Hamilton Environmental Services
ABN: 89 108 410 911

TEST OF SIGNIFICANCE – 32 BURMA ROAD, TOCUMWAL

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Submitted to:

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Version 4, 6th October 2024

Cover Photo: Looking west across the property.

TABLE OF CONTENTS

1. INTRODUCTION

In June 2022, Hamilton Environmental Services (HES) was engaged to undertake a Biodiversity Assessment and complete a Test of Significance under Part 7 Division 1 Section 7.3 of the *Biodiversity Conservation Act 2016* for the landholder of 32 Burma Road, Tocumwal, Lot 32 DP778129.

The original landholder – Urban Land Developments - was seeking to undertake a 261 lot subdivision on the property.

Field assessment of the site was conducted on the 2nd August 2022, 16th September 2022 and the 17th August 2023 by Dr. Steve Hamilton.

The Version 2 report provided details associated with the native vegetation loss associated with the subdivision layout itself. The Version 3 report provided the detail on the losses of native vegetation associated with both the subdivision layout and with the proposed stormwater management works required for the development.

This Version 4 report responds to a request from Beveridge Williams to provide an updated report for a new landholder that is now seeking to develop a residential village (known as a Manufacturer's Home Estate in NSW) containing approximately 315 units and 28 conventional residential lots around the periphery of the site; however, despite the change in the form of the layout, there will be no change in the extent of development across the site, and proposed existing reserves, lot extent and access road alignments do not change (Nick Jay pers. comm. 2024).

On this basis, a further field assessment was not required.

This report provides the detail on the losses of native vegetation associated with both the revised layout and with the proposed stormwater management works for the development.

2. BACKGROUND

2.1 Consultant Background

Steve Hamilton (Dr.)

AssocDipAppBiol, BAppSc(AppBiol), MAppSc (RMIT), PhD (University of Melbourne), BAM accredited Assessor (DPIE/DPE/DCCEEW NSW), Vegetation Quality Assessment Certified (DSE/DEPI/DELWP/DEECA Victoria),Bush Broker Site Assessor (DELWP/DEECA Victoria), Certificate IV in Training and Assessment.

Steve is an ecologist specialising in flora and fauna inventory, auditing, monitoring and surveying, as well as soil typing, analysis and mapping. He has 12 years consulting experience, associated with a range of ecological evaluations and monitoring processes across all of Victoria, and southern and western New South Wales, which includes assessing and mapping vegetation condition, vegetation type, targeted threatened species surveys, habitat quality assessment (in Victoria, Habitat Hectares assessment and 'Net Loss' evaluations), across the range of terrestrial, riparian and wetland ecosystems.

He has vast experience in the assessment of native vegetation and species, and habitat loss assessment, for irrigation, residential, infrastructure and mining (including sand, rock and ore extraction) developments, and the successful negotiation of the appropriate legislative, regulatory and statutory frameworks across the three levels of Government to provide suitable outcomes for clients across both States to allow developments to proceed. In Victoria, this involves the production of Net Loss Reports, Vegetation Offset Management Plans and Work Plans, and in NSW, reporting

for potential native vegetation/habitat losses, Tests of Significance and BAM assessments, threatened species threats in Development Applications (DAs), and in more detailed situations where Director General Requirements (or Secretary's Environmental Assessment Requirements; SEARs) are specified, Environmental Impact Statements (EISs) or Reviews of Environmental Factors (REFs).

Beyond statutory requirements and reporting, Steve is often called upon to provide technical reporting into particular issues, such as research/survey investigations into vegetation-soil-fauna management issues in natural areas or for development proposals, such as weed management surveys and strategies, kangaroo survey and management, potential mining pollution impacts, sustainability of timber resources, soil mapping and land capability assessment, ecosystem restoration, or revegetation design.

Prior to consulting, Steve spent 20 years as a senior teaching/research academic, and has more than 30 peer-reviewed papers and many technical reports, most focussing on the impacts of disturbance on the ecology and floristics of woodlands and grasslands.

2.2 Location and Description

The property is 1.74 km east of the centre of the township of Tocumwal (Fig. 2-1).

Lot 32 DP778129 is a broadly rectangular shaped area of 21.19 ha, and has maximum dimensions of 636 m north-south, and 420 m east-west; most of the eastern boundary is Burma Road frontage, the northern boundary is Hutsons Road frontage, the southern boundary is the Tocumwal Golf Club, with the western boundary is a residential subdivision (Fig. 2-2).

Figure 2-1 Aerial image of the general location of the assessed property, outlined in red (Image from ESRI Australia 2023).

Figure 2-2 **Aerial image of the 32 Burma Road, Tocumwal property, showing the proposed development layout and the two defined native vegetation patches (Image from ESRI Australia 2024).**

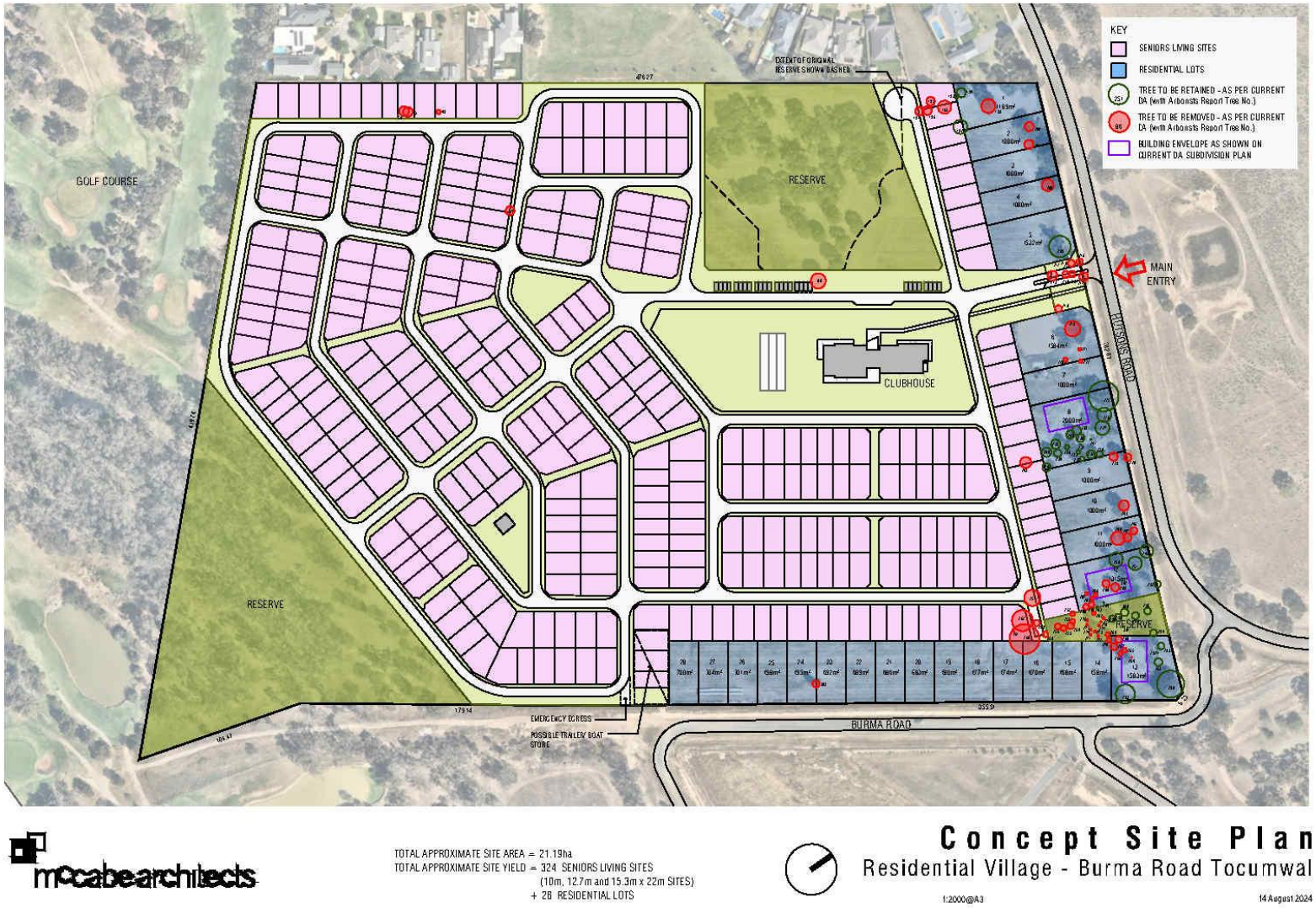

Figure 2-3 Concept Site Plan, 32 Burma Road, Tocumwal (McCabe Architects, dated 14/8/24).

Figure 2-4 **Proposed location and extent of the wetland and sedimentation basin proposed for Option 1 of the stormwater management structures for the proposed residential development (Afflux Consulting 2023).**

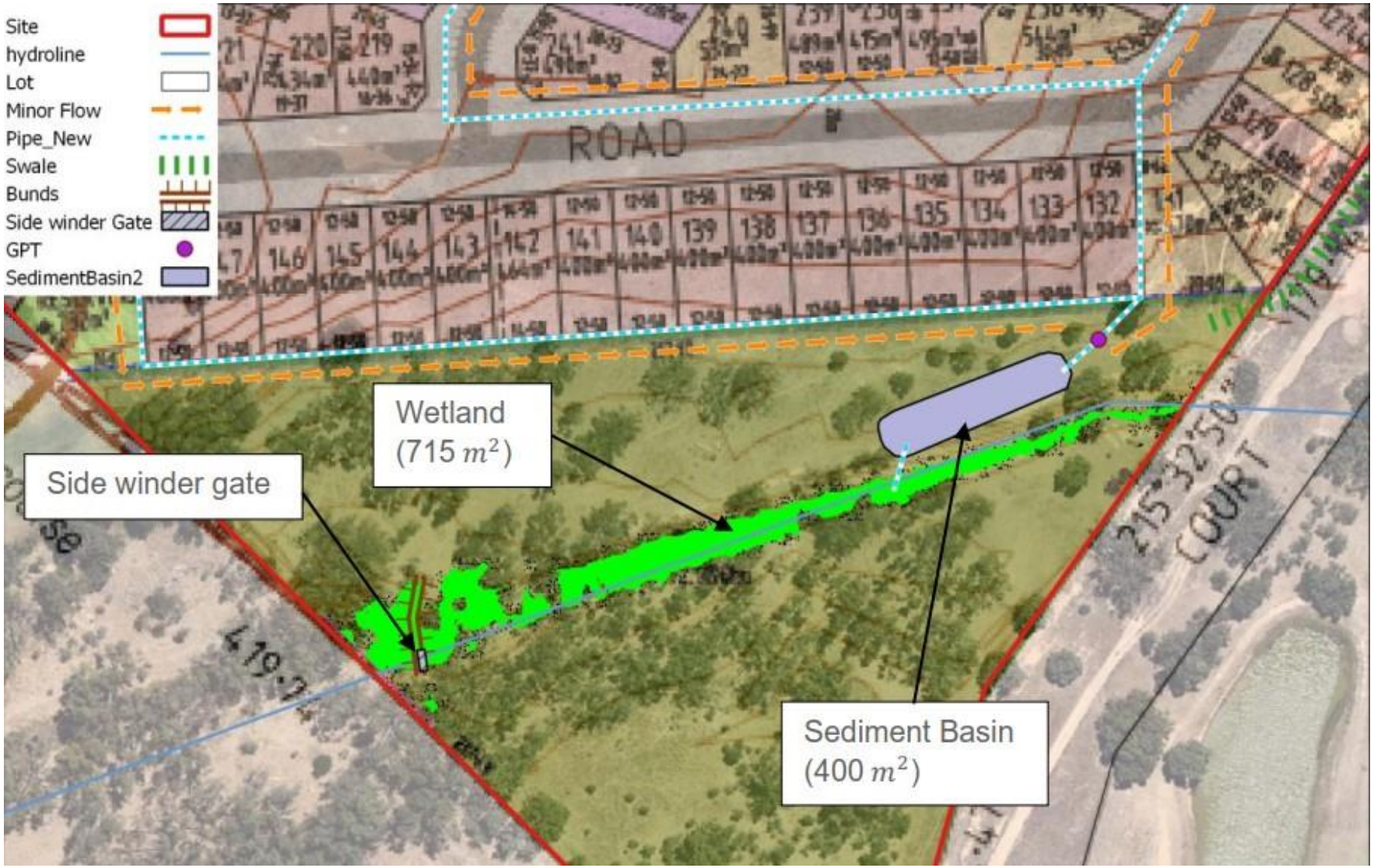

Figure 2-5 **Proposed location and extent of the wetland and sedimentation basin proposed for Option 2 of the stormwater management structures for the proposed residential development (Afflux Consulting 2023).**

The property is fenced as one large paddock, and has been largely cleared of indigenous woody vegetation; however, there are substantial patches of remnant vegetation - remnant indigenous trees and ground layer vegetation - in the north-western corner of the property, and in the south-eastern corner of the property. The patch in the south-eastern corner is dominated by River Red Gum (*Eucalyptus camaldulensis*), while the patch in the north-western corner is dominated by Grey Box (*E. microcarpa*). There are also scattered individuals and small patches of Grey Box trees along the northern boundary and in the north-eastern corner of the property.

There are no sheds or dwelling on the property; however, there are two stock dams along the northern boundary of the property. Clearly because of the presence of these dams, the paddock has utilised as a grazing paddock; however, the cleared sections of the paddock had been sown to a cereal crop at the time of assessment.

The cleared and cropped areas of the property were essentially bare earth at the time of assessment – with little vegetation - while the two larger treed patches maintain a ground layer that maintains an indigenous ground layer species, with an abundant layer of a range of opportunistic introduced annual and perennial species.

The road reserves of both Hutsons and Burma Roads are predominantly cleared and retain no indigenous ground layer species in the vicinity of where the two access roads are proposed (one to Hutsons Road and one to Burma Road; see Figures 2-2 and 2-3), and predominantly cleared and are dominated by the same opportunistic introduced annual and perennial species that are found within the two tree patches across the property.

The southern Hutsons Road reserve maintains a compacted sand pedestrian path along the length of Hutsons Road that is adjacent to the proposed development.

As indicated previously, the landholder is seeking to undertake a 261 lot subdivision on the property; the Plan of Subdivision is shown in Fig. 2-3.

Proposed Lots 1 to 4, and Lots 30 to 35, will be required to have constructed separate road access across the southern Hutsons Road reserve to provide access to Hutsons Road; the likely alignments of these individual lot access tracks is not known, but likely alignments have been adopted to allow for any commensurate native vegetation loss.

The rationale and two options for the proposed stormwater management associated with the development have been summarised in Afflux Consulting (2023): Option 1 proposes a sedimentation basin of 600 m^2 and a constructed wetland of 1,100 m^2 separated from the natural drainage line to the immediate south in the south-eastern corner woodland patch, and Option 2 proposes a sedimentation basin of 400 m^2 separated from the natural drainage line to the immediate south and an embankment with side winder gate for flow control that will elevate the water stored within the existing wetland along the drainage line to an area of 715 m^2 at maximum retention.

Both Options result in the loss of small areas of native vegetation.

The layout for Options 1 and 2 can be seen in Figures 2-4 and 2-5.

