthora) and *Austropuccinia psidii* (Myrtle rust).

Indirect Impact	Construction/ Operation	Nature	Extent	Duration	Consequence
					Phytophthora infects root systems whereas Myrtle Rust deforms leaves and leads to heavy defoliation. Both pathogens are associated with damage and death to native plants and may be dispersed over large distances. Phytophthora can be spread through flowing water, such as storm runoff, or may be spread within a site via mycelial growth from infected roots to roots of healthy plants. Propagules of Phytophthora may also be dispersed by vehicles (e.g. cars and earth moving equipment), animals, walkers and movement of soil. Myrtle rust spores can be spread easily via contaminated clothing, hair, skin and personal items, infected plant material, equipment as well as by insect/animal movement and wind dispersal. The proposal's construction activities may lead to an increased risk of dispersal of Phytophthora and/or Myrtle Rust through works involving soil disturbance. However, the biosecurity measures outlined in this BDAR are likely to mitigate these risks.
Increased risk of starvation, exposure and loss of shade or shelter	Construction	All fauna species	All PCTs	Short term	**Negligible**. The risk of displacement of resident fauna species during native vegetation clearing is considered low due to the small amount of low-quality vegetation clearing proposed to be removed.
Loss of breeding habitats	Construction	All fauna species	All PCTs	Long term	**Low**. All hollow-bearing trees will be retained on the site as part of the proposal.
Trampling of threatened flora species	Construction / operation	Native vegetation Threatened flora species	All PCTs	Short and long term	**Low**. No threatened flora have been identified on or in proximity to the site.
Wood collection	Construction	Terrestrial fauna species	All PCTs	Short term	**Negligible**. Given the lack of mature vegetation and fallen woody debris on the site impacts are unlikely.
Bush rock removal and disturbance	Construction	Terrestrial fauna species	All PCTs	Short term	**Negligible.** Removal of bush rock is listed as a key threatening process under the BC Act. Large areas of bush rock and rocky outcropping was not observed in the site during field surveys. However, if bush rock is encountered during construction of the proposal it will be retained and reused in adjacent habitat.
Increase in predatory species populations	Construction / operation	All fauna species	All PCTs	Long term	**Low**. Predation by feral cats and foxes are listed as key threatening processes under the BC Act and have potential to impact local fauna populations in adjacent habitat. It is unlikely that the proposal would further exacerbate the impact predator species populations have than what currently exists within the locality.
Increased risk of fire	Construction / operation	Native vegetation	All PCTs	Long term	**Low**. Bushfire risk is unlikely to be exacerbated from what already exists within the site. Bushfire risk will be managed in accordance with bushfire and fire safety guidelines.

8.3 Assessment of Prescribed Impacts

Assessment of prescribed impacts is prepared in accordance with Section 8.3 of the BAM (2020) and outlined in **Table 8.4**.

Table 8-4 Assessment of Prescribed Impacts

Prescribed impacts	Nature	Extent	Duration	Consequence
Karst, caves, crevices, cliffs, rocks and other geological features of significance	No karst, caves, crevices, cliffs or other features of geological significance will be impacted by the development footprint.			
Human-made structures or non-native vegetation	Whilst human made structures (house and sheds) occur at the site these would not be impacted by the proposal. Impacts to derived grassland on the site which includes exotic grasses/ groundcovers has been assessed as part of this BDAR.			
Habitat connectivity	Terrestrial fauna and threatened species	The proposal does not occur within any mapped wildlife corridor. The majority of the development footprint occurs within highly disturbed areas. The proposal would not significantly fragment remnant vegetation within the site given that large mature trees in the south of the site are to be retained. It is likely that both highly mobile and less mobile fauna species would still have the ability to move through the landscape and would not be significantly impeded due to the proposal.	Long term	**Low** – The development footprint will not result in new fragmentation of habitat patches within the locality. The majority of the development footprint occurs within previously disturbed areas, however, parts of the development (i.e. roads) may increase human interactions (i.e. vehicle interactions) -see below for impacts as a result of vehicle strikes. Overall, the consequence of the impacts would be minor and non-significant.
Waterbodies, water quality and hydrological processes	Aquatic dependant fauna and associated PCTs	A first order tributary of Timbumburi Creek is mapped traversing a central portion of the site in a west to east direction. The mapped waterway does not include any defined bed or banks and is likely to act as an ephemeral drainage line after large rainfall events.	Long term	**Low** – whilst the proposal may impact the first order waterway on the site, this feature is largely undefined and likely to act a an ephemeral drainage after large rainfall events.
Wind turbine strikes	No wind turbines are proposed as part of this development footprint			
Vehicle strikes	Terrestrial fauna and threatened species	The proposal may result in an increase in vehicle traffic to/ from the site along Mayne Drive and Gunnedah Road. However, this is likely to be relatively minor given the scale of the proposal.	Long term	**Low** – given the low-quality fauna habitats associated with the site and small increases in traffic volumes.

8.4 Serious and Irreversible Impacts (SAII)

8.4.1 SAII Listed Entities (DPE)

The NSW Department of Planning and Environment (DPE) provides a list of Serious and Irreversible Impact (SAII) entities that must be considered further within a BDAR to determine if a serious and irreversible impact to such entities is likely.

The White Box Yellow Box Blakely's Red Gum Woodland TEC is included as a SAII entity. Additional impact assessment provisions have been addressed for this TEC in accordance with the requirements of Section 9.1 of BAM 2020 (refer to **Appendix C**). Council as the Consent Authority is required to use the information in **Appendix C** to determine if the proposal will have a serious and irreversible impact on the White Box Yellow Box Blakely's Red Gum Woodland TEC.

9. Other Statutory Considerations

9.1 State Environmental Planning Policy (SEPP) (Biodiversity and Conservation) 2021

Chapter 4 of the State Environmental Planning Policy (Biodiversity & Conservation) 2021 (formerly State Environmental Planning Policy (Koala Habitat Protection) 2021) aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline.

The Koala SEPP 2021 reinstates the policy framework of SEPP Koala Habitat Protection 2019 to 83 Local Government Areas (LGA) in NSW. At this stage:

- In nine of these LGAs – Metropolitan Sydney (Blue Mountains, Campbelltown, Hawkesbury, Ku-Ring-Gai, Liverpool, Northern Beaches, Hornsby, Wollondilly) and the Central Coast LGA – Koala SEPP 2021 applies to all zones.
- In all other identified LGAs, Koala SEPP 2021 does not apply to land zoned RU1 Primary Production, RU2 Rural Landscape or RU3.

The subject site is zoned R2 under the Tamworth Regional Local Environment Plan 2010 therefore the Koala SEPP 2021 (Chapter 4) applies to the proposal.

As the proposal would impact areas of native vegetation, investigation is required to determine whether 'core Koala habitat' is present. The Policy defines 'core Koala habitat' as:

> *a) an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas are recorded as being present at the time of assessment of the land as highly suitable koala habitat, or*
>
> *b) an area of land which has been assessed by a suitably qualified and experienced person as being highly suitable koala habitat and where koalas have been recorded as being present in the previous 18 years.*

'Highly suitable habitat' is where 15% or greater of the total number of trees within any Plant Community Type (PCT) are the regionally relevant species of those listed in Schedule 2 of the SEPP. Trees on the site include the regionally relevant species Blakely's Red Gum (*Eucalyptus blakelyi*) which represents >15% of the total number of trees on the site. As such, vegetation on the site represents '*highly suitable koala habitat'*.

In the absence of any formalised guidelines to support the Policy, the following assessment process was completed:

1. Analysis of Koala records in BioNET with regard to any Koala records associated with the site in the last 18 years (accepted as being three Koala generations) and where records have a locational accuracy < 1,000 metres.
2. Targeted scat searches under the preferred Koala feed trees species, Forest Red Gum occurring at the site.

Based on step 1, BioNet records indicate two Koala records within a 5 km radius of the site (refer to **Figure 9.1**) occurring in Tamworth CBD. The lack of BioNet Koala records associated with the site suggest the lack of Koala population locally.

