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Biodiversity Assessment Report

Proposed 25 Lot Residential Subdivision

86 Back Creek Road, Young, NSW.

Lot 28 DP 754611

October 2024

Version	Final
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Contents

1. Introduction

1.1. Background

This report has been prepared by Macrozamia Environmental on behalf of the proponent of a proposed 25 lot residential subdivision of a 2.5ha parcel of rural land adjoining the residential area of Young in the Southern Tablelands of NSW, in the Hilltops Local Government Area. The land is largely vacant and has a long history of agricultural uses and most recently the keeping of horses. Various structures associated with these uses are present though are largely in a dilapidated state. Other existing development includes internal and boundary fencing, earthworks and site accesses. The subject lot is adjoined on the western side by Back Creek Road, a sealed Council road and on the southern and eastern boundaries by an unsealed Crown road, the proposal includes upgrades of this Crown road.

The proponent intends to subdivide the subject land for the purposes of developing 26 residential lots ranging in size from 791m^2 to 1182m^2 serviced with reticulated power water and sewerage services. Along with the creation of these lots a short street and cul-de-sac would be constructed servicing proposed Lots 14 to 25 along with the upgrading the adjoining Crown road including realignment, sealing and kerb and gutter.

Scattered native trees occur on the subject lot as well as along the Crown Road, some of this vegetation would be cleared to facilitate the works however the proposal has considered biodiversity values and aimed to minimise impacts where possible.

The development makes use of existing cleared land and has endeavoured to retain trees that are most suitable to a residential area. The vast majority of vegetation on the development area is cleared exotic grassland managed for many years as pasture.

The works occur in an over-cleared landscape dominated by grazing enterprises, land uses that have carried on in the district for over 200 years, lands nearby the project area have been more recently developed for large lot rural residential and residential uses.

This Biodiversity Assessment Report considers the potential impacts of the proposal on biodiversity matters including during the construction and operation phases of the development and both direct and indirect impacts.

Terminology used in this report aims to be consistent with the NSW Biodiversity Assessment Method 2020;

Assessment area refers to the local environment, surrounding the subject land within a buffer distance of 1500m of the subject land.

Subject land refers to the parcel of land containing the proposed development, in this case it is the whole of Lot 28 DP 754611 and immediately adjoining Crown roads.

Development footprint refers to the areas of direct impacts of the proposal, it includes the footprint of the development and any ancillary works. In this case the area of all proposed works including access tracks, building envelopes and effluent management areas. Temporary works including stockpile areas are also included however for this development these are contained within the above footprint.

The proposal location and subject land are identified on Map 1-1 of this report and the development footprint is detailed in the concept plans at Appendix 1 and detailed further in the SEE.

1.2. Site Description

The assessment area occurs in a rural township environment in the Southern Tablelands of NSW and has a long history of agricultural use, typically grazing. The vast majority of the lowlands in this landscape have been cleared of native vegetation and sown to pasture. Native woodlands, typically boxgum woodland remnants persist in the landscape. The subject land

occurs in a transition area that has moved from a rural grazing environment to large lot rural residential, immediately to the north of the subject land residential areas of the Township of Young occur.

Lot 28 DP 754611 has been cleared of most native vegetation in the past and managed for agriculture for many years in more recent decades it has been used for keeping horses. The pasture has been improved and aerial imagery shows the site has been worked extensively. Several dilapidated remains of agricultural infrastructure are present as well as earthworks. Several mature eucalypts are present however other native species are sparse to absent.

The Crown road adjoining the eastern and southern boundaries of Lot 28 DP 754611 supports an unsealed road of variable width and alignment as well as earthen drainage. Native woodland vegetation occurs particularly on the eastern side. While the majority of the understory and groundcover in the road reserve is exotic dominant some areas support native dominant derived native grassland. Some plantings od non indigenous natives has also occurred.

No areas of outstanding biodiversity value, as identified under the BC Act, occur within the subject land, assessment area or nearby.

1.3. Aims of this Report

The purpose of this report is to identify and assess the terrestrial biodiversity, including flora, fauna and ecological communities occurring in the study area and the likely impacts of the proposed development on these matters, with consideration of the site's landscape context. This report addresses the legislative framework below;

i. The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
    a. Biodiversity Matters of National Environmental Significance

       Identification of protected matters at risk of impact and assessment of significance of any impact

ii. *NSW Biodiversity Conservation Act 2016* (BC Act)
    a. Part 4, Divisions 2 and 5

       Consideration of listed species, ecological communities and key threatening processes to be considered under s7.3

    b. Section 7.3

       Test of Significance, for determining whether proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats

iii. *State Environmental Planning Policy (Biodiversity and Conservation) 2021*
    a. Chapter 3 Koala habitat protection 2020 &
    b. Chapter 4 Koala habitat protection 2021

The B&C SEPP 2021 has been addressed in Section 6 of this report.

iv. *Hilltops Local Environmental Plan 2022* (LEP)
    a. Clause 6.3 – Terrestrial Biodiversity

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

       protecting native fauna and flora, and

(b) protecting the ecological processes necessary for their continued existence, and

(c) encouraging the conservation and recovery of native fauna and flora and their habitats.

This clause applies to development on land that is identified as “Biodiversity” on the Terrestrial Biodiversity Map.

Parts of the subject land are mapped as ‘Biodiversity’ by this LEP map. Clause 6.3 – Terrestrial Biodiversity is addressed throughout this BAR.

In summary, this Biodiversity Assessment Report aims to

- Provide a description of the subject site and study area
- Describe the methods used to assess biodiversity
- Identify the key flora and fauna species & vegetation communities present in the study area, including an assessment of potential habitat values of the site and their interaction with habitats outside the study area
- Identifies the listed threatened species, populations migratory species & ecological communities with potential to occur in the study area
- Define the potential impacts of the proposal on biodiversity and assess the significance of potential impacts on threatened species, populations and ecological communities and migratory species &
- Meet the requirements of the environmental planning framework above.

It is important to note that note all species that occur on or use this site, particularly fauna, could be identified without an extended survey period of several seasons and over numerous site visits. A survey of this extent is beyond the scope of this assessment. To compensate for this, habitats have been assessed with consideration of potentially occurring species applying the principle, particularly in relation to listed matters.

1.4. Description of Proposal

It is intended that works will be completed in the 2025 calendar year depending on the proponent’s operational schedule and competing priorities. The proposal is to develop the subject land through subdivision of one holding consisting of one holding, Lot 28 DP 754611 into 26 residential lots each serviced by reticulated power, water and sewerage services, the construction of a short road and cul-de-sac and upgrades to adjoining unsealed roads.

The proposal would require clearing of native trees where they are not suited to a residential environment and pose a safety threat.

Temporary development during construction will include erosion and sediment controls and stockpiling & plant parking areas. These are contained within the development area.