3. METHODOLOGY

3.1 Desktop Review

The following desktop information was gathered prior to field assessment:

- Aerial imagery and base map from Land and Property Information New South Wales;
- Determination of a general species list for the area (Department of Planning and Environment [DPE] 2023a);

- Matters of National Significance reporting for the 10 km radius around the property (Department of Climate Change, Energy, the Environment and Water [DCCEEW] 2023);
- Flora, fauna and threatened species lists, sighting records and information for the district was obtained from *BioNet – Website of the Atlas of NSW Wildlife* (DPE 2023b).

3.2 General Site Assessment

On the 2nd August 2022, Dr. Steve Hamilton (BAAS 18106) visited the property and the adjacent area to undertake the assessment. On this day, air temperatures were between 6 to 11°C, the sky was clear, there was no rain, and there was no wind (Bureau of Meteorology 2023). The entire site was traversed by foot, and continuous active searching was conducted over a total period of 2 hours.

There was a further visit to the site on the 16th September 2022 over a total period of 1.5 hours to mark remnant trees with flagging tape that were permitted clearing without a permit according to Clause 6(2) of the *Berrigan Development Control Plan 2014* – those being trees that are "….five metres or more in height; or trunk diameter of 20cm or more one metre above the ground" of particular species according to Clause 6(3) including Weeping Myall, Grey Box or River Gum. On this day, air temperatures were between 12 to 15°C, the sky was clear, there was no rain, and there was a light wind (Bureau of Meteorology 2023).

There was a further visit to the site on the 17th August 2023 over a total period of 1.5 hours, accompanied by Ross Closter (Urban Land Development) and Chris Beardshaw (Afflux Consulting) to assess the areas proposed for structures associated with stormwater management for the residential development in the south-eastern corner woodland patch. On this day, air temperatures were between 10 to 12°C, the sky was clear, there was no rain, and there was no wind (Bureau of Meteorology 2023).

In a general sense, the following assessments were undertaken across the assessed area:

- Vascular plant species were identified and noted according to zone, with an overall cover/abundance value recorded for each species in each zone completed post-field assessment (see Table 3-1);
- The species, location, diameter, health and basic hollow characteristics of all pertinent tree individuals was recorded. Only the trees close to the proposed development near or within the southern patch were assessed;
- Opportunistic recording of any fauna;
- Digital images across the site taken.

Three hundred and thirteen (313) images were taken across the area during the assessment to facilitate identification and to provide context to the description.

Table 3-1 Modified Braun-Blanquet scale applied to assessment to each vascular plant species identified.

Visual assessment of cover/abundance	
Symbol	*Description*
+	rare, cover < 5%
1	Uncommon, cover < 5 %
2	Very common, cover < 5 % or cover 5-25 % with any number of individuals
3	Cover 25-50 % with any number of individuals
4	Cover 50-75 % with any number of individuals
5	Cover 75-100 % with any number of individuals

3.3 Taxonomy

3.3.1 Flora

Vascular plants that could not be identified in the field, specimens and images were collected for identification using the *Flora of New South Wales* (Harden 1990, 1991, 1992, 1993), and *PlantNet Flora On-line* (Royal Botanic Gardens Sydney 2023).

3.3.2 Fauna

Any fauna observed were recorded, with the nomenclature based variously on the compilations of Hero *et al.* (1991), Menkhorst (1995), Cogger (1996) and Simpson and Day (1998), utilising Triggs (1996) for identification using indirect methods, such as the presence of scats or tracks.

4. EXISTING ENVIRONMENT

4.1 Vegetation

The inventory of species noted across the property is recorded in Appendix A.

A total of 39 vascular plant species were recorded across the assessed site; 14 of these species were introduced, and 25 indigenous (Appendix A; Table 4-1).

Table 4-1 The number of indigenous and introduced species across the designated zones of the property.

Patch	Introduced species	Indigenous species	Total species
Patch South general	7	16	23
Patch North	5	10	15
Sedimentation Basin patch	6	7	13
Drainage line	5	9	14
Total	**14**	**25**	**39**

There were no rare or threatened species observed (after DPE 2023a).

As indicated, the property is fenced as one large paddock, and has been largely cleared of indigenous woody vegetation; however, there are substantial patches of remnant vegetation - remnant indigenous trees and ground layer vegetation - in the north-western corner of the property, and in the south-eastern corner of the property. The patch in the south-eastern corner is dominated by River Red Gum, while the patch in the north-western corner is dominated by Grey Box. There are also scattered individuals and small patches of Grey Box trees along the northern boundary and in the north-eastern corner of the property.

Both patches will be avoided by the proposed development and will become established reserves; however, a considerable number of Grey Box individuals in small patches and as scattered individuals along or near the northern boundary of the property will be removed with the proposed development.

There are no sheds or dwelling on the property; however, there are two stock dams along the northern boundary of the property. Clearly because of the presence of these dams, the paddock has utilised as a grazing paddock; however, the cleared sections of the paddock had been sown to a cereal crop at the time of assessment.

The cleared and cropped areas of the property were essentially bare earth at the time of assessment – with little vegetation.

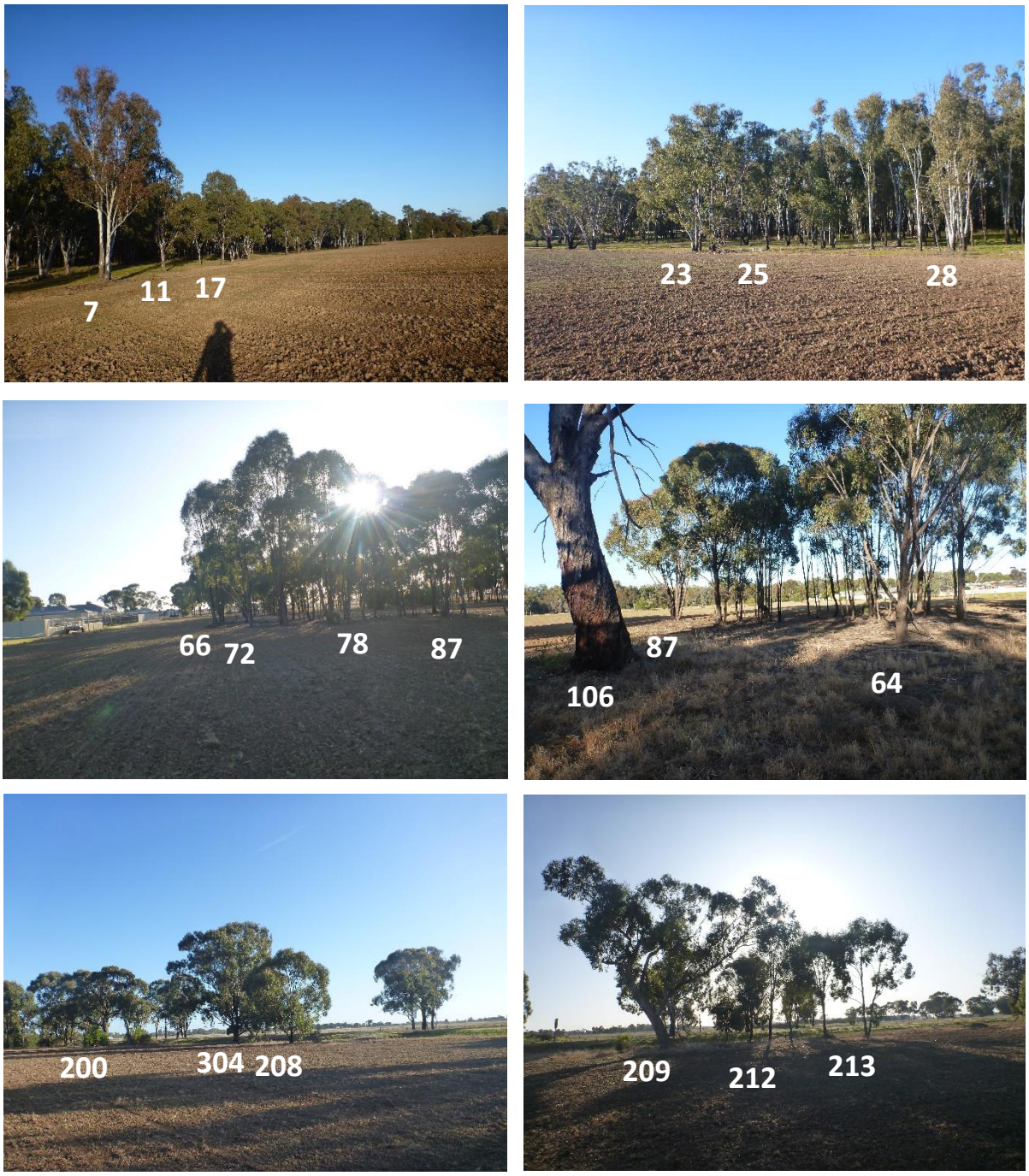

Plate 4-1 **Views across the property: the southern reserve (patch) from near Burma Road (top left), the south reserve (patch) from near its north-western corner (top right), looking north-east along the western edge of the northern reserve (middle left), looking south within the northern reserve (middle right), the north-western corner of the property (bottom left), and a patch along the northern property boundary (bottom right). Pertinent trees are numbered in white. Images taken by author 2/8/22.**

The two larger treed patches maintain a ground layer that maintains indigenous ground layer species, with an abundant layer of a range of opportunistic introduced annual and perennial species.

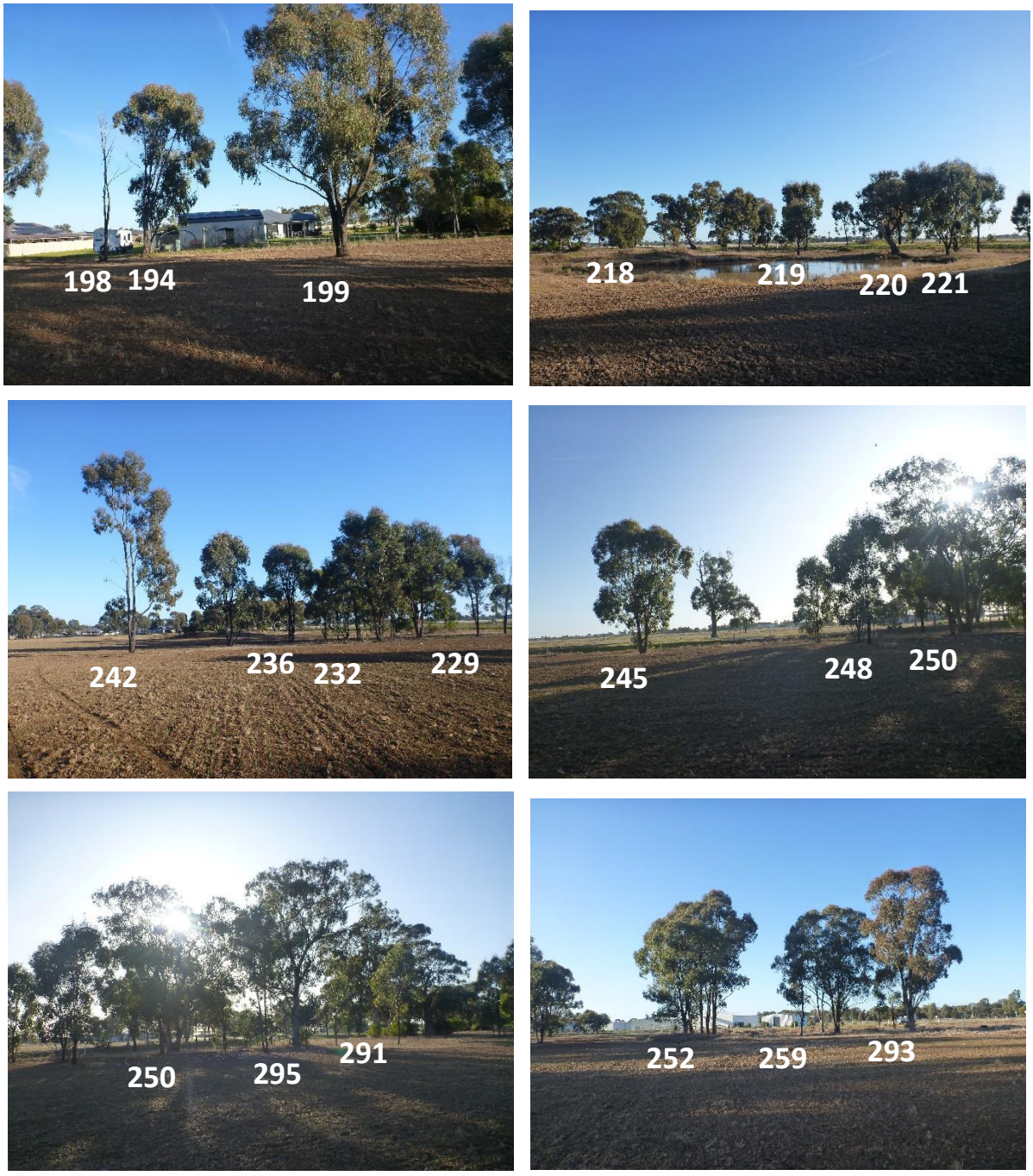

Plate 4-2 **Views across the property: near the north-western corner (top left), the existing stock dam on the northern boundary (top right), a tree patch along the northern boundary (middle left), the scattered trees and small patches in the north-eastern corner (middle right), the scattered trees and small patches in the north-eastern corner (bottom left), and the scattered trees and small patches in the north-eastern corner (bottom right). Pertinent trees are numbered in white. Images taken by author 2/8/22.**

The northern patch of 0.684 ha is dominated by a mixed-age Grey Box canopy – including large areas of patches of recent recruits – that is dominated by bare earth/non-vascular cover and leaf litter (60 % cover), with an abundant indigenous ground layer composed of species such as Rough Spear-grass, Common Windmill Grass, Climbing Saltbush, Ruby Saltbush, Curly Windmill Grass, Water Couch, Black Rolypoly, Brown-backed Wallaby-grass and Woolly New Holland Daisy (30 % projective foliage cover), with annual and perennial introduced species present, such as the woody weed African Boxthorn

underneath the tree canopies, and herbaceous species such as Great Brome, Wimmera Ryegrass, Horehound and Winter-grass (10 % projective foliage cover; Appendix A).

The road reserves of both Hutsons and Burma Roads are predominantly cleared and retain no indigenous ground layer species in the vicinity of where the two access roads are proposed (one to Hutsons Road and one to Burma Road; see Figures 2-2 and 2-3), and are dominated by the same opportunistic introduced annual and perennial species that are found within the two tree patches across the property.

Plate 4-3 **Views along the Burma Road and Hutsons Road reserves: views along the adjacent Burma Road reserve (top), views along the eastern end of the adjacent Hutsons Road reserve (middle), and views along the western end of the adjacent Hutsons Road reserve (bottom right). Pertinent trees are numbered in white. Images taken by author 2/8/22.**

Plate 4-4 **Views of the areas of the proposed stormwater structures for Options 1 and 2: views of the proposed sedimentation basin area from the west (top left) and the east (top right), the area of the proposed wetland looking west (middle left), the area of the proposed wetland looking north (middle right), the alignment of the embankment with side winder gate for flow control looking south across the drainage line (bottom left), the alignment of the embankment with side winder gate for flow control looking north (bottom right). Alignment or extent of structures drawn approximately with red lines. Pertinent trees are numbered in white. Images taken by author 17/8/23.**

The southern patch of 2.30 ha is dominated by a mixed-age River Red Gum canopy with some scattered Silver Wattle, that is dominated by an abundant indigenous ground layer composed of species such as Rough Spear-grass, Common Windmill Grass, Climbing Saltbush, Ruby Saltbush, Curly Windmill Grass, Brown's Lovegrass, Pale Rush, Warrego Grass, Blown Grass, Common Tussock Grass, Swamp Dock, Water Couch, Black Rolypoly, Brown-backed Wallaby-grass and Woolly New Holland Daisy (40 %

projective foliage cover), with annual and perennial introduced species present, such as the woody weed African Boxthorn underneath the tree canopies, and herbaceous species such as Great Brome, Wimmera Ryegrass, Horehound and Winter-grass (30 % projective foliage cover; Appendix A).