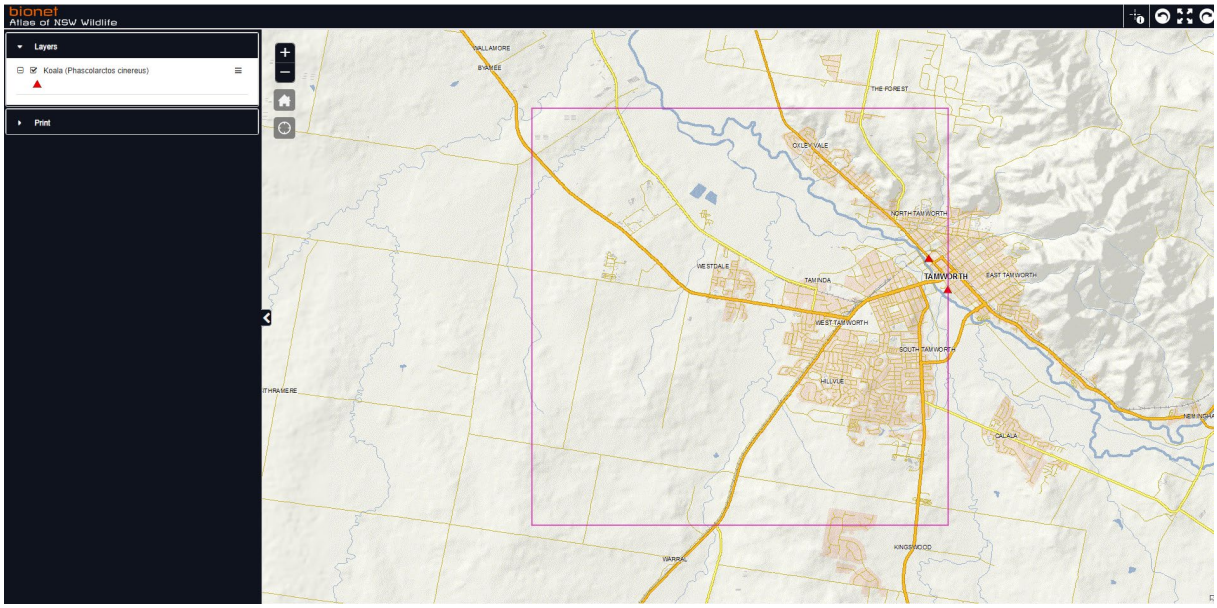


Figure 9-1 Local BioNet Koala Records

Step 2 – target searches for Koalas did not return any signs of Koalas (faecal pellets, sightings, scratches on smooth-barked trees). Results are reflective of the absence of Koala records in the locality (as above)

As native vegetation is being removed (including Koala use tree species), the proposal requires the preparation of a Koala Assessment Report (KAR) which must address five key principles:

1. *Understand Koala habitat values,*
2. *Avoid intensifying land use in Koala habitat areas through appropriate landscape planning and site selection,*
3. *Encourage the proper conservation and management of areas of natural vegetation that provide habitat for Koalas,*
4. *Minimise potential direct impacts to Koalas though koala sensitive design, and*
5. *Implement best practice measures for the management of identified risks to Koalas.*

A KAR has been prepared in table format to address the requirements set out in the *Koala SEPP 2021 FAQs — development applications* guideline (DPIE 2021); refer **Table 9.1**

Table 9-1 Koala Assessment Report

KAR Requirement	Response
Principle 1. Understand Koala habitat values	
What is known about the size, health and viability of the koala population?	There is no evidence of a Koala population associated with the site.
What is known about the generational persistence of the local koala populations? This should be informed by a record analysis to determine population trends and persistence over time.	Refer above.
What is the broader landscape context of the habitat within the site area? For instance, is it contiguous with broader areas of habitat or	The subject site and immediate surrounds has sparse treed vegetation present. Similar habitat occurs within the broader locality of the site.

KAR Requirement	Response
relatively isolated, and what are the likely regional movement patterns of koalas using the site area?	
Does the site area contain particular values likely to serve an important ecological function for koalas? For instance, does it provide linkage between other habitats or serve as a habitat buffer to broader areas?	The site provides some foraging and refuge habitat but these values are devoid in lieu of the lack of a known Koala population.
Could the habitat area and/or koala population using the site area be important to the recovery of the koala? For instance, does the habitat contain features that might provide refuge during droughts, extreme heat, or fire? Or is the population considered to be healthy, robust, or showing relatively low incidence of disease?	There is no evidence of a Koala population associated with the site.
Drawing on evidence presented, what significance are the values of the site to preserving the existing Koala population and supporting recovering and expanding populations?	This site offers minimal values for Koalas given the lack of evidence of a local population.
Principle 2. Avoid intensifying land use in Koala habitat areas through appropriate landscape planning and site selection	
How has the development footprint avoided core Koala habitat?	Core Koala habitat is absent at the site.
What feasible alternative site selections were assessed as part of the process?	The proposal has avoided areas of native vegetation where possible.
Principle 3. Encourage the proper conservation and management of areas of natural vegetation that provide habitat for Koalas	
Development avoids the direct loss of core Koala habitat within the site area and avoids fragmentation	Core Koala habitat does not occur at the site; no fragmentation of consolidated areas of potential habitat would occur as a result of the proposal.
Core Koala habitat is excluded from the development footprint	Core Koala habitat does not occur at the site; no significant Koala habitat occurs within or will be affected by the proposed development.
Principle 4. Minimise potential direct impacts to Koalas through koala sensitive design	
Development avoids direct impacts to core Koala habitat within the site area.	n/a; core Koala habitat is absent from the site.
Where some loss of core Koala habitat cannot be avoided (and provided it is consistent with all other criteria), development is designed in a way that retains higher value areas across the site and avoids fragmentation of habitat within the site area and more broadly within the region.	n/a; core Koala habitat is absent from the site.
Development is undertaken in a way that maintains the potential function of the core Koala habitat.	Mature trees are to be retained on the site as part of the proposal.
Principle 5. Implement best practice measures for the management of identified risks to Koalas.	
All relevant indirect impacts to Koalas and Koala habitat associated with the development are identified.	Few indirect impacts to Koalas are likely given the lack of a local population. The incidence of roadkill is likely to be low given the site is an urban area and roads will be low speed (50 km/hr). Other potential indirect impacts such as

KAR Requirement	Response
	dog attacks are not relevant given the absence of a local Koala population.
Development uses best practice management measures to address the potential impacts considered likely to pose an increased risk to Koalas or their habitat.	As detailed risks to Koalas as a result of the proposal would be minimal.

Based on BioNET results and site investigations, Koalas are unlikely to occur at the site. The KAR notes that the site does not contain core Koala habitat and impacts to Koalas and their habitats are negligible. On this basis the Policy has been satisfactorily addressed and there are no further requirements.

10. Mitigation and Compensation

10.1 Mitigation and Compensation Measures Required

Mitigation measures have been prepared in accordance with Section 8.1 of the BAM (2020). Mitigation and management measures have been prepared to address and minimise the biodiversity impacts associated with the proposal. **Table 10.1** outlines the proposed mitigation measures for the proposal.

Table 10-1 Biodiversity Mitigation Measures

Reference ID	Mitigation Measure	Reason	Responsibility
Design			
B1	Large mature trees on the site associated with Vegetation Zone 1 would be retained and protected by placing restrictions on title in accordance with Section 88b of the Conveyancing Act 1919.	To avoid the highest biodiversity values on the site.	Developer
B2	Future DAs for new buildings on the site will avoid/ minimise the clearing of mature trees as required by local and state biodiversity provisions.	To avoid/ minimise impacts to biodiversity.	Council
Construction			
B3	Erosion and sediment control measures must be installed in accordance with the Landcom/ Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book) with specific controls installed around watercourses.(Department of Environment and Climate Change 2008, Landcom 2004)	To prevent sediment entering drainage lines, moving off-site and sediment laden water entering adjacent land.	Project Contractor
B4	Erosion and sedimentation controls are to be checked and maintained on a regular basis (including clearing of sediment from behind barriers) and records kept and provided on request.	To ensure sediment controls are functional and appropriate.	Project Contractor
B5	Erosion and sediment control measures are not to be removed until the works are complete, and areas are stabilised.	To ensure sediment controls are functional and appropriate.	Project Contractor
B6	Work areas are to be stabilised progressively during the works.	To minimise opportunities for soil transport during rainfall events.	Project Contractor
B7	Measures must be implemented during construction works so that machinery and plant do not introduce weed seed or propagules to the site (e.g. by adoption and implementation of the 'Arrive Clean, Leave Clean' guidelines)(Department of the Environment 2015).	To minimise biodiversity risks from weed degradation.	Project Contractor