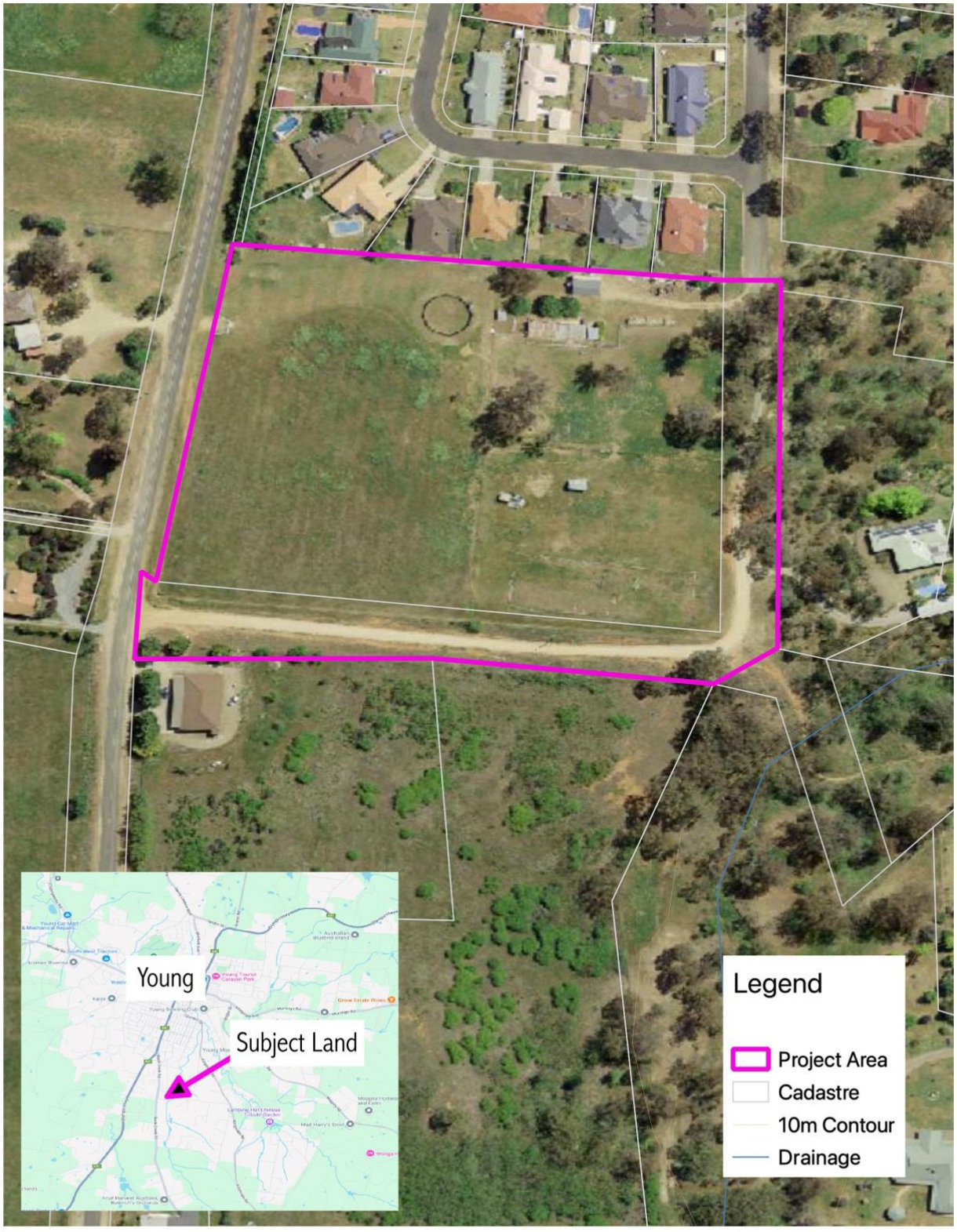
Specific details of the proposal are available in Appendix 1 Concept Plan and the Statement of Environmental Effects.

The scope of the works is summarised as follows;

- Completion of design and planning approvals/ licences, permits, as required
- Installation and maintenance of temporary erosion and sediment controls
- Clearing and grubbing as required
- Construction of civil works and services including roads, stormwater drainage, reticulated water and sewerage infrastructure and power
- Street/ landscaping works

- Post construction works including clean-up and site rehabilitation
- Removal of temporary erosion and sediment controls
- Completion of subdivision works certificate requirements, attainment of subdivision certificate & registration of subdivision
- Operation of development.

This Biodiversity Assessment considers the potential impact on flora and fauna of the proposal including matters protected under legislation. The impact assessment is based on construction requirements of the project including any removal of vegetation, earthworks, construction methodology, temporary facilities and intended subsequent land use.



Macrozamia Environmental

Map 1-1
Subject Land and Locality

0 50 100 m

2. Methods

2.1. Literature and Database Review

The study area and its landscape context were considered through a literature and database review in preparation for field survey and to inform survey aims and threatened biodiversity assessments. Aerial photography, NSW Government GIS data and NSW & Commonwealth databases as well as Macrozamia Environmental's records from previous surveys all informed this review, the following sources being key to this assessment;

- Current versions of legislation referred to in section 1.3 of this Biodiversity Assessment, NSW Legislation website
- Commonwealth Government Species Profiles and Threats (SPRAT) database http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl
- Commonwealth Department of Climate Change, Energy, the Environment and Water Protected Matters Search Tool https://pmst.awe.gov.au/#/map?lng=131.50634765625003&lat=-28.671310915880834&zoom=5&baseLayers=Imagery,ImageryLabels
- NSW Threatened Biodiversity Database Collection (TBDC) https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/nsw-bionet
- Australia's IBRA Bioregions and sub-bioregions http://environment.gov.au/land/nrs/science/ibra/australias-bioregions-maps
- Department of Environment and Climate Change NSW (DECC) (2002). Descriptions for NSW (Mitchell) Landscapes, Version 2.
- NSW Government SEED Mapping & SEED Layer Intersection Tool
- ePlanning spatial viewer https://www.planningportal.nsw.gov.au/spatialviewer
- NSW Biodiversity Values Map
- State Vegetation Type Map (SVTM) Dec 2023
- NSW Spatial Services SixMaps https://maps.six.nsw.gov.au
- Hilltops Local Environment Plan 2022

Wherever applicable, NSW and Commonwealth government policies and guidelines have been adopted in the undertaking of this assessment, the following have been key to preparation of this assessment;

- Threatened Species Test of Significance Guidelines NSW Office of Environment and Heritage 2018
- The EPBC Act Matters of National Environmental Significance: Significant Impact Guidelines, Department of Environment, Water, Heritage and the Arts 2013.

Threatened species, populations and migratory species that were recorded within 10km of the study area in the BioNet Atlas of NSW Wildlife and listed in the EPBC Protected Matters Search Tool were considered for their likelihood of occurrence in the study area the following factors informed this assessment;

- The location, habitats and dates of records
- Habitat within the study area and habitats in the landscape including the continuity of suitable habitats for the matter under consideration
- Scientific literature pertaining to each matter and applying ecological knowledge to the assessment.

The potential for each threatened matter or migratory species to occur was then considered and the necessity for targeted field surveys was determined. Following field surveys and review of habitat occurring in the study area, the potential for species, communities or populations to use the study area or to be impacted directly or indirectly by the proposal was assessed, this assessment is summarised in the table at Appendix 3 of this report.

2.2. Field Survey

The study area was surveyed by an ecologist on 10 October 2024 from late afternoon. Conditions were clear and warm to hot, no recent rain had fallen however rainfall has been more than typical over the past three years which could impact the range of flora recorded.

Conditions were adequate for opportunistic fauna survey, an assessment of habitats present was made that also sufficiently considers the potential for fauna to occur on the site in the vicinity of areas at risk of impact by the proposal.

Surveys were adequate for and of sufficient time to satisfactorily assess each vegetation community in the vicinity of the project impact area, effort was focused on areas of direct impact of the proposal particularly the development footprint, along existing access tracks, proposed dwelling and bushfire asset protection zones. Other areas of the study area were also inspected briefly as practical to confirm vegetation communities present, potential weed issues, habitats available including artificial structures and potential for threatened matters occurring.

During site inspections the study area was defined, vegetation communities mapped and notes made on the flora and fauna species identified within and adjacent to the impact area of the proposal. A photo/ videographic record including using RPA photography was made aiding in documenting the site characteristics and confirming flora identification.

2.3. Flora and Vegetation Communities

All flora and fauna species identified were recorded along with ecological communities and habitat components occurring on the site.

Flora was surveyed using the random meander technique (Cropper 1993) focusing on each vegetation community occurring in the impact areas. Notes were made of individual plant species present and vegetation communities mapped and defined then compared with OEH defined Plant Community Types and checked against described listed vegetation communities.

Targeted surveys were undertaken for threatened species of plants that were considered to have potential to occur on the site based on desktop research or where habitats on site were found to be suitable.

Floral nomenclature is consistent with The Plant Information Network System of The Royal Botanic Gardens and Domain Trust PlantNET online resource.

2.4. Fauna and Fauna Habitats

Incidental fauna survey was undertaken for birds, amphibians, reptiles and mammals, which included opportunistic observations of fauna, active searching of signs of direct and indirect occurrence including scats, tracks, scratch & feeding marks, burrows, calls, pellets and remnants such as bones, fur and feathers.