The proposed location of the sedimentation basin within the southern patch for stormwater Options 1 and 2 straddles a ground layer native patch of 0.031 ha (310 m^2), that contains indigenous species such as Rough Spear-grass, Common Spike-sedge, Pale Rush, Curly Windmill Grass, Clustered Wallaby-grass, Swamp Dock, Black Rolypoly and Woolly New Holland Daisy (25 % projective foliage cover), but is dominated by a range of introduced species, including Onion-grass, Wimmera Ryegrass, Common Sowthistle, Subterranean Clover, Barley Grass, St. John's Wort and Capeweed (60 % projective foliage cover; Appendix A). The area of the sedimentation basin outside of the delineated ground layer native patch is dominated wholly by introduced species such as Onion-grass, Wimmera Ryegrass, Barley Grass and Capeweed (80 % projective foliage cover).

Plate 4-5 Views of the drainage line: in the west with semi-permanent water (top), and in the east and dry (bottom). Images taken by author 17/8/23.

A total area of 0.019 ha (190 m^2) of the ground layer patch would be removed with Option 1, and an area of 0.0078 ha (78 m^2) removed with Option 2. Tree 5 (a juvenile River Red Gum) is a likely loss with the inlet structure to the sedimentation basin for either option.

The proposed wetland area of 0.11 ha (1,100 m^2) for Option 1 has a ground layer dominated wholly by introduced species such as Onion-grass, Wimmera Ryegrass, Barley Grass and Capeweed (80 % projective foliage cover); however, Trees 17 and 23 – two juvenile River Red Gum – will be within this wetland structure, and both are deemed loss as a consequence.

The drainage line area is dominated by a canopy of River Red Gum, and typical wetter area species such as Leafy Flat Sedge, Pale Rush, Common Spike-sedge, Slender Knotweed, Water pepper, Swamp Dock, Common Tussock Grass and Streaked Arrowgrass. Within the drainage line, there is semi-permanent

surface water near the western boundary near the golf club, but within 100 m to the east, the drainage line is reduced to a usually dry ephemeral creek bed. The imposition of an embankment with side winder gate for flow control at the western end of the drainage line with Option 2 for stormwater management will elevate the water stored within the existing wetland along the drainage line to an area of 715 m^2 at maximum retention. It is considered that a slightly elevated depth for a short duration in this wetland (as indicated by modelling in Afflux Consulting 2023) will have no significant impact on the health, structure and composition of the affected wetland area, as all of these species are adapted to variable height and duration ephemeral flows in their natural ecosystems.

The specific area proposed for the embankment with side winder gate for flow control would have a footprint of 50 m^2, and as this structure would pass through a typical area of the drainage line as described, dominated by indigenous species such as Pale Rush, Common Spike-rush, Leafy Flat Sedge, Slender Knotweed and Water Pepper (50 % projective foliage cover), and a loss of 0.01 ha (100 m^2) of this native vegetation has been assumed given construction disturbance.

Based on the extant remnant vegetation, the property is likely to have been composed of two vegetation communities - NSW Plant Community Type (PCT) - *River Red Gum-sedge dominated very tall open forest in frequently flooded forest wetland along major rivers and floodplains in south-western NSW* in the southern sections of the property along the drainage line, and PCT 76 - *Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions* in the elevated sections of the property in the north above the drainage line (from Environment and Heritage 2012 and DPE 2023d).

4.2 Significant Trees

A total of 318 tree individuals were assessed across the property, and the characteristics of all of these individuals can be viewed in the table in Appendix C.

The location of all assessed trees can be seen in Figures 4-1 to 4-7.

Construction projects that involve earthworks or soil disturbance can cause indirect losses of native vegetation that are retained during construction due to root damage and soil modification within the zone where roots occur. Of particular concern is the longer-term impact of soil compaction and excavation (e.g. trenching for pipelines) close to trees and the effects of this on immediate and longer-term tree health. Standards Australia (2009) has provided guidance and clarity on this issue, and has defined an acceptable distance for tree retention in order to prevent indirect losses of native vegetation during and after construction activities as a guiding principle. These designated Tree Protection Zones (TPZs) should be implemented for the duration of construction activities (Standards Australia 2009) as part of the development conditions.

A TPZ is a specific area above and below the ground, with a radius 12 times the Diameter at Breast Height (dbh; 1.3 m) of any individual tree; the TPZ of trees should be no less than 2 m or greater than 15 m, and it is recommended that physical barriers be erected to delineate the TPZ during construction activities. Should a development impinge on the TPZ area for > 10 % of its area, the tree shall be considered a loss, and will have to be offset (Standards Australia 2009).

In regard to the 318 assessed trees:

- Assessed trees are a mixture of 228 remnant Grey Box, 64 River Red Gum and 1 Weeping Myall, and 25 individuals the woody weed African Boxthorn;
    - Trees 2, 14, 26, 106, 107, 200, 201, 209, 225, 226, 227, 290, 295, 304 and 311 (15 trees) are hollow-bearing individuals;
    - Trees 1 to 47 and Trees 306 to 318 are found near or within the southern patch and are all River Red Gum;

- Trees 61 to 191 are found near or within the northern patch and are mostly Grey Box with some African Boxthorn;
- Trees 192 to 216, and Trees 218 to 302 are found along the northern boundary area of the freehold property as scattered trees or in small patches, and are mostly Grey Box with some African Boxthorn;
- A total of 59 juvenile trees are recent recruits, and are permitted clearing without a permit according to Clause 6(2) of the *Berrigan Development Control Plan 2014* – those being trees that are "….five metres or more in height; or trunk diameter of 20cm or more one metre above the ground" of particular species according to Clause 6(3) including Weeping Myall, Grey Box or River Gum;
- Trees 217, 304 and 305 are found on the southern Hutsons Road reserve;

- In terms of loss:
  - Trees 1, 4, 33, 46 and 47 (5 trees) on the northern periphery of the southern patch are proposed loss;
  - Trees 5, 17 and 23 within the southern patch are proposed losses with Option 1 for the stormwater structures;
  - Tree 5 within the southern patch is a proposed loss with Option 2 for the stormwater structures;
  - Scattered trees and trees within small patches such as Trees 48, 50, 51, 52, 88, 191, 193 to 201, 208, 211, 213 to 222, 228 to 230, 237 to 241, 245 to 250, 252 to 262, 264 to 289 (77 trees) are proposed loses;
  - Of the proposed remnant trees for loss, only Trees 200 and 201 are hollow-bearing individuals, and of which 76 are ≤ 35 cm dbh;
  - The canopy extent of the remnant trees proposed for loss was found to be 0.2221 ha (2,221 m^2) when Option 1 for the stormwater structures was used, with the canopy area extent of 0.2174 ha (2,174 m^2) when Option 2 for the stormwater structures (see Appendix C);
  - Scattered African Boxthorn individuals (Trees 49, 53 to 60, 202 to 207, 223 and 224; 16 individuals) are all proposed losses, while Trees 108 to 115 that are within the northern patch, should be removed;
- The layout has been planned specifically to avoid and minimise the loss of native vegetation on the property. In terms of retention:
  - The trees and ground layer native vegetation of the northern patch of an extent of 0.685 ha has been located within a designated reserve with the development, and will be wholly avoided and retained;
  - Other than Trees 1, 4, 5, 17, 23, 33, 46 and 47 and a ground layer patch of 0.0190 ha (190 m^2) within the southern patch with Option 1 for stormwater structures, OR Trees 1, 4, 5, 33, 46 and 47 and a ground layer patches of 0.0178 ha (178 m^2) within the southern patch with Option 2 for stormwater structures, the majority of the 2.30 ha patch has been located within a designated reserve with the development, and will be avoided and be retained;

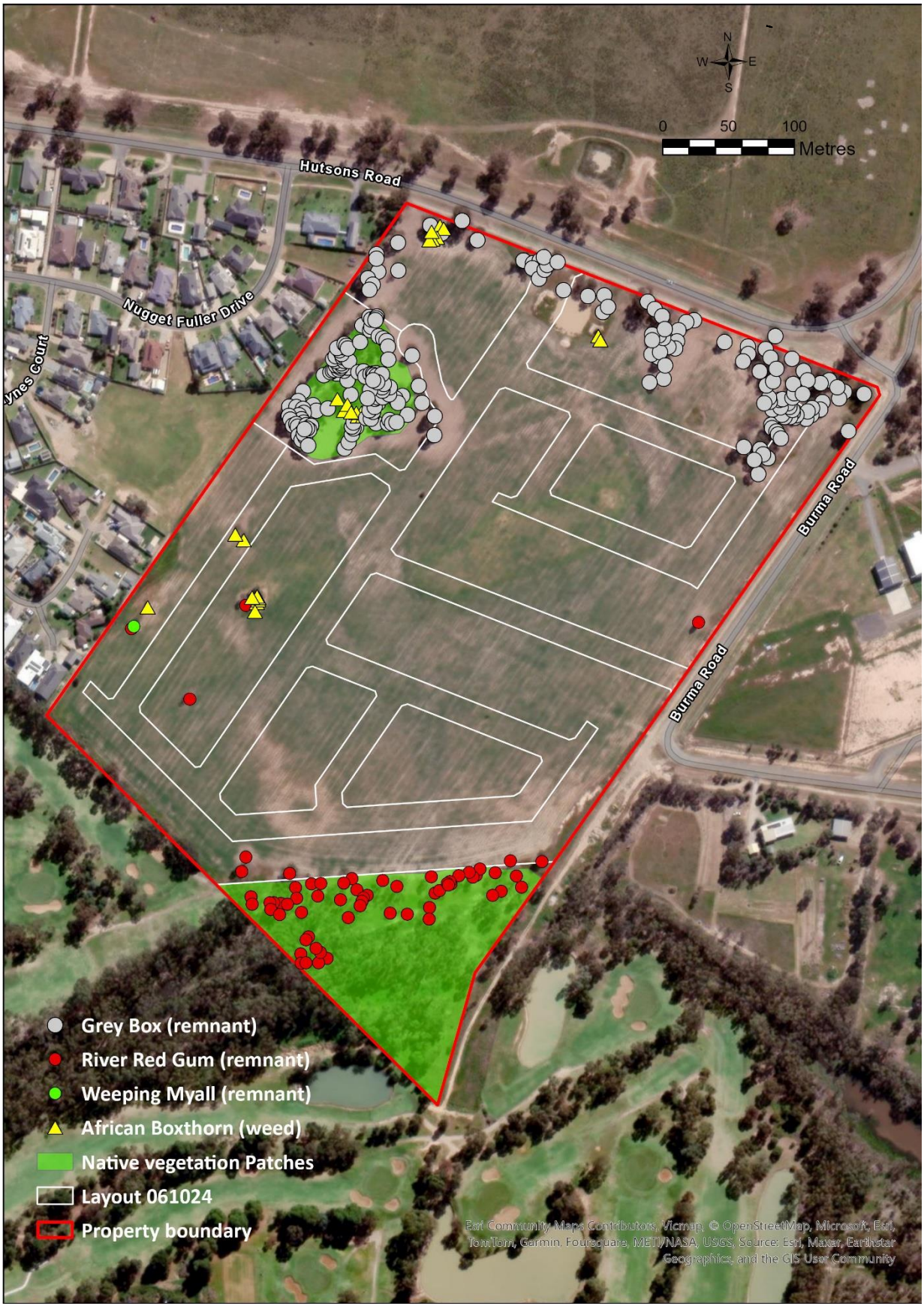

Figure 4-1 **Aerial image of 32 Burma Road Tocumwal, showing the location of assessed trees relative to the proposed development layout and defined native vegetation patches (Image from ESRI Australia 2024).**

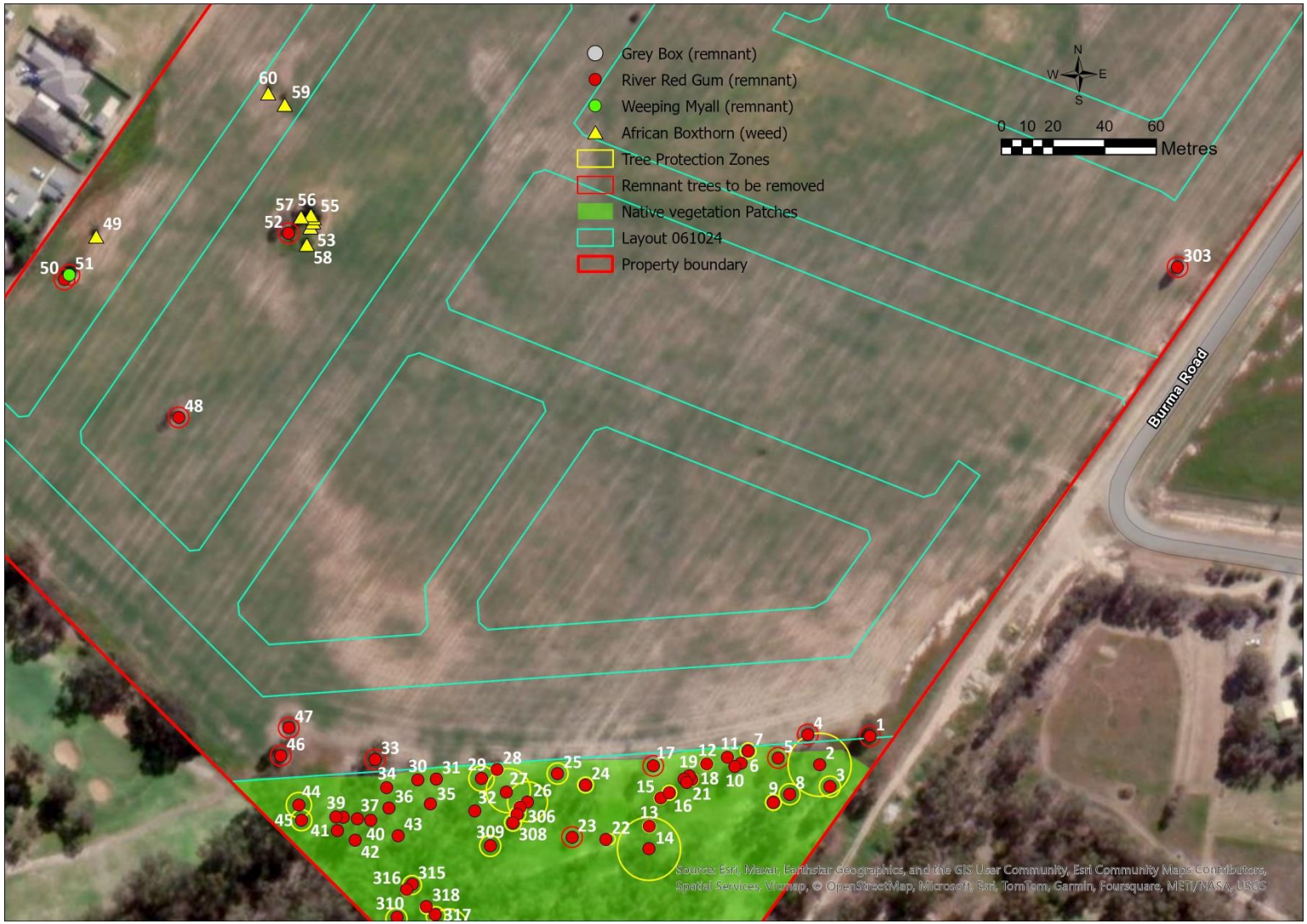

Figure 4-2 **Aerial image of the southern section of 32 Burma Road Tocumwal, showing the location of assessed trees relative to the proposed development layout and defined native vegetation patches. Tree Protection Zones are shown on pertinent trees, and trees proposed for loss are also shown. Numbers are tree identifiers in the table in Appendix C (Image from ESRI Australia 2024).**