Reference ID	Mitigation Measure	Reason	Responsibility
B8	Biosecurity risk weeds are to be managed according to requirements under the *Biosecurity Act 2015* and/or Council management measures.	To minimise biodiversity risks from weed degradation and meet statutory requirements.	Project Contractor
B9	Any tree pruning or protection works must be completed by a certificate 5 arborist and in accordance with *Australian Standard 4970-2009 Protection of trees on development sites*.	To ensure tree health is maintained by professional accepted practices.	Project Contractor/Arborist or Clearing Contractor
B10	The extent of the development footprint (subject to this DA) must be clearly (i.e. hi-visibility fencing or similar) pegged/marked on site by a registered surveyor, consistent with final approved plans/designs.	To minimise risks to fauna and vegetation not assessed under this BDAR.	Project Contractor
B11	Pre-clearing surveys must be undertaken by an ecologist or spotter-catcher to ensure nesting or roosting fauna are not present within vegetation to be removed.	Protection of fauna likely to utilise the development footprint.	Project Contractor/Ecologist
B12	Vegetation to be cleared will not be pushed into adjacent vegetation.	Protection of fauna likely to utilise the development footprint and adjacent vegetation.	Project Contractor
B13	Vegetation removed will not be burnt. Vegetation removed will be chipped and mulch retained for reuse onsite.	To reduce air pollution /carbon emissions.	Project Contractor

11. Biodiversity Offset Credit Obligation

Biodiversity offsetting for residual impacts on BC Act biodiversity values is mandatory for Part 4 being assessed under Part 7 of the BC Act and subject to a BDAR. Biodiversity offset obligations have been determined using the BAM credit calculator (BAM-C). BAM-C credit report outputs are included in **Appendix D**. The required ecosystem and species credit obligations are outlined below.

11.1 Impacts Not Requiring Offset

In accordance with section 9.2.1 of the BAM, an offset is required for all impacts of proposals on PCTs that are associated with a vegetation zone that has a vegetation integrity (VI) score of:

- ≥15, where the PCT is representative of an EEC or a CEEC.
- ≥17, where the PCT is associated with threatened species habitat (as represented by ecosystem credits) or represents a vulnerable ecological community.
- ≥20, where the PCT does not represent a TEC and is not associated with threatened species habitat.

Vegetation *Zone_3_Derived* recorded a VI score of 8.3 which being less than 15 does not require an offset.

11.2 Impacts Requiring Offset

The vegetation zones recorded within the development footprint that generated a score of ≥15 require biodiversity offsets. Biodiversity offset obligations have been determined using the BAM credit calculator. Biodiversity values which generated ecosystem and species credits are detailed below.

11.2.1 Ecosystem Credits

The required ecosystem credit obligation, as determined using the BAM calculator for the proposal is detailed in **Table 11.1**.

Table 11-1 Ecosystem Credits Required to Offset Development Impacts

PCT	Vegetation Zone	TEC	BRW	Area of Impact (ha)	Ecosystem Credit Obligation
PCT 599	**Zone_2_Modified_B (small trees)**	Box Gum Woodland	2.5	7.06	85
				Total ecosystem credit obligation	**85**

BRW – Biodiversity Risk Weighting

11.2.2 Species Credits

No credit obligation is required for species credit species.

11.3 Offsetting Strategy

The biodiversity offset strategy for this proposal, that will enable the credit obligations to be met, comprises three options. These options are:

- Establishment of Biodiversity Stewardship Agreements.
- The purchase and retirement of existing biodiversity credits currently available on the biodiversity credit register.
- Making a payment into the Biodiversity Conservation Fund (BCF).

Biodiversity offset obligations will be met by either; purchase and retirement of existing biodiversity credits available on the biodiversity credit register or making a payment into the BCF.

11.3.1 Offsets for EPBC Act Listed Entities

No offsets are required for EPBC Act listed entities.

Glossary of Terms and Acronyms

Term or acronym	Meaning
BAM	Biodiversity Assessment Method 2020
BAM-C	BAM Calculator
BC Act	*Biodiversity Conservation Act 2016*
BC Regulation	Biodiversity Conservation Regulation 2017
BCD	Biodiversity Conservation Division
BCT	Biodiversity Conservation Trust
BDAR	Biodiversity Development Assessment Report
BOAMS	Biodiversity Offsets and Agreement Management System
BOS	Biodiversity Offsets Scheme
DPE	Department of Planning and Environment
EES	Environment, Energy and Science
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
IBRA	Interim Biogeographic Regionalisation for Australia
LEP	Local Environmental Plan
LGA	Local Government Area
OEH	Office of Environment and Heritage
PCT	Plant Community Type
SAII	Serious and Irreversible Impact
SEPP	State Environmental Planning Policy
TBDC	Threatened Biodiversity Data Collection
TEC	Threatened Ecological Community listed in the BC Act and/or EPBC Act
VI	Vegetation Integrity
VIS	Vegetation Information System
VMP	Vegetation Management Plan

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Copyright and Usage

Appendix A

Concept Design

LAND BUDGET

Site Area	28.90		
	Area (ha)	%Site	% NDA
Non Developable			
Total	0.00	0.00%	0.00%
NDA	28.90	100.00%	100.00%

Land Use			
Residential	25.91	89.67%	89.67%
Existing Dwelling	1.31	4.54%	4.54%
Roads/Mews	1.67	5.79%	5.79%
Total	28.90	100.00%	100.00%

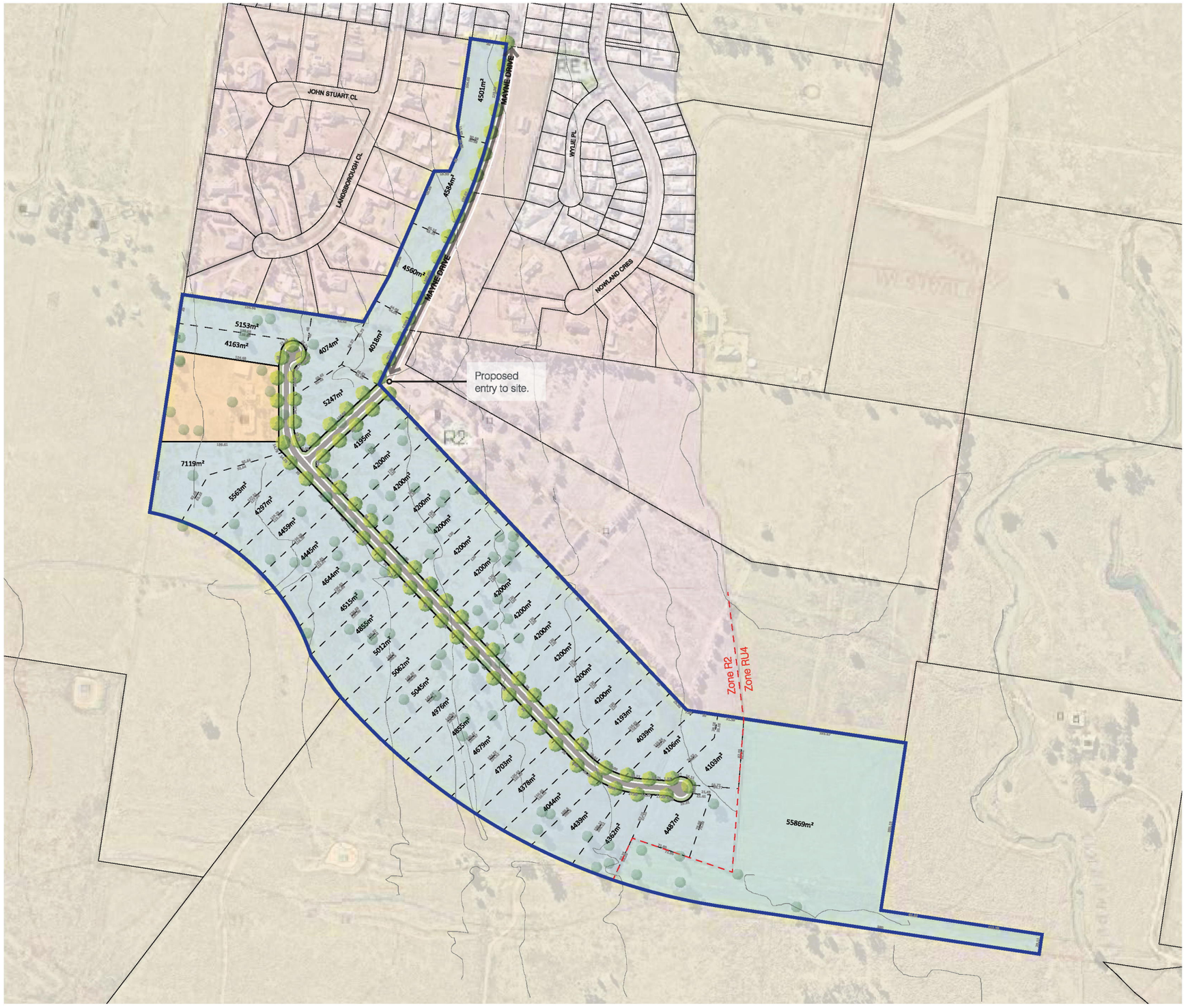
Note: Numbers are rounded to two decimal places

Number Lots	46
Lots/NDHa*	1.63
Average Lot Size	5,633.5m²
Existing Dwelling	1
Total Yield	47

Note:
*Density calculation includes existing dwelling.