Where suitable habitat components were present, targeted searches were undertaken for fauna presence or signs of past presence. For example loose rocks and timber were lifted in search of reptiles and rocky areas observing for basking reptiles, wet areas were approached quietly to listen for frogs and in suitable habitat bird calls were used for identification.

Habitat components that may be used for foraging, roosting, breeding or nesting by any potentially occurring fauna were considered, along with the continuity of habitat present within

the study area as well as stepping stone or corridor habitat that may connect the study area to other parts of the landscape, particularly to areas of quality habitat and biodiverse areas or conservation areas.

Habitat surveys targeted tree hollows, stags, bird nests, possum dreys, decorticating bark, rock shelters, rock outcrops / crevices, mature / old growth trees, food species particularly nectar producing and palatable species such as mistletoes and proteaceae species.

Where present, artificial structures such as culverts, dams, service pits and structures were also considered for their habitat value.

Faunal nomenclature is consistent with;

- Cogger, H. (1992). Reptiles and Amphibians of Australia, Revised Edition. Reed, Sydney.
- Morcombe, M. (2000). Field Guide to Australian Birds. Steve Parish Publishing Pty Ltd, Queensland.
- Strahan, R. (1995). The Mammals of Australia. Australian Museum/Reed Books, Syd.

2.5. Survey Limitations

The flora survey aimed to record all the key and most frequent species occurring on the study area in order to accurately describe vegetation characteristics and classify plant community types present as well as all important weed species. Beyond this, as many flora species as practically could be recorded were. Despite this, a definitive list of the flora occurring in the study area cannot be derived without structured surveys over several seasons. Such survey effort is beyond the scope of this assessment given past land uses on the site, its degraded nature and the minimal nature of the proposal's impacts.

Surveys were adequate to determine native vegetation extent and therefore to calculate native vegetation clearing, the potentially reduced species richness detected does not result in environmental planning implications.

Despite these limitations the biodiversity assessment undertaken for flora, vegetation communities and fauna is adequate to undertake appropriate biodiversity impact assessment. Further flora species would be recorded during longer surveys over different seasons however sufficient data has been collected to detect flora and habitats of threatened matters.

Biodiversity survey following OEH's published threatened species survey and assessment guidelines was not undertaken as sufficient detail to determine the likelihood of occurrence of threatened species and communities as well as potentially occurring migratory species for the purposes of this assessment has been achieved through flora and habitat assessment during the field survey.

3. Results

3.1. Literature and Database Review

Desktop assessment has identified the following characteristics of the site;

3.1.1. Interim Biogeographic Regionalisation for Australia Version 7

The Interim Biogeographic Regionalisation for Australia (IBRA) is a geospatial system for categorising landscapes into assemblages of common characteristics including climate, geology, landform, native vegetation and species assemblages. The 89 IBRA regions are further apportioned into a total of 419 subregions across the continent which are more localised and homogenous geomorphological divisions.

This system of categorisation based on broad environmental features enables for more effective management biodiversity and helps to define Plant Community Types as well as predict likelihood of threatened species and communities occurring.

The subject land occurs in the Northern Inland Slopes, Upper Slopes Subregion of the South Western Slopes IBRA region, it does not occur close to subregion boundaries.

3.1.2. Landform and drainage

The study area occurs at an elevation of 460m amsl and gently slopes down to the east, all surrounding lands are developed and artificially drained, as a result the subject land is not subject to run-on water. No surface water features are present.

Receiving waters include the second order stream, Petticoat Gully draining to Sawpit Gully and Burrangong Creek, part of the Lachlan sub-catchment of the Murrumbidgee catchment within the Murray–Darling basin.

3.1.3. Soils and geology

The NSW Soil and Land Information Soil Landscape Mapping maps the subject land as the “Young” Soil Landscape. This soil landscape is found over 328.2 km2 within the Crowther physiographic region. It is similar to the Crowther (cr) soil landscape other than crests and upper slopes being influenced by parna. The geology is Silurian Young Formation granodiorite, often porphyritic in quartz, plagioclase and more rarely in K-feldspar and biotite. Colluvium and alluvium derived from these materials occur on lower slopes. Much of the upper slope areas have been influenced by parna, <2m deep in areas. the Landform is undulating low hills with slopes from 3–5% on waxing hillslopes and crests, 5–10% on mid to upper waning to waxing hillslopes and <5% on lower hillslopes and footslopes. Elevation ranges from 440–557 m with local relief from 30–80 m. Slope lengths are variable and typically range from 700–1 500 m. Rock outcrop (2–10%) occurs on most upper slopes, crests and ridgelines. Stream channels are well-defined and are erosional, tributary and moderately spaced.

The vegetation is described as extensively to totally cleared open Eucalypt woodlands. The majority of native vegetation has been cleared for agricultural development and only remnants of the original communities remain. Eucalyptus albens (white box) communities occur on mid to upper slopes with Brachychiton populneus (Kurrajong). E. blakelyi (Blakely’s red gum) and E. melliodora (yellow box) occur in association with E. albens on mid to lower slopes. E. bridgesiana (apple box) are also present. The understorey consists of shrubs including Acacia baileyana (Cootamundra wattle), A. deanei (green wattle), A. mearnsii (black wattle), A. decora (western silver wattle), A. dealbata (silver wattle), A. polybotrya (western silver wattle), Grevillea floribunda (rusty spider flower) and Dodonaea viscosa (hop-bush). Groundcover of tussock grasses and forbs includes Themeda australis (kangaroo grass), Bothriochloa macra (red grass), Austrodanthonia spp. (wallaby grass) and Poa spp. (tussock grass).

Observations on the assessment area and landscape were found to be generally consistent with these descriptions

Soils across the site are largely stable protected by good vegetative cover, no areas were observed as being at risk of accelerated erosion.

3.1.4. Environmental planning

3.1.4.1. Hilltops Local Environmental Plan 2022 (LEP)

Land Use Table

Under this instrument the subject land is zoned R1 General Residential, this zoning exists to provide housing needs to the community and provide for a variety of housing types and densities.

LEP Clause 6.3 Terrestrial biodiversity

Parts of the subject land is mapped by the LEP as "*Biodiversity*", as such Clause 6.3 Terrestrial biodiversity applies.

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

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

Under this Clause;

(3) In deciding whether to grant development consent for development on land to which this clause applies, the consent authority must consider —

(a) whether the development is likely to have—

(i) an adverse impact on the habitat, condition, ecological value and significance of threatened species, populations or ecological communities on the land, and

(ii) an adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and

(iii) the potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and

(iv) an adverse impact on a regionally significant species of fauna or flora, or habitat, and

(iv) an adverse impact on the habitat elements providing connectivity on the land, and

(b) appropriate measures to avoid, minimise or mitigate the impacts of the development.

(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied—

(a) the development is designed, sited and will be managed to avoid a significant adverse environmental impact, or

(b) if a significant adverse environmental impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise the impact, or

(c) if a significant adverse environmental impact cannot be minimised—the development will be managed to mitigate the impact.

Requirements of this Clause is addressed throughout this report.

The proposed development has been designed, sited and managed to avoid potential adverse environmental impacts, effective measures are incorporated to minimise adverse impacts and

are detailed in Section 9 of this report. The proponent considered alternatives for siting the works and subsequently determined that the least impact to biodiversity would result from the currently proposed design.

3.1.4.2. The State Environmental Planning Policy (Biodiversity and Conservation) 2021

The State Environmental Planning Policy (Biodiversity and Conservation) 2021 (BC SEPP) consolidates several repealed SEPPs that help to manage conservation of biodiversity.

Chapter 4 Koala habitat protection 2021 applies to the land due to its R1 land zoning.