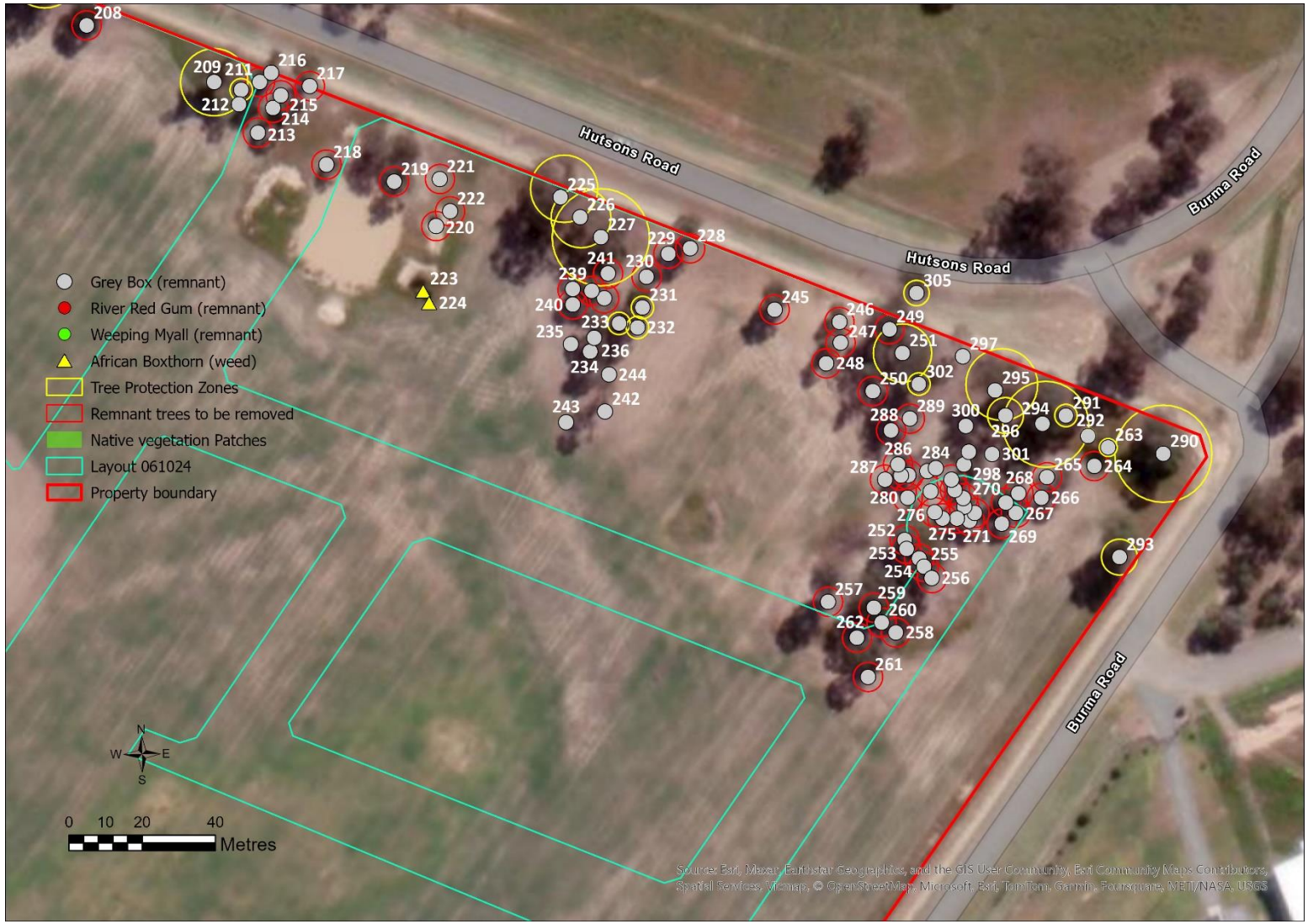

Figure 4-3 **Aerial image of the north-eastern corner of 32 Burma Road Tocumwal, showing the location of assessed trees relative to the proposed development layout and defined native vegetation patches. Tree Protection Zones are shown on pertinent trees, and trees proposed for loss are also shown. Numbers are tree identifiers in the table in Appendix C (Image from ESRI Australia 2024).**

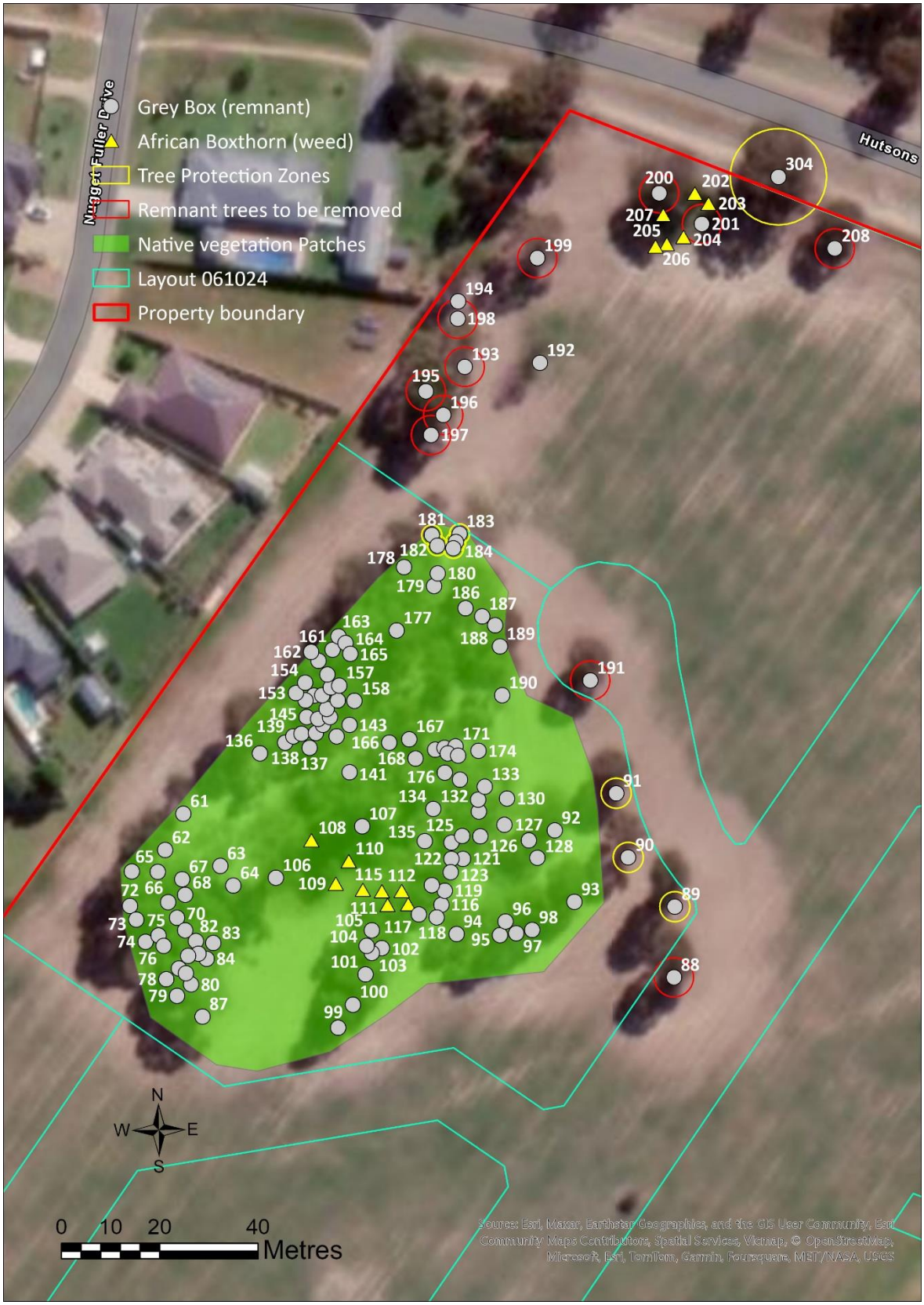

Figure 4-4 **Aerial image of the north-western corner of 32 Burma Road Tocumwal, showing the location of assessed trees relative to the proposed development layout and defined native vegetation patches. Tree Protection Zones are shown on pertinent trees, and trees proposed for loss are also shown. Numbers are tree identifiers in the table in Appendix C (Image from ESRI Australia 2024).**

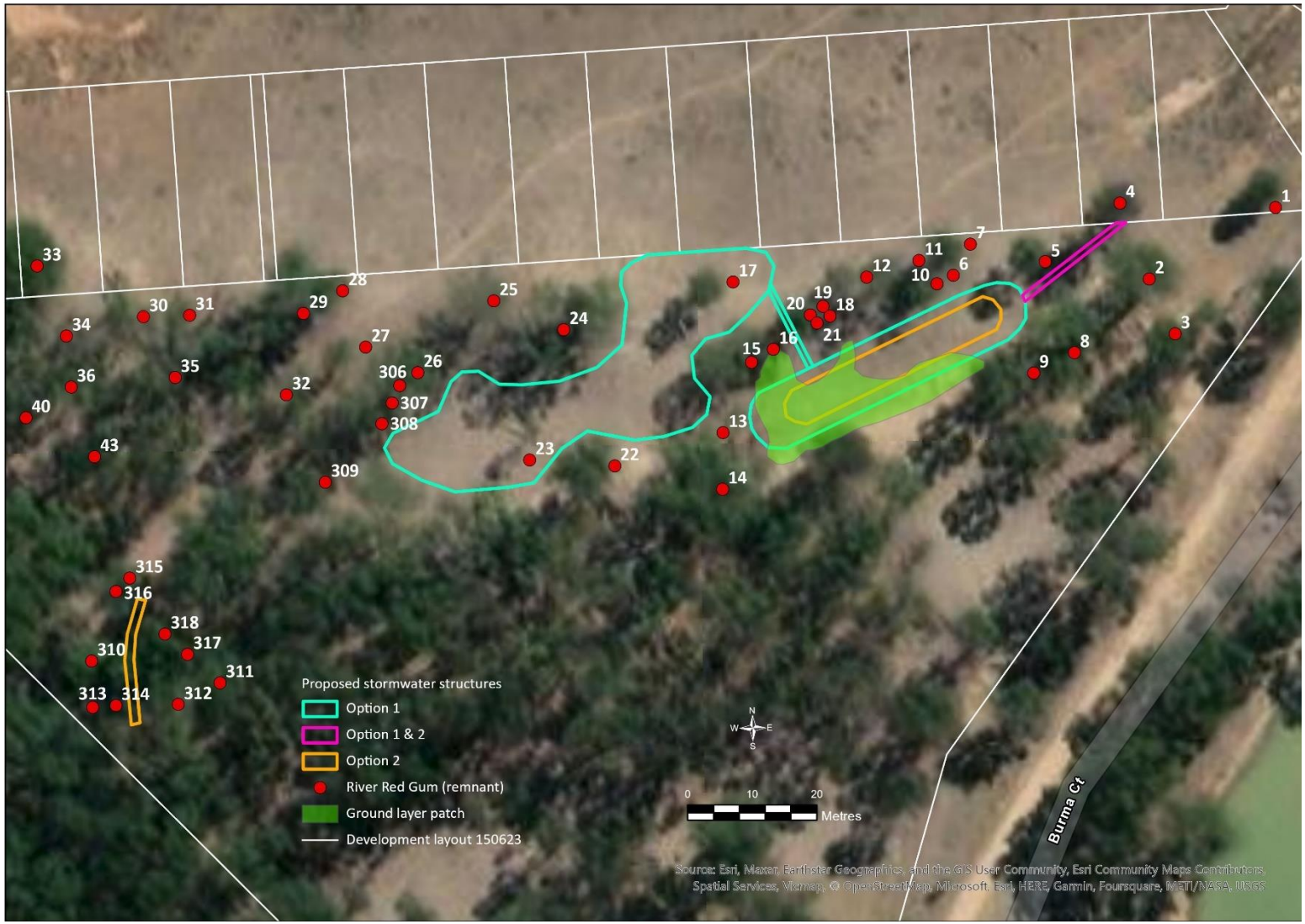

Figure 4-5 **Aerial image of the south-eastern corner woodland patch of 32 Burma Road Tocumwal, showing the location of assessed trees relative to the proposed stormwater structures for both Option 1 and 2, and the defined ground layer native patch. Numbers are tree identifiers in the table in Appendix C (Image from ESRI Australia 2023).**

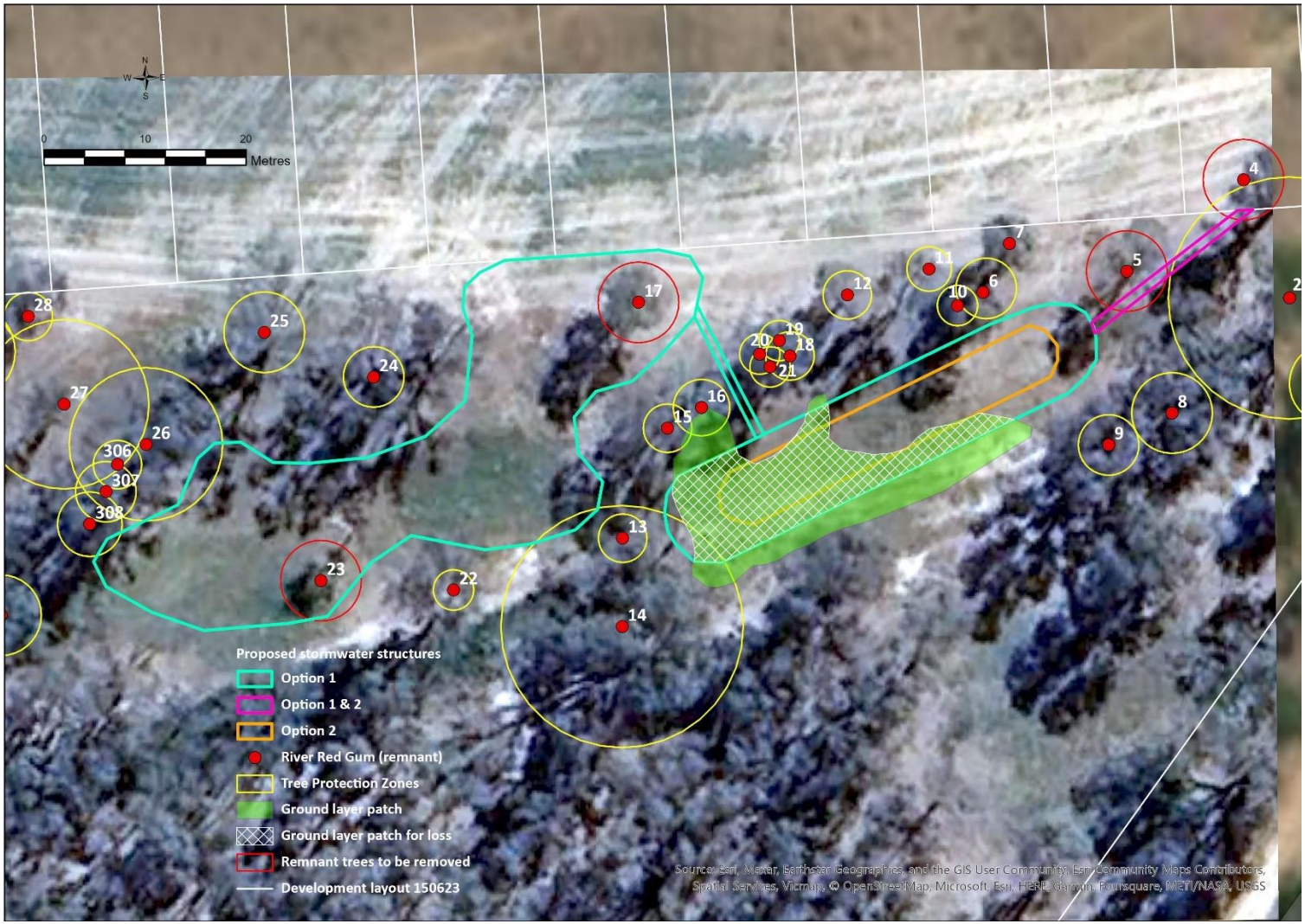

Figure 4-6 **Aerial image of the south-eastern corner woodland patch of 32 Burma Road Tocumwal, showing the location of assessed trees relative to the proposed stormwater structures for both Option 1 and 2 in the east, and the defined ground layer native patch and the area of this proposed for loss. Tree Protection Zones are shown on pertinent trees, and trees proposed for loss are also shown. Numbers are tree identifiers in the table in Appendix C (Image from ESRI Australia 2023, with an inset from Google Earth dated 30/9/23).**