LEGEND

- ZONE BOUNDARY
- CONTOURS 1M
- OPPORTUNITY TO RETAIN EXISTING TREES WITHIN PRIVATE LOTS AND THE NETWORK OF OPEN PARKS
- OPPORTUNITY FOR STREET TREE PLANTING TO PROVIDE CANOPY COVER TO REDUCE HEAT ISLAND AFFECT



LIMITATION OF PLAN

- The plan has been prepared accordance with Tamworth Regional Council standards . Upon successful acquisition of the site there is potential for 'add value' elements that will increase the amenity, liveability and marketing opportunities for the site.
- Alternatives would need to be discussed with Council and/or the relevant authorities.
- This document is indicative only and not for marketing purposes without permission
- Data has been collated from https://www.https://maps.six.nsw.gov.au/ and other publicly accessible information.
- This plan has been based on MGA 2020 Zone 56.
- For a more comprehensive plan further information required, but not limited to includes:
  - Survey
  - Flora and Fauna
  - Traffic and Transport
  - Integrated Water
  - Cultural Heritage

18-50 MAYNE DR, WESTDALE NSW
Concept Plan

REV 04

DATE 03/09/2024

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SCALE 1:5000@A3

Appendix B

Plot Data

Plot 1

Date			
Zone 56	Datum MGA94	Survey Name	Zone ID 1
Start Easting 297861	Start Northing	Start WP	Recorders [redacted]
End Easting 6556616	End Northing	End WP	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

IBRA region	Plot dimensions	Photo #	Midline bearing (degrees)
	20x50		119

Vegetation Class	Open Woodland with Mature Trees	**Confidence**	
Plant Community Type		**EEC?**	
Plant Community Name			

BAM Attribute (400 m^2 plot)		**Sum values**
Count of **Native Richness**	**Trees**	2
	Shrubs	0
	Grasses etc.	2
	Forbs	0
	Ferns	0
	Other	0
Sum of **Cover** of native vascular plants by growth form group	**Trees**	19
	Shrubs	0
	Grasses etc.	42
	Forbs	0
	Ferns	0
	Other	0
High Threat Exotic cover		15.1

Codes for formulas
Tree (TG)
Shrub (SG)
Grass & grasslike (GG)
Forb (FG)
Fern (EG)
Other (OG)
N
E
HTE

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used whe 300…). For a ***multi-stemmed tree****, only the largest living stem is included in the count/estimate. T*

For ***hollows****, count only the presence of a stem containing hollows. For a multi-stemmed tree, only count/estimate. Stems may be dead and may be shrubs.*

BAM Attribute (1000 m^2 plot)		
DBH	**# Tree Stems Count**	**# Stems with Hollows**
80 + cm	3	3
50 - 79 cm		
30 - 49 cm	present	
20 - 29 cm		
10 - 19 cm		
5 - 9 cm		
< 5 cm		n/a
Length of logs (m) (≥ 10 cm in diameter, >50cm in length)		0

Field Notes

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

BAM Attribute (1 x 1 m plots)	**Litter cover (%)**				
Subplot score (% in each)	5	10	5	5	5
Average of the 5 subplots	6				

Cover: 0.1, 0.2, 0.3, …, 1, 2, 3, ..., 5, 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m. Abundance: 1, 2, 3, …, 10, 20, 30, … 100, 200, …, 1000, …

GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Natives below this line (see orange row for exotics). *Note: search for species in "Native Species by Growth Form" sheet and copy/paste exact spelling. If unsure when in the field use the 'common name/ field notes' column only.*							
Tree (TG)	Eucalyptus blakelyi		N	15	2		
Tree (TG)	Melia azedarach		N	4	1		
Grass & grasslike (GG)	Cynodon dactylon		N	40	10000		
Grass & grasslike (GG)	Austrostipa verticillata		N	2	10		
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GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Exotics (both E and HTE) below this line. *Note: search for species in "High Threat Weeds" sheet and if a match, copy/paste exact spelling of species name. If unsure when in the field, use 'common name/ field notes' column only.*							
	Verbena bonariensis		E	0.5	10		
	Medicago sativa		E	5	20		
	Convolvulus arvensis		E	3	100		
	Ambrosia artemisiifolia		E	0.1	10		
	Brassica sp		E	0.1	10		
	Centaurea solstitialis		E	0.1	10		
	Sida rhombifolia		E	0.1	10		
	Plantago lanceolata		E	0.1	10		
	Cichorium intybus		E	0.1	3		
	Cenchrus clandestinus		HTE	15	300		
	Bidens pilosa		HTE	0.1	3		
	Chondrilla juncea		E	0.5	4		
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			E				

Plot 2	
Date	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

Zone	Datum	Survey Name	Zone ID				
56	MGA94		2				
Start Easting	Start Northing	Start WP	Recorders	IBRA region	Plot dimensions	Photo #	Midline bearing (degrees)
297745					20x50		221
End Easting	End Northing	End WP					
6556925							

Vegetation Class	Open Woodland (Small Trees)	**Confidence**	
Plant Community Type		**EEC?**	
Plant Community Name			

BAM Attribute (400 m^2 plot)		**Sum values**
Count of **Native Richness**	**Trees**	1
	Shrubs	0
	Grasses etc.	1
	Forbs	1
	Ferns	0
	Other	0
Sum of **Cover** of native vascular plants by growth form group	**Trees**	20
	Shrubs	0
	Grasses etc.	1
	Forbs	0.5
	Ferns	0
	Other	0
High Threat Exotic cover		0

Codes for formulas
Tree (TG)
Shrub (SG)
Grass & grasslike (GG)
Forb (FG)
Fern (EG)
Other (OG)
N
E
HTE

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when >
For a ***multi-stemmed tree****, only the largest living stem is included in the count/estimate.* ***Tree stems***
For ***hollows****, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the*
count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1000 m^2 plot)		
DBH	**# Tree Stems Count**	**# Stems with Hollows**
80 + cm	0	
50 - 79 cm	0	
30 - 49 cm	present	
20 - 29 cm	absent	
10 - 19 cm	absent	
5 - 9 cm	absent	
< 5 cm	present	n/a
Length of logs (m) (≥ 10 cm in diameter, >50cm in length)		0

Field Notes

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

BAM Attribute (1 x 1 m plots)	**Litter cover (%)**				
Subplot score (% in each)	5	10	5	10	5
Average of the 5 subplots	7				

Cover: 0.1, 0.2, 0.3, …, 1, 2, 3, ..., 5, 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m.
Abundance: 1, 2, 3, …, 10, 20, 30, … 100, 200, …, 1000, …

GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Natives below this line (see orange row for exotics). *Note: search for species in "Native Species by Growth Form" sheet and copy/paste exact spelling. If unsure when in the field use the 'common name/ field notes' column only.*							
Tree (TG)	Eucalyptus blakelyi		N	20	2		
Grass & grasslike (GG)	Bothriochloa macra		N	1	10		
Forb (FG)	Wahlenbergia gracilis		N	0.5	10		
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GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Exotics (both E and HTE) below this line. *Note: search for species in "High Threat Weeds" sheet and if a match, copy/paste exact spelling of species name. If unsure when in the field, use 'common name/ field notes' column only.*							
	Glandularia aristigera		E	10	1000		
	Medicago polymorpha		E	75	10000		
	Plantago lanceolata		E	2	10		
	Brassica oleraceus		E	0.5	20		
	Conyza bonariensis		E	0.5	10		
	Cirsium vulgare		E	0.5	5		
	Lolium spp		E	0.5	10		
	Emilia sonchifolia		E	0.5	5		
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Plot 3			

Date							
Zone 56	Datum MGA94	Survey Name	Zone ID 2	*Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.*			
Start Easting 297565	Start Northing	Start WP	Recorders [redacted]	IBRA region	Plot dimensions 20x50	Photo #	Midline bearing (degrees) 349
End Easting 6557002	End Northing	End WP					

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when >
For a ***multi-stemmed tree****, only the largest living stem is included in the count/estimate.* ***Tree stems***
For ***hollows****, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the*
count/estimate. Stems may be dead and may be shrubs.