This Chapter 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. As no approved koala plan of management exists for the land, the following clause applies;

> *4.9 Development assessment process—no approved koala plan of management for land*
>
> *(1) This section applies to land to which this Chapter applies if the land—*
>
> *(a) has an area of at least 1 hectare (including adjoining land within the same ownership), and*
>
> *(b) does not have an approved koala plan of management applying to the land.*
>
> *(2) Before a council may grant consent to a development application for consent to carry out development on the land, the council must assess whether the development is likely to have any impact on koalas or koala habitat.*
>
> *(3) If the council is satisfied that the development is likely to have low or no impact on koalas or koala habitat, the council may grant consent to the development application.*
>
> *(4) If the council is satisfied that the development is likely to have a higher level of impact on koalas or koala habitat, the council must, in deciding whether to grant consent to the development application, take into account a koala assessment report for the development.*
>
> *(5) However, despite subsections (3) and (4), the council may grant development consent if the applicant provides to the council—*
>
> *(a) information, prepared by a suitably qualified and experienced person, the council is satisfied demonstrates that the land subject of the development application—*
>
> *(i) does not include any trees belonging to the koala use tree species listed in Schedule 3 for the relevant koala management area, or*
>
> *(ii) is not core koala habitat, or*
>
> *(b) information the council is satisfied demonstrates that the land subject of the development application—*
>
> *(i) does not include any trees with a diameter at breast height over bark of more than 10 centimetres, or*
>
> *(ii) includes only horticultural or agricultural plantations.*

Eucalypt trees occur on the subject land and they could potentially be used by koalas. It is unlikely however that the trees present on the subject site and nearby are of sufficient abundance and continuity to support a koala population.

This SEPP is addressed in Section 6 of this report.

3.1.4.3. NSW Biodiversity Conservation Act 2016

The NSW Biodiversity Conservation Act 2016 (BC Act) has been designed to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. It is a broad legislative tool and the key piece of NSW legislation addressing conservation matters in the state. In terms of development impact assessment and planning, the BC Act works in conjunction with the EP&A Act to deliver the NSW Biodiversity Assessment Method and the Test of Significance assessment for threatened biodiversity matters as well as the listings of threatened matters and key threatening processes.

Clause 7.2 (1) defines *"likely to significantly affect threatened species"* as;

> *(1) For the purposes of this Part, development or an activity is likely to significantly affect threatened species if—*
>
> *(a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3, or*
>
> *(b) the development exceeds the biodiversity offsets scheme threshold if the biodiversity offsets scheme applies to the impacts of the development on biodiversity values, or*
>
> *(c) it is carried out in a declared area of outstanding biodiversity value.*

An inventory of BC Act listed matters that occur or may occur in the landscape of the project site has been curated in Appendix 3 of this report. Based on the biology of each matter, its known geographic range and nearby records an assessment of risk of impact on the matter has been made, any matter that has been determined as having a real chance or possibility of being impacted has been further assessed through a Test of Significance;

7.3 Test for determining whether proposed development or activity likely to significantly affect threatened species or ecological communities, or their habitats

> *(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats—*
>
> *(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,*
>
> *(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity—*
>
> *(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or*
>
> *(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,*
>
> *(c) in relation to the habitat of a threatened species or ecological community—*
>
> *(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and*
>
> *(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and*
>
> *(iii) the importance of the habitat to be removed, modified, fragmented or isolated to*

the long-term survival of the species or ecological community in the locality,

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

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

Section 4, Threatened Species Populations & Ecological Communities, of this report addresses findings of desktop review of threatened biodiversity.

3.1.4.4. Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) specifies that approval is required from the Commonwealth Minister for the Environment for actions that have, will have or are likely to have a significant impact on a matter of "national environmental significance".

The Act identifies nine matters of national environmental significance being:

1) World Heritage properties
2) National heritage places
3) Wetlands of international importance (Ramsar wetlands)
4) Threatened species and ecological communities
5) Migratory species
6) Commonwealth marine areas
7) Nuclear actions (including uranium mining)
8) Great Barrier Reef Marine Park
9) Water impacts from coal seam gas and large coal mining actions

Matters number 4 (Threatened species, ecological communities) and 5 (Migratory species) are relevant to this proposal and have been addressed along with BC Act listed matters. Section 5 of this report addresses the EPBC Act.

3.1.5. Application of the Biodiversity Assessment Method

The BC Act provides a series of native vegetation clearing thresholds and the Biodiversity Values Map (BVM) to determine the necessity for the impacts on biodiversity of a development to be assessed under the Biodiversity Assessment Method (BAM) and entry to the BC Act's Biodiversity Offset Scheme (BOS). The thresholds are a native vegetation area clearing trigger, the Biodiversity Values Map trigger and the significant impact to listed matters trigger, while these triggers do not apply to Part V projects as they do to Part IV each are detailed below.

1. **Native vegetation area clearing trigger;**

On the subject land the native vegetation clearing threshold to trigger entry to the BOS is 0.25ha. Native vegetation as defined by the BC Act includes all vegetation that is native to NSW, regardless of whether it is native to the subject site's bioregion or has been planted. Clearing includes all removal or destruction of native vegetation including through expected future uses of the development.

Native vegetation in the project area was surveyed during site inspections and found to occur in a small area of roadside derived native grassland in the road reserve to the south of Lot 28 DP 754611, as an area of woodland with some native groundcover in the road reserve to the east of Lot 28 DP 754611 and as isolated paddock trees in the north-eastern quarter of DP

754611.

Following surveys that identified areas of native vegetation the proposal has been redesigned to minimise impacts to native vegetation. Resulting in the following impacts;

- Permanent removal of 1241m^2 of native woodland vegetation

Total impacted native vegetation is 1241m^2 as this is less than the 2500m^2 trigger for this site, the native vegetation clearing trigger is not activated.

2. Biodiversity Values Map (BVM) trigger;

No part of the subject land is mapped on the BVM, the nearest mapped areas occur over 1km to the south and west riparian areas. See Figure 3-1 below BVM mapping in the vicinity of the subject land.

Figure 3-1 BVM Mapping in the vicinity of the project area, subject site indicated in pink and BVM mapping in purple.

3. Significant impact to listed matters trigger;

Where there is potential for BC Act listed matters (species, populations or ecological communities) to be impacted by the proposal a test of significance must be undertaken to determine the significance of any impact.

Where this test determines a significant impact is likely the BAM is triggered.

The potential for protected matters occurring in the study area has been assessed in the threatened matter evaluations table at Appendix 3 and are discussed in Section 4 of this report. This assessment found that no listed matter is at risk of a significant impact and this trigger is not activated.

Application of the BAM

The proposal has been designed and sited to avoid impacts to biodiversity and in doing so avoids triggering entry to the BAM. The proposal is not eligible for entry and assessment under the BOS and a BDAR is not required.

3.2. Vegetation communities and flora species

The study area occurs in an environment that has supported eucalypt dominated woodland and forest for many years prior to European settlement. These ecosystems have been progressively modified over the past 200 years, intersected by road and utility corridors and cleared for urban development and agriculture, typically grazing enterprises in the lower flatter parts of the landscape while hill tops and ridges have typically been cleared for timber and allowed to regenerate. In some parts of the landscape native vegetation communities are relatively intact, particularly on upper slopes and ridges, however they can rarely be considered 'old growth' having suffered disturbance and clearing periodically in the past.

Throughout the assessment area there occurs a range of vegetation communities across a variety of condition states, cleared agricultural lands dominated by exotic pasture occur particularly prominently throughout the district, in many cases with remnants of native woodland however rarely are groundcovers native dominant. On many agricultural properties trees have been retained for stock shelter, planted shelter belts that often include exotic native species often define paddock boundaries. In some cases exotic plantings of crops have been planted including pasture as well as woody species.

The subject land itself is mostly cleared though retains several isolated paddock trees including *Eucalyptus melliodora* (Yellowbox) & *E. blakelii* (Blakely's Redgum) see Figure 3-2, on Lot 28 DP 754611 understory species are almost entirely absent though the exotic *Rosa rubignosa* (Briar rose) occurs. In the road reserve to the south roadside vegetation is mostly exotic however occasional native species including native grasses and forbs occur, exotic shrubs including *Prunus sp*. also occur sparsely, see Figure 3-3.

In the road reserve to the east roadside vegetation includes native woodland, the understory is sparse exotic shrubs including *Lycium ferocissimum* (African boxthorn), the groundcover in some places includes natives however in most cases is dominated by exotic pasture grasses, see figures 3-4 & 3-5, plantings have also occurred that include non indigenous plants.

Figure 3-2 Trees occurring in Lot 28 DP 754611.