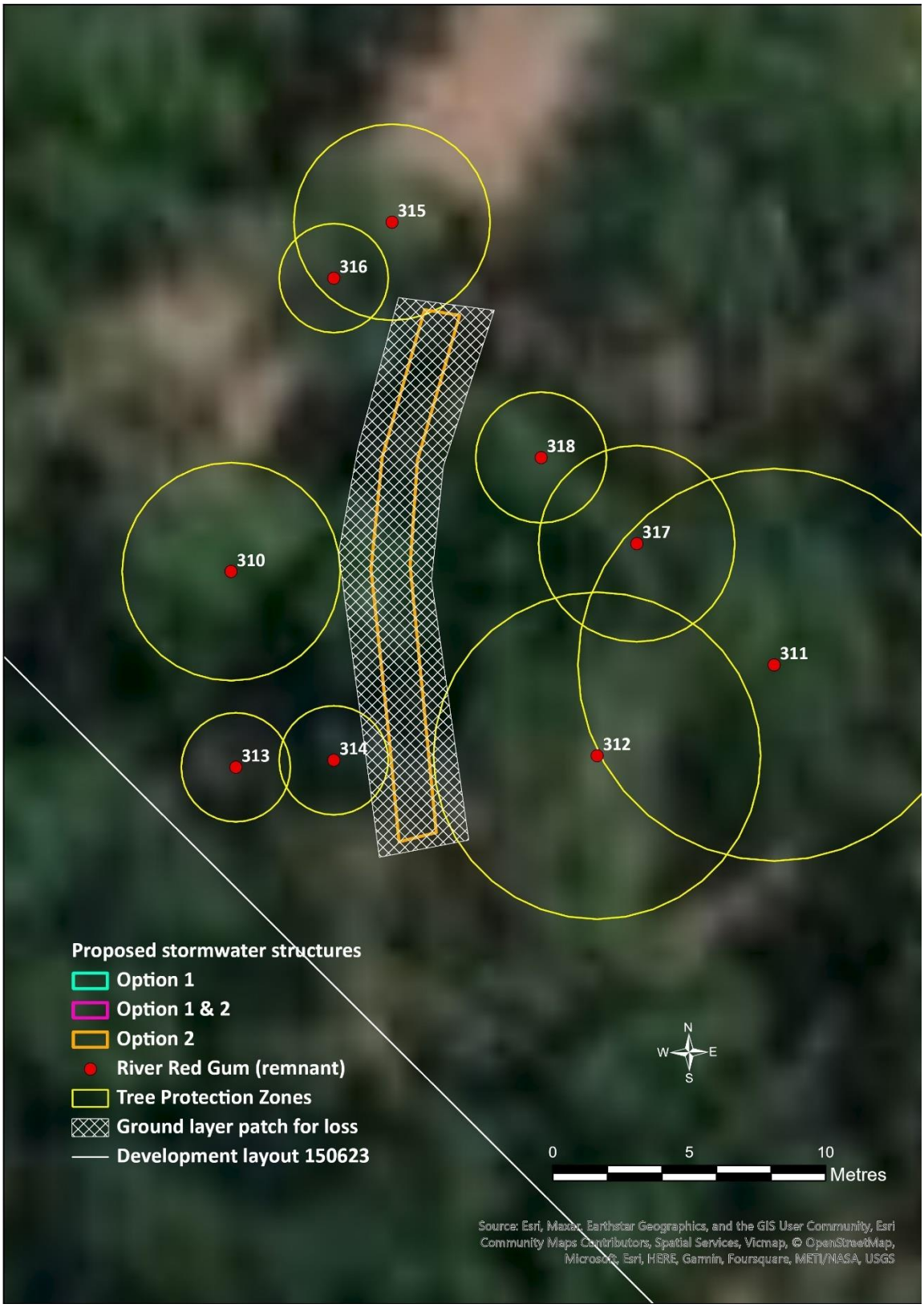

Figure 4-7 **Aerial image of the south-eastern corner woodland patch of 32 Burma Road Tocumwal, showing the location of assessed trees relative to the proposed stormwater structures for Option 2 in the west. The likely area of ground layer native patch proposed for loss is shown. Tree Protection Zones are shown on pertinent trees. Numbers are tree identifiers in the table in Appendix C (Image from ESRI Australia 2023).**

- Trees 89, 90 and 91, and Trees 181 to 185 (7 trees), on the periphery of the northern patch do not have their TPZs impinged, or they are impinged by < 10 %, and will be retained;
- Scattered Trees 192, 209, 210, 212, 225, 226, 227, 231 to 236, 242 to 244, 251, 290 to 297, 293, 302 and 303 (31 trees), are all within proposed freehold lots near lot boundaries and are proposed retentions. For proposed Lots 31, 35 and 36, building envelopes have been located to avoid as much native vegetation as is possible – their TPZs are not impinged, or they are impinged by < 10 %, and will be retained on these lots;
- Trees 283, 284, 294 to 296, and 298 to 301 (9 trees) are found within a reserve in the north-eastern corner of the property, and will be retained;
- Trees 217, 304 and 305 (3 trees) are found on the southern Hutsons Road reserve, and its assumed that any access tracks for individual lots on this northern boundary will be located to avoid the TPZs of all three trees.

In summary, a total of 85 remnant trees – of which two are hollow-bearing and of which 79 are ≤ 35 cm dbh – and a ground layer patch of 0.0190 ha (190 m^2) within the southern patch will be removed with the proposed development if Option 1 for stormwater management is utilised, a combined canopy area extent for loss of 0.2221 ha (2,221 m^2) – and a total native vegetation loss for Option 1 of 0.2411 ha (2,411 m^2). If Option 2 for stormwater management is utilised, a total of 83 remnant trees – of which two are hollow-bearing and of which 77 are ≤ 35 cm dbh – and ground layer patches of 0.0178 ha (178 m^2) within the southern patch will be removed with the proposed development, a combined canopy area extent for loss of 0.2174 ha (2,174 m^2) – and a total native vegetation loss for Option 2 of 0.2352 ha (2,352 m^2).

The trees and ground layer native vegetation of the northern patch of an extent of 0.685 ha has been located within a designated reserve with the development, and will be wholly avoided and retained.

Other than Trees 1, 4, 5, 17, 23, 33, 46 and 47 and a ground layer patch of 0.0190 ha (190 m^2) within the southern patch with Option 1 for stormwater structures, OR, Trees 1, 4, 5, 33, 46 and 47 and ground layer patches of 0.0178 ha (178 m^2) within the southern patch with Option 2 for stormwater structures, the majority of the 2.30 ha patch has been located within a designated reserve with the development, and will be avoided and retained.

A total of 50 remnant trees across the development area will be retained, as their TPZs are not impinged, or they are impinged by < 10 %.

4.3 Fauna

There were 12 species of fauna observed (all indigenous).

Details of those species noted or inferred over the assessment period are detailed in Appendix B.

A family group of Grey-crowned Babbler were observed in the southern patch, and an individual Hooded Robin was observed in the northern patch; both species are listed as *Vulnerable* in New South Wales (DPE 2023a).

There were no other rare or threatened species observed at the site (DPE 2023a).

As indicated previously, the property is fenced as one large paddock, and has been largely cleared of indigenous woody vegetation; however, there are substantial patches of remnant vegetation - remnant indigenous trees and ground layer vegetation - in the north-western corner of the property, and in the south-eastern corner of the property. The patch in the south-eastern corner is dominated by River Red Gum, while the patch in the north-western corner is dominated by Grey Box. There are also scattered individuals and small patches of Grey Box trees along the northern boundary and in the north-eastern corner of the property.

Both patches – of a combined extent of 2.984 ha - will be mostly avoided by the proposed development and will become established reserves; however, a considerable number of Grey Box individuals in small patches and as scattered individuals along or near the northern boundary of the property will be removed with the proposed development.

The cleared and cropped areas of the property were essentially bare earth at the time of assessment – with little vegetation.

The two larger treed patches maintain a ground layer that maintains indigenous ground layer species, with an abundant layer of a range of opportunistic introduced annual and perennial species.

Through the drainage line at the southern end of the property which runs through the adjacent Tocumwal Golf Club, the property maintains a more-or-less contiguous vegetation connection with the Murray River corridor which is 1.3 km south-west of the site (at the south-eastern corner), which clearly confers on the southern patch at least an excellent landscape connectivity.

Not surprisingly, the indigenous fauna observed across the property – notably the two treed patches - is typical of those observed in peri-urban areas that have been substantially cleared but maintain some tree canopy and an understorey structure in patches, such as the indigenous Eastern Grey Kangaroo, Australian Magpie, Australian Raven, Eastern Rosella, Galah, Magpie-lark, Noisy Miner and Sulphur-crested Cockatoo. The dominance in these patches of the indigenous Noisy Miner – a highly aggressive and territorial species – will probably exclude many smaller indigenous birds from the site; however, the presence of this species has not deterred more typical woodland birds such as Hooded Robin, Grey-crowned Babbler, White-winged Chough and Pallid Cuckoo from utilising these patches.

Given the excellent connectivity of the property, especially to the southern patch, the observed species diversity is not surprising, given:

- The lack of continuous and mixed-age tree canopies in the patches;
- The presence of hollow-bearing trees and standing dead trees in both patches, which provides breeding and residential habitat for some fauna;
- Despite the lack of understorey woody vegetation and the commensurate simplified vegetation structure, an abundant and relatively diverse indigenous ground layer provides some foraging habitat for a range of fauna.

However, the modification of the patches does lead to some limitations in habitat resources:

- the lack of fallen timber, which would considerably limit mammal, reptile, bat and bird species residency;
- the likely presence of feral animal populations such as foxes and feral/semi-domestic/domestic cats, which would actively predate any ground-dwelling or near ground-dwelling species heavily.

On this basis, many fauna will be able to utilise the breeding, hunting and foraging resources found in both patches, especially in the southern patch, despite modification resulting in a simplified vegetation structure, and the lack of structural and compositional diversity. It is also highly reasonable to assume that many mobile fauna found within the Murray River corridor will occasionally stray from the corridor and utilise the limited habitat resources of the southern and northern patch because of the excellent connectivity; these patches may even be suitable habitat for many species in terms of breeding and residence. The remainder of the site, which has been cleared, is far less likely to be suitable habitat for these threatened fauna.

4.4 Threatened Species and Communities

4.4.1 Threatened community likelihood

Matters of National Environmental Significance searching reveals that the nationally critically endangered *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* community, and the nationally endangered *Grey Box Grassy Woodlands and Derived Native Grasslands of South-eastern Australia,* and the *Weeping Myall Woodlands* communities occur within a 10 km radius of the sites (DCCEEW 2023).

Threatened Ecological Communities (TECs) are listed in the schedules of the *Biodiversity Conservation Act 2016*. Several TECs are considered to occur within the district of the proposed alignment: *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions,* the *Allocasuarina luehmannii Woodland in the Riverina and Murray-Darling Depression Bioregions,* the *Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes Bioregions,* and *White Box Yellow Box Blakely's Red Gum Woodland* (known as Grassy Box Gum Woodland) are all listed as *Endangered* under the Act (DPE 2023b).

As stated previously, based on the extant remnant vegetation, the property is likely to have been composed of two vegetation communities - NSW Plant Community Type (PCT) 7 - *River Red Gum-sedge dominated very tall open forest in frequently flooded forest wetland along major rivers and floodplains in south-western NSW* in the southern sections of the property along the drainage line, and PCT 76 - *Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions* in the elevated sections of the property in the north above the floodplain; the cleared areas were clearly PCT 0 – *Non-native* (from Environment and Heritage 2012 and DPE 2023d).

Given the extant remnant vegetation on the site, it would seem likely that prior to clearing, the lower elevations of the property on the drainage line were indeed PCT 7, and the elevated areas in the north away from the drainage line were PCT 76 (DPE 2023d); on this basis, the northern patch is a modified remnant of PCT 76, and the southern patch is a modified remnant of PCT 7.

The northern patch is therefore a remnant of PCT 76 - *Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions* (*Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions*).

The small patches and scattered individuals of Grey Box proposed for removal in the northern sections of the site are severely disturbed underneath their canopies through compaction and soil disturbance due to close proximity cultivation for cropping, and are dominated by annual and perennial introduced species, with no indigenous ground layer species remaining.

Inland Grey Box Woodland in the Riverina

The comments in this section are made with specific reference to the vegetation compositional and structural characteristics described in the *NSW Threatened Species Scientific Committee final determination* to list *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions* as an Endangered Ecological Community (DPIE 2022).

In regard to the proposed development area:

- Given the extant remnant vegetation on the site, it would seem likely that prior to clearing, the elevated areas in the north away from the drainage line were PCT 76 (DPE 2023d). Most of this elevated section of the property has been cleared;

- The northern patch is a remnant of PCT 76 and is considered to be part of the TEC *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions*, as it contains hollow-bearing individuals, and at least 2 younger cohorts of recruits, as well as a dominant albeit low diversity indigenous ground layer, and non-vascular surfaces and some areas of soil crust (*NSW Threatened Species Scientific Committee final determination* (DPIE 2022). This patch will be wholly retained;
- The small patches and scattered individuals of Grey Box – including three hollow-bearing trees but which is mostly younger individuals that are predominantly < 30 cm diameter at breast height (dbh) – that are proposed for removal in the northern sections of the site are severely disturbed underneath their canopies through compaction and soil disturbance due to close proximity cultivation for cropping, are dominated by annual and perennial introduced species, with no indigenous ground layer species remaining, and no non-vascular surfaces and no soil crusts;
- The small patches and scattered individuals of Grey Box that are proposed for removal in the northern sections of the site <u>are not</u> considered to be part of the TEC *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions* because the severe disturbance that they have experienced is highly unlikely to respond to assisted natural regeneration (*NSW Threatened Species Scientific Committee final determination* (DPIE 2022).