Vegetation Class	Open Woodland (Small trees)	**Confidence**	
Plant Community Type		**EEC?**	
Plant Community Name			

BAM Attribute (1000 m^2 plot)		
DBH	**# Tree Stems Count**	**# Stems with Hollows**
80 + cm		
50 - 79 cm		
30 - 49 cm	present	
20 - 29 cm	present	
10 - 19 cm	absent	
5 - 9 cm	absent	
< 5 cm	present	n/a
Length of logs (m) (≥ 10 cm in diameter, >50cm in length)		0

BAM Attribute (400 m^2 plot)		**Sum values**
Count of **Native Richness**	**Trees**	1
	Shrubs	2
	Grasses etc.	3
	Forbs	2
	Ferns	0
	Other	0
Sum of **Cover** of native vascular plants by growth form group	**Trees**	15
	Shrubs	0.2
	Grasses etc.	30.6
	Forbs	0.2
	Ferns	0
	Other	0
High Threat Exotic cover		0

Codes for formulas
Tree (TG)
Shrub (SG)
Grass & grasslike (GG)
Forb (FG)
Fern (EG)
Other (OG)
N
E
HTE

Field Notes

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

BAM Attribute (1 x 1 m plots)	**Litter cover (%)**				
Subplot score (% in each)	5	5	5	5	5
Average of the 5 subplots	5				

Cover: 0.1, 0.2, 0.3, …, 1, 2, 3, ..., 5, 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m.
Abundance: 1, 2, 3, …, 10, 20, 30, … 100, 200, …, 1000, …

GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Natives below this line (see orange row for exotics). *Note: search for species in "Native Species by Growth Form" sheet and copy/paste exact spelling. If unsure when in the field use the 'common name/ field notes' column only.*							
Tree (TG)	Eucalyptus blakelyi		N	15	1		
Grass & grasslike (GG)	Cynodon dactylon		N	30	10000		
Forb (FG)	Oxalis exilis		N	0.1	1		
Grass & grasslike (GG)	Bothriochloa macra		N	0.1	1		
Forb (FG)	Neptunia gracilis f. gracilis		N	0.1	1		
Shrub (SG)	Pimelea spp.		N	0.1	50		
Grass & grasslike (GG)	Austrostipa verticillata		N	0.5	10		
Shrub (SG)	Sclerolaena birchii		N	0.1	5		
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GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Exotics (both E and HTE) below this line. *Note: search for species in "High Threat Weeds" sheet and if a match, copy/paste exact spelling of species name. If unsure when in the field, use 'common name/ field notes' column only.*							
	Glandularia aristigera		E	1	50		
	Sida rhombifolia		E	0.5	100		
	Verbena bonariensis		E	0.1	20		
	Centaurea solstitialis		E	0.1	10		
	Plantago lanceolata		E	0.1	10		
	Cencrus clandestinus		E	10	100		
	Euphorbia prostrata		E	0.1	1		
	Chondrilla juncea		E	0.1	1		
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Plot 4						
Date						
Zone 56	Datum MGA94	Survey Name	Zone ID 2	*Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.*		
Start Easting 297617	Start Northing	Start WP	Recorders [redacted]	IBRA region	Plot dimensions 20x50	Photo #
End Easting 6557105	End Northing	End WP				

Midline bearing (degrees): 338

Vegetation Class	Open Woodland (Small Trees)	**Confidence**	
Plant Community Type		**EEC?**	
Plant Community Name			

BAM Attribute (400 m^2 plot)		**Sum values**
Count of **Native Richness**	**Trees**	1
	Shrubs	0
	Grasses etc.	4
	Forbs	1
	Ferns	0
	Other	0
Sum of **Cover** of native vascular plants by growth form group	**Trees**	10
	Shrubs	0
	Grasses etc.	53
	Forbs	0.1
	Ferns	0
	Other	0
High Threat Exotic cover		30

Codes for formulas
Tree (TG)
Shrub (SG)
Grass & grasslike (GG)
Forb (FG)
Fern (EG)
Other (OG)
N
E
HTE

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when >
*For a **multi-stemmed tree**, only the largest living stem is included in the count/estimate. **Tree stems***
*For **hollows**, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the*
count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1000 m^2 plot)		
DBH	**# Tree Stems Count**	**# Stems with Hollows**
80 + cm		
50 - 79 cm		
30 - 49 cm	present	
20 - 29 cm	absent	
10 - 19 cm	absent	
5 - 9 cm	absent	
< 5 cm	absent	n/a
Length of logs (m) (≥ 10 cm in diameter, >50cm in length)		0

Field Notes

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

BAM Attribute (1 x 1 m plots)	**Litter cover (%)**				
Subplot score (% in each)	5	10	5	5	5
Average of the 5 subplots	6				

Cover: 0.1, 0.2, 0.3, …, 1, 2, 3, ..., 5, 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m.
Abundance: 1, 2, 3, …, 10, 20, 30, … 100, 200, …, 1000, …

GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Natives below this line (see orange row for exotics). *Note: search for species in "Native Species by Growth Form" sheet and copy/paste exact spelling. If unsure when in the field use the 'common name/ field notes' column only.*							
Tree (TG)	Eucalyptus blakelyi		N	10	2		
Forb (FG)	Neptunia gracilis f. gracilis		N	0.1	2		
Grass & grasslike (GG)	Rytidosperma bipartitum		N	1	20		
Grass & grasslike (GG)	Austrostipa verticillata		N	7	50		
Grass & grasslike (GG)	Cynodon dactylon		N	40	2000		
Grass & grasslike (GG)	Bothriochloa macra		N	5	200		
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GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Exotics (both E and HTE) below this line. *Note: search for species in "High Threat Weeds" sheet and if a match, copy/paste exact spelling of species name. If unsure when in the field, use 'common name/ field notes' column only.*							
	Glandularia aristigera		E	5	100		
	Convolvulus arvensis		E	0.1	10		
	Plantago lanceolata		E	2	50		
	Sida rhombifolia		E	0.3	100		
	Cenchrus clandestinus		HTE	30	500		
	Centaurea solstitialis		E	0.1	5		
	Chondrilla juncea		E	0.1	1		
	Verbena bonariensis		E	0.1	10		
	Daucus carota		E	0.1	1		
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Plot 5

Date							
Zone 56	Datum MGA94	Survey Name	Zone ID 3	*Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.*			
Start Easting 297828	Start Northing	Start WP	Recorders	IBRA region	Plot dimensions 20x50	Photo #	Midline bearing (degrees) 257
End Easting 6556838	End Northing	End WP					

Vegetation Class	Cleared Grassland	**Confidence**	
Plant Community Type		**EEC?**	
Plant Community Name			

BAM Attribute (400 m² plot)		**Sum values**
Count of **Native Richness**	**Trees**	0
	Shrubs	0
	Grasses etc.	0
	Forbs	0
	Ferns	0
	Other	0
Sum of **Cover** of native vascular plants by growth form group	**Trees**	0
	Shrubs	0
	Grasses etc.	0
	Forbs	0
	Ferns	0
	Other	0
High Threat Exotic cover		0

Codes for formulas
Tree (TG)
Shrub (SG)
Grass & grasslike (GG)
Forb (FG)
Fern (EG)
Other (OG)
N
E
HTE

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when >
*For a **multi-stemmed tree**, only the largest living stem is included in the count/estimate. **Tree stems***
*For **hollows**, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the*
count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1000 m² plot)		
DBH	**# Tree Stems Count**	**# Stems with Hollows**
80 + cm		
50 - 79 cm		
30 - 49 cm	absent	
20 - 29 cm	absent	
10 - 19 cm	absent	
5 - 9 cm	absent	
< 5 cm	absent	n/a
Length of logs (m) (≥ 10 cm in diameter, >50cm in length)		0

Field Notes

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

BAM Attribute (1 x 1 m plots)	**Litter cover (%)**				
Subplot score (% in each)	5	5	5	5	5
Average of the 5 subplots	5				

Cover: 0.1, 0.2, 0.3, …, 1, 2, 3, ..., 5, 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m.
Abundance: 1, 2, 3, …, 10, 20, 30, … 100, 200, …, 1000, …

GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Natives below this line (see orange row for exotics). *Note: search for species in "Native Species by Growth Form" sheet and copy/paste exact spelling. If unsure when in the field use the 'common name/ field notes' column only.*							
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#N/A			#N/A				
GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Exotics (both E and HTE) below this line. *Note: search for species in "High Threat Weeds" sheet and if a match, copy/paste exact spelling of species name. If unsure when in the field, use 'common name/ field notes' column only.*							
	Lolium spp		E	70	3000		
	Medicago sativa		E	15	1000		
	Verbena bonariensis		E	0.5	20		
	Anchusa arvensis		E	0.5	20		
	Centaurea solstitialis		E	0.5	10		
	Cyclospermum leptophyllum		E	1	50		
	Brassica spp		E	5	20		
	Medicago polymorpha		E	10	200		
	Glandularia aristigera		E	15	100		
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Plot 6

Date			
Zone 56	Datum MGA94	Survey Name	Zone ID 3
Start Easting 297944	Start Northing	Start WP	Recorders
End Easting 6556686	End Northing	End WP	

Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.