Figure 3-3 exotic grassland and prunus occurring in road reserve to south of Lot 28 DP 754611

Figure 3-4; plantings occurring in road reserve to east of Lot 28 DP 754611

Figure 3-5; native woodland occurring in road reserve to east of Lot 28 DP 754611 including small area of native groundcover on eastern side, remainder is exotic.

Areas of native vegetation persisting in the landscape close to and on the subject land are mapped by the NSW State Vegetation Type Map as being of the Plant Community Types listed in Table 3-2 and illustrated in Figure 3-6 SVTM Plant Community Types;

Table 3-2 NSW State Vegetation Type Map PCTs in the vicinity of the project area

No.	PCT Name	Vegetation Form	Vegetation Class
277	Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Grassy Woodlands	Western Slopes Grassy Woodlands
266	White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Grassy Woodlands	Western Slopes Grassy Woodlands
282	Blakely's Red Gum - White Box - Yellow Box - Black Cypress Pine box grass/shrub woodland on clay loam soils on undulating hills of central NSW South Western Slopes Bioregion	Grassy Woodlands	Western Slopes Grassy Woodlands

Figure 3-6; SVTM Plant Community Type mapping in the assessment area, Subject land in pink.

During site inspections it was found that most of these PCTs are present in the landscape, based on prima facie impressions, and reasonably accurately mapped however many of these PCTs are floristically similar and ecotones between each can be broad. Surveys revealed the following;

The SVTM mapping of PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion is consistent with observations on the site, the woodland is composed of a White Box (*Eucalyptus albens*) canopy with a sparse to absent understory and groundcover. Stocking impacts have degraded the understory and groundcover component. It is likely that native understory and groundcover species would recover with species typical of this PCT if stock were removed and the site allowed to regenerate.

This PCT is described as;

> *Tall woodland to about 20 m high dominated by Blakelys Red Gum (Eucalyptus blakelyi) and Yellow Box (Eucalyptus melliodora). Blakelys Red Gum or Yellow Box vfary in their dominance and either can be absent in some places grading into areas with more Apple Box (Eucalyptus bridgesiana), Long-leaved Box (Eucalyptus goniocalyx) and rarely Eucalyptus microcarpa. Shrubs are sparse or absent and may include Acacia dealbata. The ground cover may be dense to sparse depending on rainfall and is dominated by grass species including Poa sieberiana, Bothriochloa macra, Aristida ramosa, Themeda australis, Austrodanthonia spp and Austrostipa spp. Forbs include Vittadinia cuneata, Chrysocephalum apiculatum and Sida corrugata. A very widespread community on fertile deep, loam or clay soils derived from a range of substrates including fine-grained sedimentary and metamorphic rocks but also volcanics and fine-grained granite. Occurs on flats, footslopes and hillslopes mainly in the upper slopes sub-region of the NSW South-western Slopes Bioregion mainly east of Wagga Wagga. Grades into White Box (Eucalyptus albens) grassy woodland (ID266) on hillslopes and into either ID76 (Western Grey Box woodland) or ID276 (Yellow Box woodland) on parna or alluvial flats. Mainly cleared and subjected to nutrification from fertilizers and associated weed invasion.*

This PCT is associated with the Threatened Ecological Communities;

NSW BC Act 2016

- 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 (Boxgum Woodland)

  Listed as Critically Endangered Ecological Community

  Cwlth EPBC Act 1999

- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

  Listed as Critically Endangered

On the subject site, woodland present is consistent with the definition of the BC Act Boxgum Woodland listing, however it does not meet the condition thresholds for the EPBC Act listing.

On the subject land Boxgum Woodland is mostly represented by canopy species only. Generally the understory is absent and groundcovers are exotic pasture grasses and agricultural weeds. See Figures 3-7 to 3-9 below.

Figure 3-7; Low condition PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion, typical of that occurring on Lot 28 DP 754611.

Figure 3-8; Low condition PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland, occurring in the road reserve to the east of Lot 28 DP 754611. Canopy species are present, no understory occurs and the groundcover is exotic pasture grasses.

Figure 3-9; PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland, occurring in the road reserve to the east of Lot 28 DP 754611. Example of the small area where canopy species are present, no understory occurs and the groundcover is native dominant.

No threatened flora were recorded as part of this assessment.

One threatened ecological community was recorded, Boxgum Woodland, this is addressed at Section 4.2 of this BAR.

No Weeds of National Significance listed under the Biosecurity Act 2015 were identified as being a threat on the subject land.

3.3. Fauna and Fauna Habitat

The subject land offers limited habitat components that would support the habitation, foraging and movement of fauna well adapted to modified agricultural environments.

Arboreal habitat is present and occurs across the landscape while in often scattered and disjunct it does support fissures and small hollows suited to small birds, arboreal mammals and tree roosting bats as well as small hollows suited to insects and arboreal mammals.

Foraging habitat present is suited to fauna adapted to woodland ecosystems, particularly those that make use of exotic grassland and seasonally flowering/ fruiting grasses and forbs offer nectar for short periods of the year which are an important part of the diet of many insects and birds.

Insectivorous birds and bats as well as carnivorous fauna are generally also able to forage across this site particularly at warmer times of the year during periods of greater biotic activity.

Continuity across the study area as well as beyond the study area across the landscape is reasonable for mobile fauna, generally there is very little disruption to connecting habitats, impediments include narrow tracks, minor roads, and cleared corridors of agricultural lands.

No surface water assets occur on the subject land however in the landscape watercourses nearby are valuable habitat providing a water source for all fauna and habitat for frogs and other fauna making use of water plants. These wetland areas are a hub of ecological activity and their proximity to the subject land increase its value to fauna.

A range of birds including Australian magpie, and crimson rosellas were observed.

As formal fauna surveys were not undertaken habitats available were considered for their potential to support threatened species.

No threatened fauna species were recorded however habitats present are suited to a range of fauna listed under the BC Act and the EPBC Act, see Appendix 3 for specific discussion of potentially occurring species.

Each proposed dwelling site was considered for threatened fauna habitat and found to not support specific habitat resources or connectivity features important to threatened fauna that are not also widely available throughout the subject land.

3.4. Impacts

The proposal is to subdivide the lands for the purposes of developing the subject land through subdivision of Lot 28 DP 754611 into 26 residential lots each serviced by reticulated power, water and sewerage services, the construction of a short road and cul-de-sac and upgrades to adjoining unsealed roads.

The development makes use of existing cleared areas and avoids and significant impacts to biodiversity resulting in minimal clearing of native vegetation.

Impacts are summarised as;

Construction impacts

- Permanent removal of 1241m^2 of native Boxgum Woodland vegetation.

Temporary impacts

Stockpiling & compound areas to be used during construction will occur within cleared parts of the development area.

Erosion and sediment controls will be employed where required and be low impact, not requiring the removal of mature trees.

Temporary impacts will not add to the total construction impacts.

Operation phase impacts

The operation of the development would result in impacts consistent with the residential land zoning, it is expected that each lot would be further developed through construction and occupation of a residential dwelling and associated land uses including outbuildings and landscaping.

Consideration of combined impacts

The magnitude of impact on biodiversity values of the proposed development are low, no vegetation communities or habitats will be significantly modified or impacted to an extent that they would become limited in the landscape or hinder biological continuity or resilience.

4. Threatened Species, Populations and Ecological Communities

The potential for protected matters to be impacted by the proposed development has been assessed in the threatened matter evaluations table at Appendix 3 of this report.

The findings of this assessment are as follows;

4.1. Threatened species

Appendix 3 addressed several listed species that have been recorded within 10km of the study area or wider areas of the Southern Tablelands and considered to have some potential to occur on the subject land. This preliminary threatened species assessment considered each of these species in the context of habitats present and impacts of the proposal.

Following this assessment, it was considered that no species are likely to make use of the subject land and habitat to be removed.

No Threatened Species listed under the BC Act were considered likely to occur on the site or be impacted by the proposal.

4.1. Endangered Populations

No Endangered Populations listed under the BC Act have been considered likely to be at risk of impact by the proposal.