4.4.2 Threatened species likelihood

There were two rare or threatened fauna species under the *Biodiversity Conservation Act 2016* observed at the property – Hooded Robin and Grey-crowned Babbler (DPE 2023a).

The likelihood of presence for all recorded threatened species within a 10 km radius of the site has been considered (DPE 2023a).

BioNet – Website of the Atlas of NSW Wildlife and *Matters of National Environmental Significance* searches revealed that there were records or predicted occurrences forty nine (49) threatened fauna species within a 10 km radius of the site (DPE 2023a, DCCEEW 2021; Appendix D).

BioNet – Website of the Atlas of NSW Wildlife and *Matters of National Environmental Significance* revealed that there were seven (7) records or predicted occurrences of threatened flora species within a 10 km radius of the site (DPE 2023a, DCCEEW 2023; Appendix D).

Through the drainage line at the southern end of the property which runs through the adjacent Tocumwal Golf Club, the property maintains a more-or-less contiguous vegetation connection with the Murray River corridor which is 1.3 km south-west of the site (at the south-eastern corner), which clearly confers on the southern patch at least an excellent landscape connectivity.

The likelihood of the presence of these species and their likelihood of utilisation of the proposed development area was considered and rated based on the habitat preferences of the species, the habitat quality of the site, the good landscape connectivity, known records for species and the currency of these records, and the composition, abundance and structure of the vegetation of the site (Appendix D).

Of these species, all species of flora and thirty four fauna species were not likely to occur on the proposed works area or to utilise it because of the following issues (or combination of them):

- the lack of a suitable community/habitat type;
- the loss of connectivity through clearing of habitat or disconnectedness;
- the length of time since last sighting or lack of a sighting;
- disturbance to, and simplification of, the site.

Fifteen species of fauna – including the two species observed (Grey-crowned Babbler and Hooded Robin) - Barking Owl, Black-chinned Honeyeater, Black Falcon, Brown Treecreeper, Dusky Woodswallow, Flame Robin, Grey-crowned Babbler, Hooded Robin, Koala, Satin Flycatcher, South-eastern Long-eared Bat, Southern Myotis, Superb Parrot, Varied Sittella and White-bellied Sea-eagle - were considered to have potential to utilise the proposed development site and environs (Appendix B).

Given the excellent connectivity of the property, especially to the southern patch, the observed species diversity is not surprising, given:

- The lack of continuous and mixed-age tree canopies in the patches;
- The presence of hollow-bearing trees and standing dead trees in both patches, which provides breeding and residential habitat for some fauna;
- Despite the lack of understorey woody vegetation and the commensurate simplified vegetation structure, an abundant and relatively diverse indigenous ground layer provides some foraging habitat for a range of fauna.
- However, the modification of the patches does lead to some limitations in habitat resources:
- the lack of fallen timber, which would considerably limit mammal, reptile, bat and bird species residency;
- the likely presence of feral animal populations such as foxes and feral/semi-domestic/domestic cats, which would actively predate any ground-dwelling or near ground-dwelling species heavily.

On this basis, many fauna will be able to utilise the breeding, hunting and foraging resources found in both patches, especially in the southern patch, despite modification resulting in a simplified vegetation structure, and the lack of structural and compositional diversity. It is also highly reasonable to assume that many mobile fauna found within the Murray River corridor will occasionally stray from the corridor and utilise the limited habitat resources of the southern and northern patch because of the excellent connectivity; these patches may even be suitable habitat for many species in terms of breeding and residence. However, the remainder of the site, which has been cleared, is far less likely to be suitable habitat for these threatened fauna.

In summary, a total of 85 remnant trees – of which two are hollow-bearing and of which 79 are ≤ 35 cm dbh – and a ground layer patch of 0.0190 ha (190 m^2) within the southern patch will be removed with the proposed development if Option 1 for stormwater management is utilised, a combined canopy area extent for loss of 0.2221 ha (2,221 m^2) – and a total native vegetation loss for Option 1 of 0.2411 ha (2,411 m^2). If Option 2 for stormwater management is utilised, a total of 83 remnant trees – of which two are hollow-bearing and of which 77 are ≤ 35 cm dbh – and ground layer patches of 0.0178 ha (178 m^2) within the southern patch will be removed with the proposed development, a combined canopy area extent for loss of 0.2174 ha (2,174 m^2) – and a total native vegetation loss for Option 2 of 0.2352 ha (2,352 m^2).

4.4.3 Assessment of Significance

Part 7 Division 1 Section 7.3 of the *Biodiversity Conservation Act 2016* sets out five parameters that a determining authority must consider in deciding whether an activity is likely to have a significant effect on threatened species, populations, or ecological communities, or their habitats.

As indicated previously, the property is fenced as one large paddock, and has been largely cleared of indigenous woody vegetation; however, there are substantial patches of remnant vegetation - remnant indigenous trees and ground layer vegetation - in the north-western corner of the property, and in the south-eastern corner of the property. The patch in the south-eastern corner is dominated by River Red Gum, while the patch in the north-western corner is dominated by Grey Box. There are

also scattered individuals and small patches of Grey Box trees along the northern boundary and in the north-eastern corner of the property.

Both patches – of a combined extent of 2.984 ha - will be mostly avoided by the proposed development and will become established reserves; however, a considerable number of Grey Box individuals in small patches and as scattered individuals along or near the northern boundary of the property will be removed with the proposed development.

The cleared and cropped areas of the property were essentially bare earth at the time of assessment – with little vegetation.

Through the drainage line at the southern end of the property which runs through the adjacent Tocumwal Golf Club, the property maintains a more-or-less contiguous vegetation connection with the Murray River corridor which is 1.3 km south-west of the site (at the south-eastern corner), which clearly confers on the southern patch at least an excellent landscape connectivity.

The subdivision development will result in the removal of a total of 85 remnant trees – of which two are hollow-bearing and of which 79 are ≤ 35 cm dbh – and a ground layer patch of 0.0190 ha (190 m^2) within the southern patch will be removed with the proposed development if Option 1 for stormwater management is utilised, a combined canopy area extent for loss of 0.2221 ha (2,221 m^2) – and a total native vegetation loss for Option 1 of 0.2411 ha (2,411 m^2). If Option 2 for stormwater management is utilised, a total of 83 remnant trees – of which two are hollow-bearing and of which 77 are ≤ 35 cm dbh – and ground layer patches of 0.0178 ha (178 m^2) within the southern patch will be removed with the proposed development, a combined canopy area extent for loss of 0.2174 ha (2,174 m^2) – and a total native vegetation loss for Option 2 of 0.2352 ha (2,352 m^2).

Option 2 for stormwater management will elevate the water stored within the existing wetland along the drainage line to an area of 715 m^2 at maximum retention. It is considered that a slightly elevated depth for a short duration in this wetland (as indicated by modelling in Afflux Consulting 2023) will have no significant impact on the health, structure and composition of the affected wetland area, as all of these species are adapted to variable height and duration ephemeral flows in their natural ecosystems.

A total of 50 remnant trees across the development area will be retained, as their TPZs are not impinged, or they are impinged by < 10 %.

Seven threatened communities, seven threatened species of flora and forty nine species of fauna have been recorded within a 10 km radius of the site (DPE 2023a) or are known or predicted to occur within 10 km of the site (DCCEEW 2023)(Appendix D).

After likelihood assessment, no representative threatened communities or threatened flora are considered likely to occur in the area, and fifteen fauna species have been determined to have potential to occur on the site (including two of the fifteen species that were observed), and these have been evaluated using the five parameters (Appendix D).

The application of the five parameters of Part 7 Division 1 Section 7.3 of the *Biodiversity Conservation Act 2016* in the following section specifically addresses the effects of the development on the fifteen threatened species.

Fauna. All fifteen terrestrial threatened fauna that are considered likely to utilise the site (including Grey-crowned Babbler and Hooded Robin that were observed on the site) are being considered in the following section collectively. As all of them have been recorded recently within proximity, and all have similar issues in regard to their likely usage of the site, given the clearing, modification and low quality of the development area, but excellent landscape connectedness, this is considered a prudent action rather than providing a lengthy and repetitive response for each of the following individual species - Barking Owl, Black-chinned Honeyeater, Black Falcon, Brown

Treecreeper, Dusky Woodswallow, Flame Robin, Grey-crowned Babbler, Hooded Robin, Koala, Satin Flycatcher, South-eastern Long-eared Bat, Southern Myotis, Superb Parrot, Varied Sittella and White-bellied Sea-eagle.

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

The subdivision development will result in the removal of 85 remnant trees – of which two are hollow-bearing and of which 79 are ≤ 35 cm dbh – and a ground layer patch of 0.0190 ha (190 m^2) within the southern patch will be removed with the proposed development if Option 1 for stormwater management is utilised, a combined canopy area extent for loss of 0.2221 ha (2,221 m^2) – and a total native vegetation loss for Option 1 of 0.2411 ha (2,411 m^2). If Option 2 for stormwater management is utilised, a total of 83 remnant trees – of which two are hollow-bearing and of which 77 are ≤ 35 cm dbh – and ground layer patches of 0.0178 ha (178 m^2) within the southern patch will be removed with the proposed development, a combined canopy area extent for loss of 0.2174 ha (2,174 m^2) – and a total native vegetation loss for Option 2 of 0.2352 ha (2,352 m^2).

Option 2 for stormwater management will elevate the water stored within the existing wetland along the drainage line to an area of 715 m^2 at maximum retention. It is considered that a slightly elevated depth for a short duration in this wetland (as indicated by modelling in Afflux Consulting 2023) will have no significant impact on the health, structure and composition of the affected wetland area, as all of these species are adapted to variable height and duration ephemeral flows in their natural ecosystems.

It is unlikely that the loss of this mostly juvenile native vegetation from a well-connected site to the Murray River corridor where 2.9 ha of patches that maintain indigenous trees and ground layer and 50 remnant trees (including 12 hollow-bearing trees) are to be retained, will place any of the thirteen species threatened species that have potential to find the site and utilise it given the available habitat resources, and the two species that are already present, at risk of local extinction.

1 (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

Not applicable.

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

Not applicable.

1 (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

The subdivision development will result in the removal of 85 remnant trees – of which two are hollow-bearing and of which 79 are ≤ 35 cm dbh – and a ground layer patch of 0.0190 ha (190 m^2) within the southern patch will be removed with the proposed development if Option 1 for stormwater management is utilised, a combined canopy area extent for loss of 0.2221 ha (2,221 m^2) – and a total native vegetation loss for Option 1 of 0.2411 ha (2,411 m^2). If Option 2 for stormwater management is utilised, a total of 83 remnant trees – of which two are hollow-bearing and of which 77 are ≤ 35 cm dbh – and ground layer patches of 0.0178 ha (178 m^2) within the southern patch will be removed with the proposed development, a combined

canopy area extent for loss of 0.2174 ha (2,174 m^2) – and a total native vegetation loss for Option 2 of 0.2352 ha (2,352 m^2).

Option 2 for stormwater management will elevate the water stored within the existing wetland along the drainage line to an area of 715 m^2 at maximum retention. It is considered that a slightly elevated depth for a short duration in this wetland (as indicated by modelling in Afflux Consulting 2023) will have no significant impact on the health, structure and composition of the affected wetland area, as all of these species are adapted to variable height and duration ephemeral flows in their natural ecosystems.

It is unlikely that the loss of this mostly juvenile native vegetation from a well-connected site to the Murray River corridor where 2.9 ha of patches that maintain indigenous trees and ground layer and 50 remnant trees (including 12 hollow-bearing trees) are to be retained, will place any of the thirteen species threatened species that have potential to find the site and utilise it given the available habitat resources, and the two species that are already present, at any risk because of the minimal loss of secondary habitat to be removed.

(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

The subdivision development will result in the removal of 85 remnant trees – of which two are hollow-bearing and of which 79 are ≤ 35 cm dbh – and a ground layer patch of 0.0190 ha (190 m^2) within the southern patch will be removed with the proposed development if Option 1 for stormwater management is utilised, a combined canopy area extent for loss of 0.2221 ha (2,221 m^2) – and a total native vegetation loss for Option 1 of 0.2411 ha (2,411 m^2). If Option 2 for stormwater management is utilised, a total of 83 remnant trees – of which two are hollow-bearing and of which 77 are ≤ 35 cm dbh – and ground layer patches of 0.0178 ha (178 m^2) within the southern patch will be removed with the proposed development, a combined canopy area extent for loss of 0.2174 ha (2,174 m^2) – and a total native vegetation loss for Option 2 of 0.2352 ha (2,352 m^2).

Option 2 for stormwater management will elevate the water stored within the existing wetland along the drainage line to an area of 715 m^2 at maximum retention. It is considered that a slightly elevated depth for a short duration in this wetland (as indicated by modelling in Afflux Consulting 2023) will have no significant impact on the health, structure and composition of the affected wetland area, as all of these species are adapted to variable height and duration ephemeral flows in their natural ecosystems.

It is unlikely that the loss of this mostly juvenile native vegetation from a well-connected site to the Murray River corridor where 2.9 ha of patches that maintain indigenous trees and ground layer and 50 remnant trees (including 12 hollow-bearing trees) are to be retained, will place any of the thirteen species threatened species that have potential to find the site and utilise it given the available habitat resources, and the two species that are already present, will not result in any isolation or fragmentation of habitat for any of the threatened species.

(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 subdivision development will result in the removal of 85 remnant trees – of which two are hollow-bearing and of which 79 are ≤ 35 cm dbh – and a ground layer patch of 0.0190 ha (190 m2) within the southern patch will be removed with the proposed development if Option 1 for stormwater management is utilised, a combined canopy area extent for loss of 0.2221 ha (2,221 m2) – and a total native vegetation loss for Option 1 of 0.2411 ha (2,411 m2). If Option 2 for stormwater management is utilised, a total of 83 remnant trees – of which two are hollow-bearing and of which 77 are ≤ 35 cm dbh – and ground layer patches

of 0.0178 ha (178 m2) within the southern patch will be removed with the proposed development, a combined canopy area extent for loss of 0.2174 ha (2,174 m2) – and a total native vegetation loss for Option 2 of 0.2352 ha (2,352 m2).
Option 2 for stormwater management will elevate the water stored within the existing wetland along the drainage line to an area of 715 m2 at maximum retention. It is considered that a slightly elevated depth for a short duration in this wetland (as indicated by modelling in Afflux Consulting 2023) will have no significant impact on the health, structure and composition of the affected wetland area, as all of these species are adapted to variable height and duration ephemeral flows in their natural ecosystems.
It is unlikely that the loss of this mostly juvenile native vegetation from a well-connected site to the Murray River corridor where 2.9 ha of patches that maintain indigenous trees and ground layer and 50 remnant trees (including 12 hollow-bearing trees) are to be retained, will place any of the thirteen species threatened species that have potential to find the site and utilise it given the available habitat resources, and the two species that are already present, will not result in any impact on the long-term survival of any of the threatened species.

1 (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):

No such declaration has been made for the area.

1 (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.