IBRA region	Plot dimensions	Photo #	Midline bearing (degrees)
			13

Vegetation Class	Cleared Grassland	**Confidence**	
Plant Community Type		**EEC?**	
Plant Community Name			

BAM Attribute (400 m^2 plot)		**Sum values**
Count of **Native Richness**	**Trees**	0
	Shrubs	1
	Grasses etc.	5
	Forbs	0
	Ferns	0
	Other	0
Sum of **Cover** of native vascular plants by growth form group	**Trees**	0
	Shrubs	0.1
	Grasses etc.	50.9
	Forbs	0
	Ferns	0
	Other	0
High Threat Exotic cover		31

Codes for formulas
Tree (TG)
Shrub (SG)
Grass & grasslike (GG)
Forb (FG)
Fern (EG)
Other (OG)
N
E
HTE

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when >
For a ***multi-stemmed tree****, only the largest living stem is included in the count/estimate.* ***Tree stems***
For ***hollows****, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the*
count/estimate. Stems may be dead and may be shrubs.

BAM Attribute (1000 m^2 plot)		
DBH	**# Tree Stems Count**	**# Stems with Hollows**
80 + cm		
50 - 79 cm		
30 - 49 cm	absent	
20 - 29 cm	absent	
10 - 19 cm	absent	
5 - 9 cm	absent	
< 5 cm	absent	n/a
Length of logs (m) (≥ 10 cm in diameter, >50cm in length)		0

Field Notes

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

BAM Attribute (1 x 1 m plots)	**Litter cover (%)**				
Subplot score (% in each)	5	7	5	10	5
Average of the 5 subplots	6.4				

Cover: 0.1, 0.2, 0.3, …, 1, 2, 3, ..., 5, 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m.
Abundance: 1, 2, 3, …, 10, 20, 30, … 100, 200, …, 1000, …

GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Natives below this line (see orange row for exotics). *Note: search for species in "Native Species by Growth Form" sheet and copy/paste exact spelling. If unsure when in the field use the 'common name/ field notes' column only.*							
Grass & grasslike (GG)	Austrostipa verticillata		N	0.2	10		
Grass & grasslike (GG)	Chloris truncata		N	0.1	5		
Grass & grasslike (GG)	Cyperus spp.		N	0.1	5		
Grass & grasslike (GG)	Bothriochloa macra		N	0.5	50		
Grass & grasslike (GG)	Cynodon dactylon		N	50	10000		
Shrub (SG)	Conospermum taxifolium		N	0.1	3		
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GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Exotics (both E and HTE) below this line. *Note: search for species in "High Threat Weeds" sheet and if a match, copy/paste exact spelling of species name. If unsure when in the field, use 'common name/ field notes' column only.*							
	Verbena bonariensis		E	5	100		
	Centaurea solstitialis		E	7	50		
	Medicago sativa		E	10	100		
	Cichorium intybus		E	0.1	10		
	Brassica spp		E	2	40		
	Sida rhombifolia		E	0.1	10		
	Glandularia aristigera		E	0.1	10		
	Convolvulus arvensis		E	0.5	10		
	Lysimachia arvensis		E	0.1	10		
	Cenchrus clandestinus		HTE	30	5000		
	Daucos carota		E	0.1	10		
	Plantago lanceolata		E	0.1	10		
	Phyla canescens		HTE	1	20		
	Hirschfeldia incana		E	0.1	3		
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Plot 7

Date

Zone	Datum	Survey Name	Zone ID				
56	MGA94		3	*Record easting and northing at 0 m on midline. Dimensions (Shape) of 0.04 ha base plot.*			
Start Easting	Start Northing	Start WP	Recorders	IBRA region	Plot dimensions	Photo #	Midline bearing (degrees)
297416	6557049				20x50		71
End Easting	End Northing	End WP					

Counts apply when the number of tree stems within a size class is ≤ 10. Estimates can be used when >
For a ***multi-stemmed tree****, only the largest living stem is included in the count/estimate.* ***Tree stems***
For ***hollows****, count only the presence of a stem containing hollows. For a multi-stemmed tree, only the*
count/estimate. Stems may be dead and may be shrubs.

Vegetation Class	Cleared Grassland	**Confidence**	
Plant Community Type		**EEC?**	
Plant Community Name			

BAM Attribute (1000 m^2 plot)		
DBH	**# Tree Stems Count**	**# Stems with Hollows**
80 + cm		
50 - 79 cm		
30 - 49 cm	absent	
20 - 29 cm	absent	
10 - 19 cm	absent	
5 - 9 cm	absent	
< 5 cm	absent	n/a
Length of logs (m) (≥ 10 cm in diameter, >50cm in length)		0

BAM Attribute (400 m^2 plot)		**Sum values**
Count of **Native Richness**	**Trees**	0
	Shrubs	0
	Grasses etc.	7
	Forbs	2
	Ferns	0
	Other	0
Sum of **Cover** of native vascular plants by growth form group	**Trees**	0
	Shrubs	0
	Grasses etc.	60.9
	Forbs	0.2
	Ferns	0
	Other	0
High Threat Exotic cover		10

Codes for formulas
Tree (TG)
Shrub (SG)
Grass & grasslike (GG)
Forb (FG)
Fern (EG)
Other (OG)
N
E
HTE

Field Notes

Litter cover is assessed as the average percentage ground cover of litter recorded from five 1 m x 1 m plots centred at 5, 15, 25, 35, 45 m along the plot midline. Litter cover includes leaves, seeds, twigs, branchlets and branches (less than 10 cm in diameter). Assessors may also record the cover of rock, bare ground and cryptogams.

BAM Attribute (1 x 1 m plots)	**Litter cover (%)**				
Subplot score (% in each)	5	10	7	5	5
Average of the 5 subplots	6.4				

Cover: 0.1, 0.2, 0.3, …, 1, 2, 3, ..., 5, 10, 15, 20, 25, ...100% (foliage cover); Note: 0.1% cover represents an area of approximately 63 x 63 cm or a circle about 71 cm across, 0.5% cover represents an area of approximately 1.4 x 1.4 m, and 1% = 2.0 x 2.0 m, 5% = 4 x 5 m, 25% = 10 x 10 m.
Abundance: 1, 2, 3, …, 10, 20, 30, … 100, 200, …, 1000, …

GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Natives below this line (see orange row for exotics). *Note: search for species in "Native Species by Growth Form" sheet and copy/paste exact spelling. If unsure when in the field use the 'common name/ field notes' column only.*							
Forb (FG)	Neptunia gracilis f. gracilis		N	0.1	5		
Grass & grasslike (GG)	Austrostipa verticillata		N	10	200		
Grass & grasslike (GG)	Bothriochloa macra		N	0.5	50		
Grass & grasslike (GG)	Cynodon dactylon		N	50	1000		
Grass & grasslike (GG)	Chloris truncata		N	0.1	5		
Forb (FG)	Oxalis exilis		N	0.1	1		
Grass & grasslike (GG)	Rytidosperma bipartitum		N	0.1	5		
Grass & grasslike (GG)	Panicum spp.		N	0.1	1		
Grass & grasslike (GG)	Sporobolus creber		N	0.1	1		
#N/A			#N/A				
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#N/A			#N/A				
GF Code	Species name	Common name/ field notes	N,E or HTE	Cover	Abund	Stratum	Voucher
Exotics (both E and HTE) below this line. *Note: search for species in "High Threat Weeds" sheet and if a match, copy/paste exact spelling of species name. If unsure when in the field, use 'common name/ field notes' column only.*							
	Glandularia aristigera		E	2	100		
	Sida rhombifolia		E	0.5	100		
	Centaurea solstitialis		E	0.1	10		
	Cenchrus clandestinus		HTE	10	500		
	Plantago lanceolata		E	0.1	10		
	Verbena bonariensis		E	0.1	10		
	Cirsium vulgare		E	0.1	10		
	Conyza bonariensis		E	0.1	10		
			E				
			E				
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Appendix C