4.2. Threatened Ecological Communities

Appendix 3 addressed 2 listed communities, following this assessment, it was considered that one community warranted further assessment due to being present on the subject land

A Test of Significance was undertaken in line with the Threatened Species Test of Significance Guidelines, OEH 2018. This test concluded;

A significant impact on;

- *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*

(Boxgum Woodland)

Is found to be **not likely** as a result of the proposal;

- The proposal will not affect the lifecycle of this species such that the local population will be at risk of loss
- The proposal will not remove any potential important habitat for this species
- The proposal will not fragment or isolate potential habitat for this species
- Key threatening processes are minor and not permanent
- The proposal will not impact areas of Outstanding Biodiversity Value
- Indirect impacts are not of a scale that are likely to impact these species or their habitat.

5. Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) specifies that approval is required from the Commonwealth Minister for the Environment for actions that have, will have or are likely to have a significant impact on a matter of "national environmental significance" of the nine matters of national environmental significance, Matters number 4 (Threatened species, ecological communities) and 5 (Migratory species) are relevant to this proposal.

5.1. Threatened Species & Ecological Communities:

Threatened species listed under this act have been considered in the Appendix 3 assessment along with NSW BC Act listed species.

The Commonwealth Environment Department protected matters search tool was used to highlight any maters of national environmental significance that could be of concern. No additional matters were considered likely to be impacted by the proposal.

5.2. Migratory Species:

In addition to threatened species and ecological communities, the EPBC Act allows for the listing of internationally protected migratory species, i.e. species listed under the Japan-Australia Migratory Bird Agreement (JAMBA), the China - Australia Migratory Bird Agreement (CAMBA) and the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).

No protected migratory species were observed on site at the time of this assessment or considered likely to occur on the site or rely on resources provided by its habitat.

6. State Environmental Planning Policy (Biodiversity and Conservation) 2021

The State Environmental Planning Policy (Biodiversity and Conservation) 2021 (BC SEPP) consolidates several repealed SEPPs that help to manage conservation of biodiversity.

6.1. Chapter 4 Koala habitat protection 2021

Chapter 4 Koala habitat protection 2021 applies to the land due to its RU4 Primary Production Small Lots land zoning.

This Chapter 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. As no approved koala plan of management exists for the land, the following clause applies;

> *4.9 Development assessment process—no approved koala plan of management for land*
>
> *(1) This section applies to land to which this Chapter applies if the land—*
>
> *(a) has an area of at least 1 hectare (including adjoining land within the same ownership), and*
>
> *(b) does not have an approved koala plan of management applying to the land.*
>
> *(2) Before a council may grant consent to a development application for consent to carry out development on the land, the council must assess whether the development is likely to have any impact on koalas or koala habitat.*
>
> *(3) If the council is satisfied that the development is likely to have low or no impact on koalas or koala habitat, the council may grant consent to the development application.*
>
> *(4) If the council is satisfied that the development is likely to have a higher level of impact on koalas or koala habitat, the council must, in deciding whether to grant consent to the development application, take into account a koala assessment report for the development.*
>
> *(5) However, despite subsections (3) and (4), the council may grant development consent if the applicant provides to the council—*
>
> *(a) information, prepared by a suitably qualified and experienced person, the council is satisfied demonstrates that the land subject of the development application—*
>
> *(i) does not include any trees belonging to the koala use tree species listed in Schedule 3 for the relevant koala management area, or*
>
> *(ii) is not core koala habitat, or*
>
> *(b) information the council is satisfied demonstrates that the land subject of the development application—*
>
> *(i) does not include any trees with a diameter at breast height over bark of more than 10 centimetres, or*
>
> *(ii) includes only horticultural or agricultural plantations.*

Eucalypt trees occur on the subject land, while that could potentially be used by koalas. It is unlikely however that the trees present on the subject site and nearby are of sufficient abundance and continuity to support a koala population, trees present may be a small part of the home range of a koala population.

Any occurrence of a koala on the subject land would be very rare and likely an individual that has been displaced from suitable habitat that is seeking other habitat.

Records of koalas are recorded in the NSW Wildlife atlas in the past 21 years 60km to the east of the subject land, there are no nearby recent records.

The proposal will remove a small area of potential koala habitat, it is not however likely to support a local population, therefore the subdivision proposed will have *low or no impact on koalas or koala habitat,* and *the council may grant consent to the development application* if it were assessed at the present time.

Over time koala habitat may establish on the subject land, any future development proposal must consider this and reassess the risk of impact to koala habitat.

7. NSW Fisheries Management Act 1994

The FM Act aims to conserve, develop, and share the fishery resources of NSW for the benefit of present and future generations. In particular, the objects of this Act are to:

- Conserve fish stocks and key fish habitats
- Conserve threatened species, populations and ecological communities of fish and marine vegetation
- Promote ecologically sustainable development, including the conservation of biological diversity.

This BAR considers the parts of the FM Act that relate to biodiversity.

The FM Act identifies threatened aquatic species, populations and ecological communities and requires an assessment of significance for potential significant impacts to any of these entities.

No waterways on the subject land are mapped as Key Fish Habitat.

Works will not cause any short or long-term alteration to water levels or flow, obstruction of fish passage or adverse impacts on fish habitat.

No species, populations or communities listed under this act were recorded on site at the time of this assessment or are considered likely to occur on this site. No Tests of Significance have been prepared for species protected by this act in relation to the proposed development.

8. Assessment of the Biodiversity Impact

Considering the information detailed above that has been summarised from information collected during field and desktop investigations and assessments of significance for threatened species and communities the following final assessments are made.

8.1. Direct Impacts

The proposal will result in the following direct impacts on biodiversity;

- Permanent removal of 1241m^2 of native Boxgum Woodland vegetation including;

Measures have been prescribed to offset the impact of this impact as detailed in Section 9 Impact Mitigation Measures.

Impacts will include the removal of mature hollow bearing trees.

8.2. Indirect Impacts

Construction and operation impacts are confined to the subject land in close proximity to the proposed dwelling sites, it is very unlikely biodiversity will be indirectly impact by the development.

There is potential however for the works to spread weed material across the project area or to other sites, impact mitigation measures at Section 9 of this report mitigate this risk.

8.3. Potential Impacts on Flora

Vegetation impacts described above will not significantly impact any threatened flora or threatened ecological communities. Future land uses will be consistent with current land uses of the area and the zoning.

The proposal will not involve the removal of any unique flora or high condition native vegetation communities.

8.4. Potential Impacts on Fauna and Habitat

Works will require the removal of several hollow bearing trees, while these are likely to be used by a variety of common fauna, the impact is not likely to be significant. The habitat impacted is of lessor value that similar habitats nearby where edge effects and traffic impacts are not reducing the value of arboreal habitat.

No other areas important habitat components for fauna will be impacted – in the context of the habitats present across the subject land. Habitat resources impacted are all common and widespread on the subject land and throughout the landscape. Impacts will not fragment habitat to any extent than is currently the case and will not impede the movement of fauna.

9. Impact Mitigation Measures

The following impact mitigation measures are recommended for adoption to reduce the likelihood of any negative impacts on flora and fauna associated with this proposal both in the short and long term.