As indicated, the proposed development will result in two key threatening processes - *Clearing of native vegetation* and *Loss of hollow-bearing trees.*

5. AVOIDANCE AND MINIMISATION OF NATIVE VEGETATION

The layout has been planned specifically to avoid and minimise the loss of native vegetation on the property. In terms of retention:

- The trees and ground layer native vegetation of the northern patch of an extent of 0.685 ha has been located within a designated reserve with the development, and will be wholly avoided and retained;
- Other than Trees 1, 4, 5, 17, 23, 33, 46 and 47 and a ground layer patch of 0.0190 ha (190 m^2) within the southern patch with Option 1 for stormwater structures, OR Trees 1, 4, 5, 33, 46 and 47 and a ground layer patches of 0.0178 ha (178 m^2) within the southern patch with Option 2 for stormwater structures, the majority of the 2.30 ha patch has been located within a designated reserve with the development, and will be avoided and be retained;
- Trees 89, 90 and 91, and Trees 181 to 185 (7 trees), on the periphery of the northern patch do not have their TPZs impinged, or they are impinged by < 10 %, and will be retained;
- Scattered Trees 192, 209, 210, 212, 225, 226, 227, 231 to 236, 242 to 244, 251, 290 to 297, 293, 302 and 303 (31 trees), are all within proposed freehold lots near lot boundaries and are proposed retentions. For proposed Lots 31, 35 and 36, building envelopes have been located to avoid as much native vegetation as is possible – their TPZs are not impinged, or they are impinged by < 10 %, and will be retained on these lots;
- Trees 283, 284, 294 to 296, and 298 to 301 (9 trees) are found within a reserve in the north-eastern corner of the property, and will be retained;
- Trees 217, 304 and 305 (3 trees) are found on the southern Hutsons Road reserve, and its assumed that any access tracks for individual lots on this northern boundary will be located to avoid the TPZs of all three trees.

The generation of a Biodiversity Offset Scheme Entry Threshold Report (BOSET Report)(DPE 2023f) reveals that the minimum Lot Size according to the *Murray Local Environmental Plan 2011* (New South Wales Government 2021) is 600 m^2, and that the Area Clearing Threshold required to enter the Biodiversity Offset Scheme (BOS), and for a Biodiversity Development Assessment Report (BDAR) to be completed, is 0.25 ha.

Therefore, for development to avoid entering the BOS and requiring a BDAR to be undertaken, native vegetation clearance must be < 0.25 ha; the total extent of native vegetation loss was found to be 0.2411 ha (2,411 m^2) if Option 1 for stormwater management is utilised, and 0.2352 ha (2,352 m^2) if Option 2 for stormwater management is utilised. This is less than the clearance threshold of 0.25 ha for either option, and a BDAR is not triggered by this mechanism.

6. RECOMMENDATION

The parcel where the development is proposed is not in a declared area of outstanding biodiversity value, the proposed development area is not mapped as *Vulnerable or Sensitive Regulated Land* according to the Section 60F of the *Local Land Services Act 2013*, and is also not mapped as an area of Biodiversity Value (DPE 2023e; see Appendix E), and a BDAR is not triggered on the basis of this mechanism.

As indicated, the generation of BOSET Report reveals that the minimum Lot Size is 600 m^2, and that the Area Clearing Threshold required to enter the BOS, and for a BDAR to be completed, is 0.25 ha.

Therefore, for the development to avoid entering the BOS and requiring a BDAR to be undertaken, native vegetation clearance must be < 0.25 ha, and the estimated native vegetation loss is less than this threshold amount; therefore, a BDAR is not triggered on the basis of this mechanism.

The total extent of native vegetation loss was found to be 0.2411 ha (2,411 m^2) if Option 1 for stormwater management is utilised, and 0.2352 ha (2,352 m^2) if Option 2 for stormwater management is utilised. This is less than the clearance threshold of 0.25 ha for either option, and a BDAR is not triggered by this mechanism. Option 2 has been assumed in the BOSET Report.

The whole property has been evaluated and subjected to a Test of Significance under Part 7 Division 1 Section 7.3 of the *Biodiversity Conservation Act 2016*, and it is concluded that in the event of the development incurring the loss of 85 remnant trees, of which two are hollow-bearing, and a ground layer patch of 0.0190 ha (190 m^2) within the southern patch if Option 1 for stormwater management is utilised, OR, a total of 83 remnant trees – of which two are hollow-bearing and of which 77 are ≤ 35 cm dbh – and ground layer patches of 0.0178 ha (178 m^2) within the southern patch if Option 2 for stormwater management is utilised, there will not be any significant impacts on any threatened species or community as a consequence, and a BDAR is not triggered on the basis of this mechanism.

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APPENDIX A FLORA INVENTORY FOR 32 BURMA ROAD TOCUMWAL

Recorded vascular plant species for the assessed areas on the 2nd August 2022 and 17th August 2023. Vascular flora have been recorded for presence using a cover-abundance scale that is outlined in Table 3-1.

An asterisk denotes an introduced species.

Common name	Scientific name	Patch South	Patch North	Basin patch	Drainage line
Silver Wattle	*Acacia dealbata*	+			
Capeweed	*Arctotheca calendula**	+		2	
Rough Spear-grass	*Austrostipa scabra*	2	2	2	
Great Brome	*Bromus diandrus**	2	1		
Kikuyu Grass	*Cenchrus clandestinum**				1
Common Windmill Grass	*Chloris truncata*		1		
Leafy Flat Sedge	*Cyperus lucidus*				2
Annual Veldt-grass	*Ehrharta longiflora**	1			
Climbing Saltbush	*Einadia nutans*	2	2		
Common Spike-sedge	*Eleocharis acuta*			1	2
Ruby Saltbush	*Enchylaena tomentosa*		+		
Curly Windmill Grass	*Enteropogon acicularis*	2	2	2	1
Brown's Lovegrass	*Eragrostis brownii*	2			
River Red Gum	*Eucalyptus camaldulensis*	2			
Grey Box	*Eucalyptus microcarpa*		2		
Barley Grass	*Hordeum leporinum**			1	
St. John's Wort	*Hypericum perforatum**			+	
Cat's Ear	*Hypochaeris radicata**				1
Pale Rush	*Juncus pallidus*	2		2	2
Blown Grass	*Lachnagrostis avenacea*	1			
Wimmera Ryegrass	*Lolium rigidum**		2	2	2
African Boxthorn	*Lycium ferocissimum**	1	2		
Horehound	*Marrubium vulgare**	1	1		
Warrego Grass	*Paspalidium jubiflorum*	2			
Water Couch	*Paspalum distichum*	2	1		
Slender Knotweed	*Persicaria decipiens*				2
Water Pepper	*Persicaria hydropiper*				2
Winter-grass	*Poa annua**		+		
Common Tussock Grass	*Poa labillardierei*	2			3
Onion-grass	*Romulea rosea**	2		2	2
Swamp Dock	*Rumex brownii*	1			2
Brown-backed Wallaby-grass	*Rytidosperma duttonianum*	2	2		+
Clustered Wallaby-grass	*Rytidosperma racemosum*			2	
Black Rolypoly	*Sclerolaena muricata*	2	2	2	
Common Sowthistle	*Sonchus oleraceus**			1	2
White Clover	*Trifolium repens**	1			
Subterranean Clover	*Trifolium subterraneum**	1		2	
Streaked Arrowgrass	*Triglochin striata*				1
Woolly New Holland Daisy	*Vittadinia gracilis*	2	1	1	+

Common name	Scientific name	Patch South	Patch North	Basin patch	Drainage line
Silver Wattle	*Acacia dealbata*	+			
Indigenous species projective foliage cover (%)		40	30	25	50
Introduced species projective foliage cover (%)		30	10	60	10
Litter cover (%)		20	20	10	40
Bare earth/non-vasculars (%)		10	40	5	0

APPENDIX B OBSERVED FAUNA OF 32 BURMA ROAD TOCUMWAL

Observed or inferred fauna at the sites and surrounds between 10.00 am and 12.00 pm on the 4th August 2023 and 12.00 to 1.30 pm on the 17th August 2023.

An asterisk denotes an introduced species.

Common name	Scientific name	Mode of observation[1]
Birds		
Australian Magpie	*Gymnorhina tibicen*	A,V
Australian Raven	*Corvus coronoides*	A
Eastern Rosella	*Platycercus eximius*	A,V
Galah	*Eolophus roseicapilla*	A,V
Grey-crowned Babbler	*Pomatostomus temporalis*	A,V
Hooded Robin	*Melanodryas cucullata cucullata*	V
Magpie-lark	*Grallina cyanoleuca*	A
Noisy Miner	*Manorina melanocephala*	A,V
Pallid Cuckoo	*Cacomantis pallidus*	A
Sulphur-crested Cockatoo	*Cacatua galerita*	A,V
White-winged Chough	*Corcorax melanorhamphos*	A,V,N
Mammals		
Eastern Grey Kangaroo	*Macropus giganteus*	V,S

1. Identification method: A = audible call; V = visual; N = distinctive nest; S = scat.

APPENDIX C ASSESSED TREES

An asterisk denotes an introduced species.

Trees for removal are shaded in red.

Trees in italics are hollow-bearing trees.

Tree number	Common name	Scientific name	Diameter[1]	Tree location[2]		Canopy extent (m^2)[3]	Status	Exempt clearing[4]
				Easting	*Northing*			
1	River Red Gum (remnant)	*Eucalyptus camaldulensis*	30	372538	6035377	25	Remove	
2	*River Red Gum (remnant)*	*Eucalyptus camaldulensis*	*100*	*372519*	*6035363*		*Retain*	
3	River Red Gum (remnant)	*Eucalyptus camaldulensis*	25/8	372523	6035354		Retain	
4	River Red Gum (remnant)	*Eucalyptus camaldulensis*	25/20/15	372516	6035371	30	Remove	
5	River Red Gum (remnant)	*Eucalyptus camaldulensis*	25	372503	6035365	30	Retain	
6	River Red Gum (remnant)	*Eucalyptus camaldulensis*	15	372491	6035360		Retain	
7	River Red Gum (remnant)	*Eucalyptus camaldulensis*	28	372489	6035364		Retain	
8	River Red Gum (remnant)	*Eucalyptus camaldulensis*	25/20/15	372508	6035351		Retain	
9	River Red Gum (remnant)	*Eucalyptus camaldulensis*	25	372498	6035344		Retain	
10	River Red Gum (remnant)	*Eucalyptus camaldulensis*	15	372487	6035357		Retain	
11	River Red Gum (remnant)	*Eucalyptus camaldulensis*	18/15	372479	6035359		Retain	
12	River Red Gum (remnant)	*Eucalyptus camaldulensis*	20/10	372473	6035359		Retain	
13	River Red Gum (remnant)	*Eucalyptus camaldulensis*	18	372460	6035341		Retain	
14	*River Red Gum (remnant)*	*Eucalyptus camaldulensis*	*100*	*372454*	*6035327*		*Retain*	
15	River Red Gum (remnant)	*Eucalyptus camaldulensis*	20	372455	6035346		Retain	
16	River Red Gum (remnant)	*Eucalyptus camaldulensis*	28/15/8	372459	6035349		Retain	
17	River Red Gum (remnant)	*Eucalyptus camaldulensis*	28	372452	6035358	37	Retain	
18	River Red Gum (remnant)	*Eucalyptus camaldulensis*	20/8	372467	6035353		Retain	
19	River Red Gum (remnant)	*Eucalyptus camaldulensis*	8	372466	6035353		Retain	
20	River Red Gum (remnant)	*Eucalyptus camaldulensis*	8/5	372465	6035352		Retain	
21	River Red Gum (remnant)	*Eucalyptus camaldulensis*	5	372465	6035352		Retain	
22	River Red Gum (remnant)	*Eucalyptus camaldulensis*	5	372433	6035334		Retain	
23	River Red Gum (remnant)	*Eucalyptus camaldulensis*	28/15	372434	6035353	10	Retain	

Tree number	Common name	Scientific name	Diameter[1]	Tree location[2]		Canopy extent (m^2)[3]	Status	Exempt clearing[4]
				Easting	*Northing*			
24	River Red Gum (remnant)	*Eucalyptus camaldulensis*	25/20/12	372428	6035353		Retain	
25	River Red Gum (remnant)	*Eucalyptus camaldulensis*	35/15	372417	6035353		Retain	
26	*River Red Gum (remnant)*	*Eucalyptus camaldulensis*	*65*	*372402*	*6035345*		*Retain*	
27	River Red Gum (remnant)	*Eucalyptus camaldulensis*	10/8	372391	6035355		Retain	
28	River Red Gum (remnant)	*Eucalyptus camaldulensis*	20/10	372392	6035357		Retain	
29	River Red Gum (remnant)	*Eucalyptus camaldulensis*	40/18	372388	6035357		Retain	
30	River Red Gum (remnant)	*Eucalyptus camaldulensis*	15/8	372364	6035357		Retain	
31	River Red Gum (remnant)	*Eucalyptus camaldulensis*	10	372371	6035357		Retain	
32	River Red Gum (remnant)	*Eucalyptus camaldulensis*	10	372386	6035345		Retain	
33	River Red Gum (remnant)	*Eucalyptus camaldulensis*	18	372347	6035365	100	Remove	
34	River Red Gum (remnant)	*Eucalyptus camaldulensis*	15	372352	6035354		Retain	
35	River Red Gum (remnant)	*Eucalyptus camaldulensis*	10/8	372368	6035347		Retain	
36	River Red Gum (remnant)	*Eucalyptus camaldulensis*	10	372352	6035346		Retain	
37	River Red Gum (remnant)	*Eucalyptus camaldulensis*	5	372340	6035342		Retain	
38	River Red Gum (remnant)	*Eucalyptus camaldulensis*	10/10	372335	6035342		Retain	
39	River Red Gum (remnant)	*Eucalyptus camaldulensis*	12/10	372332	6035342		Retain	
40	River Red Gum (remnant)	*Eucalyptus camaldulensis*	10	372345	6035341		Retain	
41	River Red Gum (remnant)	*Eucalyptus camaldulensis*	15	372333	6035337		Retain	
42	River Red Gum (remnant)	*Eucalyptus camaldulensis*	10	372339	6035333		Retain	
43	River Red Gum (remnant)	*Eucalyptus camaldulensis*	8	372356	6035335		Retain	
44	River Red Gum (remnant)	*Eucalyptus camaldulensis*	40/30/28/20	372318	6035347		Retain	
45	River Red Gum (remnant)	*Eucalyptus camaldulensis*	35	372319	6035341		Retain	
46	River Red Gum (remnant)	*Eucalyptus camaldulensis*	25	372311	6035362	10	Remove	
47	River Red Gum (remnant)	*Eucalyptus camaldulensis*	35	372315	6035373	15	Remove	
48	River Red Gum (remnant)	*Eucalyptus camaldulensis*	30/25/15	372271	6035497	38	Remove	
49	African Boxthorn (naturalised)	*Lycium ferocissimum**		372239	6035568	6	Remove	
50	River Red Gum (remnant)	*Eucalyptus camaldulensis*	< 15*8	372227	6035551	115	Remove	Yes