Additional Information Required for SAII Entities

White Box Yellow Box Blakely's Red Gum Woodland TEC SAII Assessment

- **Status:** Critically Endangered (BC Act)
- **Impact threshold (TBDC):** not stated
- **Population / distribution details:** Trees on the site and associated areas of mostly exotic grassland are representative of White Box Yellow Box Blakely's Red Gum Woodland TEC. This community occurs extensively in the Tamworth locality.
- **Impact:** The proposal would impact 19.97 ha of cleared grassland areas and an additional area (7.06 ha) of scattered small mature trees and associated exotic grassland areas. This vegetation is representative of a low-quality derived form of the TEC.

1. The assessor is required to provide further information in the BDAR or BCAR regarding the impacts on each TEC at risk of an SAII. This must include the action and measures taken to avoid the direct and indirect impact on the TEC at risk of an SAII. Where these have been addressed elsewhere the assessor can refer to the relevant sections of the BDAR and BCAR.

Measures taken as part of the proposal to avoid/ minimise biodiversity impacts are included in **Section 10.1** of the BDAR.

2. The assessor must consult the TBDC and/or other sources to report on the current status of the TEC including:

a. evidence of reduction in geographic distribution (Principle 1, clause 6.7(2)(a) BC Regulation) as the current total geographic extent of the TEC in NSW AND the estimated reduction in geographic extent of the TEC since 1970 (not including impacts of the proposal)

Available estimates on the reduction of this community are available for the pre-European extent but not since 1970. The community is estimated to have been reduced to <1% of its pre-European extent, <4% in the NSW South Western Slopes and Southern Tablelands and <7% remaining in the Holbrook area. The Conservation Advice for the community states that the decline was estimated to be 95% or more (DECCW 2011).

b. extent of reduction in ecological function for the TEC using evidence that describes the degree of environmental degradation or disruption to biotic processes (Principle 2, clause 6.7(2)(b) BC Regulation) indicated by:

i. change in community structure
ii. change in species composition
iii. disruption of ecological processes
iv. invasion and establishment of exotic species
v. degradation of habitat, and
vi. fragmentation of habitat

In some areas such as the site historical disturbance and farming has affected the composition and structure of the community such that all structural layers are not present or there is heavy infestation of exotic species. This may cause disturbance to the soil seedbank such that natural regeneration is unlikely to occur. In such cases there is disruption to the ecological processes of the community.

c. evidence of restricted geographic distribution (Principle 3, clause 6.7(2)(c) BC Regulation), based on the TEC's geographic range in NSW according to the:

i. extent of occurrence

ii. area of occupancy, and

iii. number of threat-defined locations

Principle 3 Not Applicable

d. evidence that the TEC is unlikely to respond to management (Principle 4, clause 6.7(2)(d) BC Regulation).

Principle 4 Not Applicable

3. Where the TBDC indicates data is 'unknown' or 'data deficient' for a TEC for a criterion listed in Subsection 9.1.1(2.), the assessor must record this in the BDAR or BCAR.

Not Applicable.

4. In relation to the impacts from the proposal on the TEC at risk of an SAII, the assessor must include data and information on:

a. the impact on the geographic extent of the TEC (Principles 1 and 3) by estimating the total area of the TEC to be impacted by the proposal:

i. in hectares, and

The proposal would impact 19.97 ha of cleared grassland areas and an additional area (7.11 ha) of scattered small mature trees and associated exotic grassland areas. This vegetation is representative of a low-quality derived form of the TEC.

ii. as a percentage of the current geographic extent of the TEC in NSW.

The subject TEC extends across a large area of NSW not specified in the Scientific Determination and the exact proportion of the community proposed for removal cannot be accurately determined.

b. the extent that the proposed impacts are likely to contribute to further environmental degradation or the disruption of biotic processes (Principle 2) of the TEC by:

i. estimating the size of any remaining, but now isolated, areas of the TEC; including areas of the TEC within 500 m of the development footprint or equivalent area for other types of proposals

Patches of isolated paddock trees and degraded grassland indicative of this TEC occur within 500 m of the site and are the dominant form of vegetation locally. Such areas include degraded riparian vegetation along Timbumburi Creek.

ii. describing the impacts on connectivity and fragmentation of the remaining areas of TEC measured by:

• distance between isolated areas of the TEC, presented as the average distance if the remnant is retained AND the average distance if the remnant is removed as proposed, and

• estimated maximum dispersal distance for native flora species characteristic of the TEC, and

• other information relevant to describing the impact on connectivity and fragmentation, such as the area to perimeter ratio for remaining areas of the TEC as a result of the development

The proposal is unlikely to further fragment or isolate areas of Box Gum Woodland TEC given the very small areas of this community proposed for removal. Connectivity for the local occurrence would be maintained alongside the site within the road reserve.

Dispersal of woodland flora may occur by in a number of ways including seed dispersal by fauna or water. The proposal would not further fragment/ isolate areas of this TEC and create further impediment to seed dispersal given contiguous habitat for this TEC would be maintained/ enhanced alongside the site.

iii. describing the condition of the TEC according to the vegetation integrity score for the relevant vegetation zone(s) (Section 4.3). The assessor must also include the relevant composition, structure and function condition scores for each vegetation zone.

VI and attribute scores for vegetation to be impacted by the proposal are included in Table 4.2.

5. The assessor may also provide new information that demonstrates that the principle identifying that the TEC is at risk of an SAII is not accurate.

NA

Appendix D

BAM Calculator Outputs

BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id
00051963/BAAS18129/24/00051964

Proposal Name
Mayne Drive Westdale Subdivision

BAM data last updated *
28/10/2024

Assessor Name
[redacted]

Assessor Number
[redacted]

BAM Data version *
Current classification (live - default) (80)

Proponent Names

Report Created
10/03/2025

BAM Case Status
Finalised

Assessment Revision
1

BOS entry trigger
BOS Threshold: Area clearing threshold

Assessment Type
Part 4 Developments (General)

Date Finalised
10/03/2025

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
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 Highla	Critically Endangered Ecological Community	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion

Species
Nil

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
No Changes

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

BAM Biodiversity Credit Report (Like for like)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion	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 Highla	27.0	0	85	85

599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion

Like-for-like credit retirement options

Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
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 Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347,	-	599_Zone_2_Modified_B	No	85	Peel, Eastern Nandewars, Hunter, Inverell Basalts, Kaputar, Liverpool Plains, Liverpool Range, Northern Basalts, Tomalla and Walcha Plateau. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

	350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 516, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					
	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland,	-	599_Zone_3_Derived	No	0	Peel, Eastern Nandewars, Hunter, Inverell Basalts, Kaputar, Liverpool Plains, Liverpool Range, Northern Basalts, Tomalla and Walcha Plateau. or Any IBRA subregion that is within 100 kilometers of the outer edge of the

	Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 516, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399,					impacted site.