Table 9-1 Impact mitigation measures

Impact	Mitigation measure	Techniques	timing	Responsibility
Net loss of biodiversity	Planting of Boxgum Woodland	A vegetation management plan must be prepared by a suitably qualified and experienced person to manage the clearing and grubbing of native vegetation for the works and to protect vegetation that is not to be impacted and to offset vegetation loss. This plan is to be implemented and meet the following criteria; • The plan will be prepared with consideration of the final construction plans for the works • The plan will detail the rehabilitation of 1800m^2 of Boxgum woodland in the adjoining road reserves using local provenance species including a range of canopy and groundcover species and including weed management • Strategies to ensure successful establishment of	Pre-construction & construction phase	Constriction contractor & developer

Impact	Mitigation measure	Techniques	timing	Responsibility
		Boxgum Woodland for 10 years beyond approval of development • Pre-clearing surveys will be undertaken to ensure sedentary fauna (such as nesting fauna) are not present during clearing, hollow bearing trees will be identified prior to clearing and will be removed under the supervision of an ecologist • Results of preclearing surveys, removal of habitat and any other relevant matters will be documented in a post clearing report that may recommend ameliorative or offsetting measures.		
Impacts to retained vegetation	Marking of clearing limits	Clearing limits are to be established and demarcated onsite using a distinct physical barrier prior to the commencement of clearing works. This will be designated as a 'no go' area for plant, equipment, vehicles and stockpiling. Where an erosion and sediment control plan requires operation in this	Pre-construction & construction phase	Constriction contractor & developer

Impact	Mitigation measure	Techniques	timing	Responsibility
		area for effective erosion and sediment control this will be permitted		
Promotion of invasive exotic species	Weed management plan	A weed management plan is to be prepared and implemented	Construction phase & post construction	Constriction contractor & developer
	Prevent importation of weed material	All plant and equipment to be used in the construction of the proposal will be cleaned and weed free prior to entry to the site	Construction phase	Constriction contractor & developer
	Promote locally native vegetation and prohibit invasive exotic vegetation	In order to minimise indirect impacts of future land uses, future development on resulting lots are to adopt a landscape plan that incorporates locally native vegetation and prohibits invasive exotic vegetation (environmental or agricultural weeds)	Future Development Application	Future landowners
Indirect impacts on receiving waters	Implement ESCP	An Erosion and Sediment Control Plan (ESCP) for the construction of the development is to be prepared and implemented in accordance with "*The Blue Book*" (Landcom, 2004) and issuance of any subsequent construction certificate for the works is to consider the	Pre-construction, construction & post construction	Constriction contractor & developer

Impact	Mitigation measure	Techniques	timing	Responsibility
		adequacy of this ESCP		

10. Conclusion

This report has assessed the flora and fauna associated with the subject land and the extent and nature of impacts on biodiversity of the proposed works to develop a 26 lot rural subdivision.

The proposed development has been designed and sited so as to avoid and minimise impacts to biodiversity values. Residual impacts have been considered through this assessment which has found impacts on biodiversity to be low and manageable in the context of the landscape.

A Test of Significance was undertaken for the following matters in accordance with the NSW DPIE Threatened Species Test of Significance Guidelines;

- *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*

This test concluded the proposal was not likely to result in a significant impact to any of these listed matters.

It is essential that this report's impact mitigation measures be implemented in order to manage potential weed issues on the site and to achieve no net loss of biodiversity.

The proposal is not likely to have a significant impact on listed threatened species, populations or ecological communities.

There are no other biodiversity issues associated with this proposal the net impact of this proposal on flora and fauna and biodiversity generally will be negligible.

11. References

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Appendix 1 – Concept Plan & Site Photographs

EDGE BATTER FULL ROAD CONSTRUCTION

EDGE BATTER NO K&G LHS, BATTER 2:1

SCHEDULE of CURVED BOUNDARIES

No	Bearing	Chord	Arc	Radius
1	76°30'20"	11.26	11.48	17
2	76°28'10"	9.92	10.11	15
3	116°27'20"	11.97	12.23	17
4	155°53'50"	10.965	11.165	17
5	200°32'00"	14.82	15.335	16.995
6	241°50'10"	9.055	9.165	17
7	303°34'10"	5.64	5.675	15
8	285°50'10"	16.26	16.955	17
9	284°15'50"	4.42	4.435	15

TREE TO BE REMOVED SHOWN RED

6 stump7 2 gum12

TREE TO BE RETAINED SHOWN GREEN

6 stump7 2 gum12

TREE TO BE RETAINED NO KERB AND GUTTER EAST & SOUTH SIDE PETTICOAT LANE

6 stump7 2 gum12

EDGE BATTER FULL ROAD CONSTRUCTION

EDGE BATTER NO K&G LHS, BATTER 2:1

ISSUE	AMENDMENT	DATE
.	.	.
.	.	.
C	Preliminary Engineering	11/09/2024
B	Revised layout	17/07/2024
A	Concept Design	02/07/2024

I HEREBY CERTIFY THAT ENGINEERING WORKS SHOWN ON THIS PLAN ARE WORK-AS-EXECUTED AND HAVE BEEN CONSTRUCTED GENERALLY IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE DIRECTOR. IN ACCORDANCE WITH THE GENERAL REQUIREMENTS

DATE: 11th Sep, 2024 | CHECKED: JRM | DRAWN: WJC | APPROVED: | DESIGNED: WJC | SCALE: 1:250 | SHEET: A1

North

SRD LAND CONSULTING
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SHEET SUBJECT: TREE REMOVAL

PROJECT: PROPOSED 25 LOT RESIDENTIAL SUBDIVISION
86 BACK CREEK ROAD DP 754611

CLIENT: GUS BARAKAT | ISSUE: C | PROJECT NO.: 40250 | SHEET NO.: 20 of 20 | SHEET: A1

Photo 1; Facing Southeast, across subject land.

Photo 2; Facing north across subject Land.

Photo 2; Back Creek Rd adjoining subject Land.

Appendix 2 – Flora Recorded

Family	Species	Common Name	Exotic	BC Status	EPBC Status
Anthericaceae	*Tricoryne elatior*	Yellow Autumn-lily			
Apiaceae	*Hydrocotyle laxiflora*	Stinking Pennywort			
Asphodelaceae	*Bulbine bulbosa*	Bulbine Lily			
Asphodelaceae	*Dianella longifolia*	Blueberry Lily			
Asteraceae	*Cirsium vulgare*	Spear Thistle	*		
Asteraceae	*Conyza bonariensis*	Flaxleaf Fleabane	*		
Asteraceae	*Gazania sp.*	Gazania	*		
Asteraceae	*Hypochaeris radicata*	Catsear	*		
Asteraceae	*Xanthium spinosum*	Bathurst Burr	*		
Boraginaceae	*Echium plantagineum*	Patterson's Curse	*		
Campanulaceae	*Wahlenbergia communis*	Tufted Bluebell			
Caryophyllaceae	*Petrorhagia nanteuilii*	Proliferous Pink	*		
Fabaceae (Faboideae)	*Glycine tabacina*	Variable Glycine			
Fabaceae (Faboideae)	*Medicago polymorpha*	Burr Medic	*		
Fabaceae (Faboideae)	*Trifolium spp.*	Clover	*		
Fabaceae (Faboideae)	*Trifolium subterraneum*	Subterranean Clover	*		
Fabaceae (Faboideae)	*Vicia spp.*	Vetch	*		
Geraniaceae	*Geranium solanderi*	Native Geranium			
Goodeniaceae	*Goodenia hederacea*	Ivy Goodenia			
Lamiaceae	*Marrubium vulgare*	White Horehound	*		
Lamiaceae	*Salvia verbenaca*	Vervain	*		
Lomandraceae	*Lomandra filiformis*	Wattle Matt-rush			
Lomandraceae	*Lomandra multiflora subsp. multiflora*	Many-flowered Mat-rush			
Myrtaceae	*Eucalyptus blakelyi*	Blakely's Red Gum			
Myrtaceae	*Eucalyptus melliodora*	Yellow Box			
Oxalidaceae	*Oxalis corniculata*	Creeping Oxalis	*		
Plantaginaceae	*Plantago lanceolata*	Plantago	*		
Poaceae	*Aira spp.*		*		
Poaceae	*Austrostipa scabra subsp. falcata*	Rough Speargrass			
Poaceae	*Avena fatua*	Wild Oats	*		
Poaceae	*Briza maxima*	Quaking Grass	*		