	3406, 3415, 3533, 4147, 4149, 4150					

Species Credit Summary

No Species Credit Data

Credit Retirement Options

Like-for-like credit retirement options

BAM Biodiversity Credit Report (Variations)

Proposal Details

Assessment Id

00051963/BAAS18129/24/00051964

Proposal Name

Mayne Drive Westdale Subdivision

BAM data last updated *

28/10/2024

Assessor Name

[redacted]

Assessor Number

[redacted]

BAM Data version *

Current classification (live - default) (80)

Proponent Name(s)

Report Created

10/03/2025

BAM Case Status

Finalised

Assessment Revision

1

BOS entry trigger

BOS Threshold: Area clearing threshold

Assessment Type

Part 4 Developments (General)

Date Finalised

10/03/2025

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
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 Highla	Critically Endangered Ecological Community	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion

Species
Nil

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT
No Changes

Predicted Threatened Species Not On Site

Name
No Changes

Ecosystem Credit Summary (Number and class of biodiversity credits to be retired)

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion	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 Highla	27.0	0	85	85.00

599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion

Like-for-like credit retirement options

Class	Trading group	Zone	HBT	Credits	IBRA region
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New	-	599_Zone_2_Modified_B	No	85	Peel,Eastern Nandewars, Hunter, Inverell Basalts, Kaputar, Liverpool Plains, Liverpool Range, Northern Basalts, Tomalla and Walcha Plateau. or

	England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 516, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396, 3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	White Box - Yellow Box -	-	599_Zone_	No	0	Peel,Eastern Nandewars, Hunter, Inverell

	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 Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 350, 352, 356, 367, 381, 382, 395, 401, 403, 421, 433, 434, 435, 436, 437, 451, 483, 484, 488, 492, 496, 508, 509, 510, 511, 516, 528, 538, 544, 563, 567, 571, 589, 590, 597, 599, 618, 619, 622, 633, 654, 702, 703, 704, 705, 710, 711, 796, 797, 799, 847, 851, 921, 1099, 1303, 1304, 1307, 1324, 1329, 1330, 1332, 1383, 1606, 1608, 1611, 1691, 1693, 1695, 1698, 3314, 3359, 3363, 3373, 3376, 3387, 3388, 3394, 3395, 3396,		3_Derived			Basalts, Kaputar, Liverpool Plains, Liverpool Range, Northern Basalts, Tomalla and Walcha Plateau. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

	3397, 3398, 3399, 3406, 3415, 3533, 4147, 4149, 4150					

Species Credit Summary

No Species Credit Data

Credit Retirement Options

Like-for-like options

BAM Candidate Species Report

Proposal Details

Assessment Id 00051963/BAAS18129/24/00051964	Proposal Name Mayne Drive Westdale Subdivision	BAM data last updated * 28/10/2024
Assessor Name [redacted]	Report Created 10/03/2025	BAM Data version * Current classification (live - default) (80)
Assessor Number [redacted]	Assessment Type Part 4 Developments (General)	BAM Case Status Finalised
Assessment Revision 1	BOS entry trigger BOS Threshold: Area clearing threshold	Date Finalised 10/03/2025

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

List of Species Requiring Survey

Name	Presence	Survey Months
Acacia atrox Myall Creek Wattle	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☑ Dec ☐ Survey month outside the specified months?
Adelotus brevis - endangered population Tusked Frog population in the Nandewar and New England Tableland Bioregions	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☑ Dec ☐ Survey month outside the specified months?
Callistemon pungens Callistemon pungens	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☑ Dec ☐ Survey month outside the specified months?

Dichanthium setosum Bluegrass	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☑ Dec ☐ Survey month outside the specified months?
Digitaria porrecta Finger Panic Grass	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Euphrasia arguta Euphrasia arguta	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☑ Dec ☐ Survey month outside the specified months?
Haliaeetus leucogaster White-bellied Sea-Eagle	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☑ Dec ☐ Survey month outside the specified months?
Homopholis belsonii Belson's Panic	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☑ Dec ☐ Survey month outside the specified months?
Petaurus norfolcensis Squirrel Glider	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?

Phascolarctos cinereus Koala	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Picris evae Hawkweed	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☑ Dec ☐ Survey month outside the specified months?
Prasophyllum sp. Wybong Prasophyllum sp. Wybong	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Swainsona sericea Silky Swainson-pea	No (surveyed)	☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☑ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Thesium australe Austral Toadflax	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☑ Dec ☐ Survey month outside the specified months?
Tylophora linearis Tylophora linearis	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☑ Dec ☐ Survey month outside the specified months?

Uvidicolus sphyrurus Border Thick-tailed Gecko	No (surveyed)	☐ Jan ☑ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☑ Dec ☐ Survey month outside the specified months?

Threatened species Manually Added

None added

Threatened species assessed as not on site

Refer to BAR for detailed justification

Common name	Scientific name	Justification in the BAM-C
Booroolong Frog	Litoria booroolongensis	Refer to BAR
Grey-headed Flying-fox	Pteropus poliocephalus	Habitat constraints
Large Bent-winged Bat	Miniopterus orianae oceanensis	Habitat constraints
Pink-tailed Legless Lizard	Aprasia parapulchella	Habitat constraints
Regent Honeyeater	Anthochaera phrygia	Habitat constraints
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	Habitat constraints
Swift Parrot	Lathamus discolor	Habitat constraints

BAM Credit Summary Report

Proposal Details

Assessment Id
00051963/BAAS18129/24/00051964

Proposal Name
Mayne Drive Westdale Subdivision

BAM data last updated *
28/10/2024

Assessor Name
[redacted]

Report Created
10/03/2025

BAM Data version *
Current classification (live - default) (80)

Assessor Number
[redacted]

BAM Case Status
Finalised

Date Finalised
10/03/2025

Assessment Revision
1

BOS entry trigger
BOS Threshold: Area clearing threshold

Assessment Type
Part 4 Developments (General)

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAII	Ecosystem credits

Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion												
1	599_Zone_2_Modified_B	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 Highla	19.4	19.4	7.1	Population size	High Sensitivity to Gain	Critically Endangered Ecological Community	Not Listed	2.50	True	85

2	599_Zone_3_Derived	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 Highla	8.3	8.3	20	Population size	High Sensitivity to Gain	Critically Endangered Ecological Community	Not Listed	2.50	True	0
											Subtotal	**85**
											Total	**85**

Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAII	Species credits

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00051963/BAAS18129/24/00051964	Mayne Drive Westdale Subdivision	28/10/2024
Assessor Name	**Report Created**	**BAM Data version ***
[redacted]	10/03/2025	Current classification (live - default) (80)
Assessor Number	**Assessment Type**	**BAM Case Status**
[redacted]	Part 4 Developments (General)	Finalised
Assessment Revision	**BOS entry trigger**	**Date Finalised**
1	BOS Threshold: Area clearing threshold	10/03/2025

* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

Threatened species reliably predicted to utilise the site. No surveys are required for these species. Ecosystem credits apply to these species.

Common Name	Scientific Name	Vegetation Types(s)
Black Falcon	Falco subniger	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
Brown Treecreeper (eastern subspecies)	Climacteris picumnus victoriae	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
Diamond Firetail	Stagonopleura guttata	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
Dusky Woodswallow	Artamus cyanopterus cyanopterus	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
Flame Robin	Petroica phoenicea	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
Grey-crowned Babbler (eastern subspecies)	Pomatostomus temporalis temporalis	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion

Grey-headed Flying-fox	Pteropus poliocephalus	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
Large Bent-winged Bat	Miniopterus orianae oceanensis	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
Little Lorikeet	Glossopsitta pusilla	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
Regent Honeyeater	Anthochaera phrygia	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
South-eastern Glossy Black-Cockatoo	Calyptorhynchus lathami lathami	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
South-eastern Hooded Robin	Melanodryas cucullata cucullata	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
Speckled Warbler	Chthonicola sagittata	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
Spotted-tailed Quoll	Dasyurus maculatus	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
Swift Parrot	Lathamus discolor	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
White-bellied Sea-Eagle	Haliaeetus leucogaster	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion
White-throated Needletail	Hirundapus caudacutus	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion

Threatened species Manually Added

None added

Threatened species assessed as not within the vegetation zone(s) for the PCT(s)

Refer to BAR for detailed justification

Common Name	Scientific Name	Justification in the BAM-C

BAM Vegetation Zones Report

Proposal Details

Assessment Id
00051963/BAAS18129/24/00051964

Assessment name
Mayne Drive Westdale Subdivision

BAM data last updated *
28/10/2024

Assessor Name
[redacted]

Report Created
10/03/2025

BAM Data version *
Current classification (live - default) (80)

Assessor Number
[redacted]

Assessment Type
Part 4 Developments (General)

BAM Case Status
Finalised

Assessment Revision
1

BOS entry trigger
BOS Threshold: Area clearing threshold

Date Finalised
10/03/2025

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Vegetation Zones

#	Name	PCT	Condition	Area	Minimum number of plots	Management zones
1	599_Zone_2_Modified_B	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion	Zone_2_Modified_B	7.06	3	

2	599_Zone_3_Derived	599-Blakely's Red Gum - Yellow Box grassy tall woodland on flats and hills in the Brigalow Belt South Bioregion and Nandewar Bioregion	Zone_3_Derived	19.97	3	