Family	Species	Common Name	Exotic	BC Status	EPBC Status
Poaceae	*Bromus catharticus*	Praire Grass	*		
Poaceae	*Bromus hordeaceus*	Soft Brome	*		
Poaceae	*Cynodon dactylon*	Common Couch			
Poaceae	*Dactylis glomerata*	Cocksfoot	*		
Poaceae	*Ehrharta spp.*	Veldtgrass	*		
Poaceae	*Eleusine tristachya*	Goose Grass	*		
Poaceae	*Holcus lanatus*	Yorkshire Fog	*		
Poaceae	*Hordeum leporinum*	Barley Grass	*		
Poaceae	*Lolium perenne*	Perennial Ryegrass	*		
Poaceae	*Microlaena stipoides*	Weeping Grass			
Poaceae	*Phalaris aquatica*	Phalaris	*		
Poaceae	*Rytidosperma spp.*				
Poaceae	*Triticum spp.*		*		
Polygonaceae	*Rumex brownii*	Swamp Dock			
Primulaceae	*Lysimachia arvensis*	Scarlet Pimpernel	*		
Rosaceae	*Acaena spp.*	Sheep's Burr			
Rosaceae	*Prunus spp.*		*		
Rosaceae	*Rosa rubiginosa*	Sweet Briar	*		
Rosaceae	*Sanguisorba minor*	Salad Burnet	*		
Solanaceae	*Lycium ferocissimum*	African Boxthorn	*		
Verbenaceae	*Verbena officinalis*	Common Verbena	*		
Zygophyllaceae	*Tribulus terrestris*	Cat-head	*		

Appendix 3 – Threatened Matter Evaluations Table

Threatened Species Evaluations

The following table present the evaluations for threatened species, endangered ecological communities and endangered populations found either

1. Within a 10km buffer of the study site in the Atlas of NSW Wildlife (Bionet).
2. Identified as potentially occurring in the area by the Commonwealth EPBC Protected Matters Search Tool.
3. Considered to have potential to occur in the landscape given habitats available

The assessment of potential for impact to the species or ecological community is based on the nature of the proposal, it's direct and indirect impacts and the ecology of the species. Where a potential impact to a threatened species, ecological community or endangered populations has been identified a *Test of Significance* for determining whether proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats has been undertaken in line with Section 7.3 of the *Biodiversity Conservation Act 2016*.

Abbreviations

Matter status under each act, *NSW Biodiversity Conservation Act 2016* (BC Act) or the *Commonwealth Environment Protection & Biodiversity Conservation Act 1999* (EPBC Act) (depending on the table column the abbreviation is placed in) are abbreviated as follows;

- E: listed as endangered
- V: listed as vulnerable
- CE: listed as Critically Endangered
- EEC: listed as an Endangered Ecological Community
- CEEC: listed as a Critically Endangered Ecological Community
- M: Migratory Species under the EPBC Act.

References

Department of the Environment. Species Profile and Threats Database, Department of the Environment, Canberra. [Online]. Available from: http://www.environment.gov.au/sprat.

Office of Environment and Heritage. Threatened Species Profile Search. [Online]. Available from: http://www.environment.nsw.gov.au/threatenedspeciesapp/.

Department of Primary Industries. Listed threatened species, populations and ecological communities. [Online]. Available from: http://www.dpi.nsw.gov.au/fishing/species-protection/conservation.

Family	Name	Common Name	BC Status	EPBC Status	Habitat present?	Likelihood of impact?
Accipitridae	*Hieraaetus morphnoides*	Little Eagle	V	-	absent	Unlikely, no important habitat components impacted
Anatidae	*Oxyura australis*	Blue-billed Duck	V	-	absent	Unlikely, no important habitat components present
Artamidae	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V	-	absent	Unlikely, no important habitat components impacted
Cacatuidae	*Callocephalon fimbriatum*	Gang-gang Cockatoo	V	E	Present	Unlikely, no important habitat components unavailable locally impacted
Climacteridae	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)	V	V	Present	Unlikely, no important habitat components unavailable locally impacted
Estrildidae	*Stagonopleura guttata*	Diamond Firetail	V	V	Present	Unlikely, no important habitat components unavailable locally impacted
Meliphagidae	*Anthochaera phrygia*	Regent Honeyeater	E	CE	Present	Unlikely, no important habitat components unavailable locally impacted

Family	Name	Common Name	BC Status	EPBC Status	Habitat present?	Likelihood of impact?
Neosittidae	*Daphoenositta chrysoptera*	Varied Sittella	V	-	Present	Unlikely, no important habitat components present
Petroicidae	*Petroica phoenicea*	Flame Robin	V	-	Present	Unlikely, no important habitat components unavailable locally impacted
Pomatostomidae	*Pomatostomus temporalis temporalis*	Grey-crowned Babbler (eastern subspecies)	V	-	Present	Unlikely, no important habitat components impacted
Psittacidae	*Glossopsitta pusilla*	Little Lorikeet	V	-	Present	Unlikely, no important habitat components impacted
Psittacidae	*Lathamus discolor*	Swift Parrot	E	CE	Present and known to occur in landscape	Unlikely, while this species may occasionally occur on the site important habitat components unavailable locally impacted
Psittacidae	*Polytelis swainsonii*	Superb Parrot	V	V	Present and known to occur in landscape	Unlikely, while this species may occasionally occur on the site important habitat components unavailable locally impacted

Family	Name	Common Name	BC Status	EPBC Status	Habitat present?	Likelihood of impact?
Dasyuridae	*Dasyurus maculatus*	Spotted-tailed Quoll	V	E	Present however a very small part of a potential home range	Unlikely, no important habitat components present
Petauridae	*Petaurus norfolcensis*	Squirrel Glider	V	-	Present	Has been recorded nearby. Unlikely, while this species may occasionally occur on the site important habitat components unavailable locally impacted
Phascolarctidae	*Phascolarctos cinereus*	Koala	E	E	Present	Unlikely, no important habitat components impacted
Pteropodidae	*Pteropus poliocephalus*	Grey-headed Flying-fox	V	V	Present	Has been recorded nearby. Unlikely, while this species may occasionally occur on the site important habitat components unavailable locally impacted
Fabaceae (Faboideae)	*Cullen parvum*	Small Scurf-pea	E	-	Present	Unlikely. Not recorded during surveys, not likely to occur in the

Family	Name	Common Name	BC Status	EPBC Status	Habitat present?	Likelihood of impact?
						highly modified environment.
Community	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	Boxgum Woodland	CEEC	CEEC	Present	Potential for impact, See Test of Significance

Appendix 4 – Threatened Species Tests of Significance

Threatened Species Test of Significance

Tests of significance are prepared in accordance with the NSW DPIE Threatened Species Test of Significance Guidelines (OEH 2018) in the context of the proposed development and expected future uses as outlined in the Biodiversity Assessment Report, specifically;

Three Lot rural subdivision of Lot Lot 28 DP 754611. Direct impacts to biodiversity are summarised as;

- Permanent removal of 1241m^2 of native Boxgum Woodland vegetation

Conditions provided at Section 9 of the Biodiversity Assessment must be implemented.

Assessment of Significance for the threatened Communities;

- *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* (Boxgum Woodland)

Listed as;

- BC Act Critically Endangered
- EPBC Act Not listed (in present condition state)

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

Not Applicable, entity is not a species

In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

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

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

The extent of Boxgum Woodland will be reduced by 1241m^2, this area of Boxgum Woodland occurs on the margin of a larger area of the community in an area impacted by agricultural uses and urban development. Its loss would not degrade the larger wider area of Boxgum Woodland or its local occurrence.

In relation to the habitat of a threatened species or ecological community:

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

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

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

The proposal will modify through permanent removal 1241m^2 of Boxgum Woodland, and 2.5ha of potential habitat for this community. This area is improved pasture and is highly modified with exotic pasture grasses, weeds and nutrification impacts. It is highly unlikely that under present management this impacted area would be recolonised by Boxgum Woodland.

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

There are no areas of declared areas of outstanding biodiversity value in proximity of the project area, due to this separation there is no chance that the activity will either directly or indirectly impact an Area of Outstanding Biodiversity Value.

Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

The action includes the following key threatening processes;

- Clearing native vegetation

Works will Permanent removal of 1241m^2 of native Boxgum Woodland vegetation.

Conclusions

Following the above assessment, a significant impact on;

- *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*

Is found to be **not likely** as a result of the proposal;

- The proposal will not affect the lifecycle of this species such that the local population will be at risk of loss
- The proposal will not remove any potential important habitat for this species
- The proposal will not fragment or isolate potential habitat for this species
- Key threatening processes are minor and not permanent
- The proposal will not impact areas of Outstanding Biodiversity Value
- Indirect impacts are not of a scale that are likely to impact these species or their habitat.