Tree number	Common name	Scientific name	Diameter[1]	Tree location[2]		Canopy extent (m^2)[3]	Status	Exempt clearing[4]
				Easting	*Northing*			
51	Weeping Myall (remnant)	*Acacia pendula*	< 20	372229	6035553		Remove	Yes
52	River Red Gum (remnant)	*Eucalyptus camaldulensis*	20/20/15	372314	6035569	21	Remove	
53	African Boxthorn (naturalised)	*Lycium ferocissimum**		372322	6035571		Remove	
54	African Boxthorn (naturalised)	*Lycium ferocissimum**		372323	6035573		Remove	
55	African Boxthorn (naturalised)	*Lycium ferocissimum**		372323	6035575		Remove	
56	African Boxthorn (naturalised)	*Lycium ferocissimum**		372322	6035576		Remove	
57	African Boxthorn (naturalised)	*Lycium ferocissimum**		372318	6035575		Remove	
58	African Boxthorn (naturalised)	*Lycium ferocissimum**		372321	6035565		Remove	
59	African Boxthorn (naturalised)	*Lycium ferocissimum**		372312	6035619		Remove	
60	African Boxthorn (naturalised)	*Lycium ferocissimum**		372306	6035623		Remove	
61	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372357	6035732		Retain	
62	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372354	6035724		Retain	
63	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372365	6035721		Retain	
64	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372367	6035717		Retain	
65	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372347	6035720		Retain	
66	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372352	6035720		Retain	
67	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372357	6035718		Retain	
68	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372358	6035715		Retain	
69	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372354	6035713		Retain	
70	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372356	6035710		Retain	
71	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372358	6035708		Retain	
72	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372346	6035713		Retain	
73	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372348	6035710		Retain	
74	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372350	6035706		Retain	
75	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372352	6035707		Retain	
76	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372353	6035705		Retain	
77	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372356	6035700		Retain	

Tree number	Common name	Scientific name	Diameter[1]	Tree location[2]		Canopy extent (m^2)[3]	Status	Exempt clearing[4]
				Easting	*Northing*			
78	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372354	6035698		Retain	
79	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372356	6035694		Retain	
80	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372359	6035697		Retain	
81	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372358	6035699		Retain	
82	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372360	6035706		Retain	
83	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372363	6035705		Retain	
84	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372362	6035702		Retain	
85	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372360	6035703		Retain	
86	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372358	6035703		Retain	
87	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372361	6035690		Retain	
88	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372457	6035698	66	Remove	Yes
89	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372457	6035713		Retain	
90	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372448	6035723		Retain	
91	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372445	6035736		Retain	
92	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372433	6035728		Retain	
93	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372437	6035714		Retain	
94	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372413	6035707		Retain	
95	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372422	6035707		Retain	
96	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372423	6035710		Retain	
97	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372425	6035707		Retain	
98	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372428	6035708		Retain	
99	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372389	6035688		Retain	
100	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372392	6035693		Retain	
101	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372394	6035699		Retain	
102	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372398	6035704		Retain	
103	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372396	6035703		Retain	
104	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372395	6035705		Retain	

Tree number	Common name	Scientific name	Diameter[1]	Tree location[2]		Canopy extent (m^2)[3]	Status	Exempt clearing[4]
				Easting	*Northing*			
105	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372396	6035708		Retain	
106	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*90*	*372376*	*6035719*		*Retain*	
107	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*120*	*372394*	*6035729*		*Retain*	
108	African Boxthorn (naturalised)	*Lycium ferocissimum**		372383	6035726		Remove	
109	African Boxthorn (naturalised)	*Lycium ferocissimum**		372388	6035717		Remove	
110	African Boxthorn (naturalised)	*Lycium ferocissimum**		372391	6035722		Remove	
111	African Boxthorn (naturalised)	*Lycium ferocissimum**		372399	6035713		Remove	
112	African Boxthorn (naturalised)	*Lycium ferocissimum**		372402	6035716		Remove	
113	African Boxthorn (naturalised)	*Lycium ferocissimum**		372403	6035713		Remove	
114	African Boxthorn (naturalised)	*Lycium ferocissimum**		372398	6035716		Remove	
115	African Boxthorn (naturalised)	*Lycium ferocissimum**		372394	6035716		Remove	
116	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372410	6035713		Retain	
117	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372405	6035711		Retain	
118	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372409	6035710		Retain	
119	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372410	6035716		Retain	
120	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372408	6035717		Retain	
121	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372414	6035722		Retain	
122	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372412	6035722		Retain	
123	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372412	6035720		Retain	
124	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372412	6035726		Retain	
125	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372414	6035727		Retain	
126	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372418	6035727		Retain	
127	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372428	6035726		Retain	
128	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372429	6035723		Retain	
129	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372423	6035729		Retain	
130	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372423	6035735		Retain	
131	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372417	6035732		Retain	

Tree number	Common name	Scientific name	Diameter[1]	Tree location[2]		Canopy extent (m^2)[3]	Status	Exempt clearing[4]
				Easting	*Northing*			
132	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372417	6035734		Retain	
133	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372419	6035737		Retain	
134	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372408	6035733		Retain	
135	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372406	6035726		Retain	
136	Grey Box (remnant)	*Eucalyptus microcarpa*	30/15	372373	6035744		Retain	
137	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372383	6035745		Retain	
138	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372378	6035746		Retain	
139	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372380	6035747		Retain	
140	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372381	6035748		Retain	
141	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372391	6035740		Retain	
142	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372388	6035747		Retain	
143	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372391	6035750		Retain	
144	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372384	6035748		Retain	
145	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372382	6035751		Retain	
146	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372386	6035750		Retain	
147	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372385	6035751		Retain	
148	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372387	6035751		Retain	
149	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372386	6035753		Retain	
150	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372384	6035756		Retain	
151	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372385	6035756		Retain	
152	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372382	6035755		Retain	
153	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372380	6035756		Retain	
154	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372382	6035758		Retain	
155	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372389	6035755		Retain	
156	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372387	6035757		Retain	
157	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372389	6035758		Retain	
158	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372392	6035755		Retain	

Tree number	Common name	Scientific name	Diameter[1]	Tree location[2]		Canopy extent (m^2)[3]	Status	Exempt clearing[4]
				Easting	*Northing*			
159	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372387	6035760		Retain	
160	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372385	6035763		Retain	
161	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372388	6035765		Retain	
162	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372383	6035764		Retain	
163	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372389	6035768		Retain	
164	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372390	6035766		Retain	
165	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372391	6035764		Retain	
166	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372399	6035746		Retain	
167	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372403	6035747		Retain	
168	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372404	6035743		Retain	
169	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372408	6035745		Retain	
170	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372410	6035745		Retain	
171	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372413	6035745		Retain	
172	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372411	6035744		Retain	
173	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372413	6035743		Retain	
174	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372417	6035744		Retain	
175	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372414	6035739		Retain	
176	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372410	6035740		Retain	
177	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*110*	*372401*	*6035769*		*Retain*	
178	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372402	6035782		Retain	
179	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372408	6035778		Retain	
180	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372409	6035780		Retain	
181	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372408	6035788		Retain	
182	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372409	6035786		Retain	
183	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372413	6035788		Retain	
184	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372413	6035787		Retain	
185	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372412	6035786		Retain	

Tree number	Common name	Scientific name	Diameter[1]	Tree location[2]		Canopy extent (m^2)[3]	Status	Exempt clearing[4]
				Easting	*Northing*			
186	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372415	6035773		Retain	
187	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372418	6035772		Retain	
188	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372421	6035770		Retain	
189	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372422	6035766		Retain	
190	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372422	6035756		Retain	
191	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372440	6035759		Retain	
192	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372430	6035823		Retain	
193	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372414	6035822	50	Remove	Yes
194	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372413	6035836		Retain	
195	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372407	6035818	185	Remove	Yes
196	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372410	6035813		Remove	Yes
197	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372408	6035809		Remove	Yes
198	Grey Box (remnant)	*Eucalyptus microcarpa*	10 (dead)	372413	6035832	5	Remove	
199	Grey Box (remnant)	*Eucalyptus microcarpa*	40	372429	6035845	58	Remove	Yes
200	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*100*	*372454*	*6035858*	*25*	*Remove*	*Yes*
201	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*70 (dead)*	*372463*	*6035852*	*25*	*Remove*	*Yes*
202	African Boxthorn (naturalised)	*Lycium ferocissimum**		372461	6035858		Remove	
203	African Boxthorn (naturalised)	*Lycium ferocissimum**		372464	6035856		Remove	
204	African Boxthorn (naturalised)	*Lycium ferocissimum**		372459	6035849		Remove	
205	African Boxthorn (naturalised)	*Lycium ferocissimum**		372456	6035848		Remove	
206	African Boxthorn (naturalised)	*Lycium ferocissimum**		372453	6035847		Remove	
207	African Boxthorn (naturalised)	*Lycium ferocissimum**		372455	6035854		Remove	
208	Grey Box (remnant)	*Eucalyptus microcarpa*	15/10/10	372490	6035847	45	Remove	
209	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*75*	*372525*	*6035831*		*Retain*	
210	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372532	6035829		Retain	
211	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372537	6035831	15	Remove	Yes
212	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372531	6035825		Retain	

Tree number	Common name	Scientific name	Diameter[1]	Tree location[2]		Canopy extent (m^2)[3]	Status	Exempt clearing[4]
				Easting	*Northing*			
213	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372537	6035817	25	Remove	Yes
214	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372541	6035824	15	Remove	Yes
215	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372543	6035827	17	Remove	Yes
216	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372539	6035836	15	Remove	Yes
217	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372548	6035832	25	Remove	Yes
218	Grey Box (remnant)	*Eucalyptus microcarpa*	18	372555	6035809	15	Remove	Yes
219	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*70*	*372570*	*6035809*	*70*	*Remove*	*Yes*
220	Grey Box (remnant)	*Eucalyptus microcarpa*	15/10/8	372583	6035794	5	Remove	Yes
221	Grey Box (remnant)	*Eucalyptus microcarpa*	15/10	372583	6035805	2	Remove	Yes
222	Grey Box (remnant)	*Eucalyptus microcarpa*	15	372589	6035801	3	Remove	Yes
223	African Boxthorn (naturalised)	*Lycium ferocissimum**		372578	6035777		Remove	
224	African Boxthorn (naturalised)	*Lycium ferocissimum**		372581	6035773		Remove	
225	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*75*	*372615*	*6035800*		*Retain*	
226	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*70*	*372625*	*6035794*		*Retain*	
227	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*120*	*372630*	*6035789*		*Retain*	
228	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372654	6035791	15	Remove	Yes
229	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372649	6035784	20	Remove	Yes
230	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372643	6035778	15	Remove	
231	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372640	6035774		Retain	
232	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372639	6035768		Retain	
233	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372634	6035768		Retain	
234	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372627	6035757		Retain	
235	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372622	6035760		Retain	
236	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372628	6035764		Retain	
237	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372631	6035772	8	Remove	
238	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372628	6035774	5	Remove	
239	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372622	6035775	4	Remove	

Tree number	Common name	Scientific name	Diameter[1]	Tree location[2]		Canopy extent (m^2)[3]	Status	Exempt clearing[4]
				Easting	*Northing*			
240	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372622	6035770	20	Remove	
241	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372632	6035779	25	Remove	
242	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372630	6035747		Retain	
243	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372621	6035738		Retain	
244	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372623	6035752		Retain	
245	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372677	6035772	25	Remove	Yes
246	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372693	6035768	15	Remove	Yes
247	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372694	6035762	18	Remove	Yes
248	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372691	6035758	55	Remove	Yes
249	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372708	6035767	15	Remove	
250	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372701	6035749	4	Remove	
251	Grey Box (remnant)	*Eucalyptus microcarpa*	65/30	372710	6035757		Retain	
252	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372713	6035708	460	Remove	Yes
253	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372717	6035706		Remove	Yes
254	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372718	6035703		Remove	Yes
255	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372717	6035699		Remove	Yes
256	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372714	6035697		Remove	Yes
257	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372691	6035694		Remove	Yes
258	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372714	6035687		Remove	Yes
259	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372705	6035687		Remove	Yes
260	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372709	6035676	12	Remove	Yes
261	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372701	6035673	5	Remove	
262	Grey Box (remnant)	*Eucalyptus microcarpa*	50	372699	6035681	125	Remove	Yes
263	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372767	6035734	18	Remove	
264	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372755	6035723	12	Remove	
265	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372749	6035722	25	Remove	Yes
266	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372750	6035718		Remove	Yes

Tree number	Common name	Scientific name	Diameter[1]	Tree location[2]		Canopy extent (m^2)[3]	Status	Exempt clearing[4]
				Easting	*Northing*			
267	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372744	6035718	15	Remove	Yes
268	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372742	6035722	15	Remove	Yes
269	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372736	6035719	25	Remove	Yes
270	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372739	6035717		Remove	Yes
271	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372730	6035710	60	Remove	Yes
272	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372733	6035713		Remove	Yes
273	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372730	6035713		Remove	Yes
274	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372727	6035712		Remove	Yes
275	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372723	6035712		Remove	Yes
276	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372721	6035714		Remove	Yes
277	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372728	6035717		Remove	Yes
278	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372727	6035720		Remove	Yes
279	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372726	6035722		Remove	Yes
280	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372714	6035718	10	Remove	
281	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372715	6035721	10	Remove	
282	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372720	6035719	5	Remove	Yes
283	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372718	6035723		Retain	
284	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372718	6035728		Retain	
285	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372712	6035724	30	Remove	Yes
286	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372711	6035727		Remove	Yes
287	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372708	6035722		Remove	Yes
288	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372709	6035736	15	Remove	Yes
289	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372715	6035739	18	Remove	Yes
290	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*125*	*372783*	*6035733*		*Retain*	
291	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372760	6035741		Retain	
292	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372762	6035737		Retain	
293	Grey Box (remnant)	*Eucalyptus microcarpa*	40	372772	6035707		Retain	

Tree number	Common name	Scientific name	Diameter[1]	Tree location[2]		Canopy extent (m^2)[3]	Status	Exempt clearing[4]
				Easting	*Northing*			
294	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*130*	*372751*	*6035742*		*Retain*	
295	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*80*	*372738*	*6035747*		*Retain*	
296	Grey Box (remnant)	*Eucalyptus microcarpa*	40	372736	6035739		Retain	
297	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372728	6035761	8	Remove	
298	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372729	6035727		Retain	
299	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372731	6035730		Retain	
300	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372730	6035735		Retain	
301	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372737	6035729		Retain	
302	Grey Box (remnant)	*Eucalyptus microcarpa*	< 30	372713	6035746		Retain	
303	River Red Gum (remnant)	*Eucalyptus camaldulensis*	< 30	372658	6035555	14	Remove	Yes
304	*Grey Box (remnant)*	*Eucalyptus microcarpa*	*80*	372478	6035861		*Retain*	
305	Grey Box (remnant)	*Eucalyptus microcarpa*	28	372716	6035773		Retain	
306	River Red Gum (remnant)	*Eucalyptus camaldulensis*	20	372403	6035773		Retain	
307	River Red Gum (remnant)	*Eucalyptus camaldulensis*	25/20	372402	6035343		Retain	
308	River Red Gum (remnant)	*Eucalyptus camaldulensis*	28	372400	6035340		Retain	
309	River Red Gum (remnant)	*Eucalyptus camaldulensis*	30/18	372391	6035331		Retain	
310	River Red Gum (remnant)	*Eucalyptus camaldulensis*	35/30	372354	6035304		Retain	
311	*River Red Gum (remnant)*	*Eucalyptus camaldulensis*	*60/35*	*372375*	*6035300*		*Retain*	
312	River Red Gum (remnant)	*Eucalyptus camaldulensis*	50/45	372368	6035297		Retain	
313	River Red Gum (remnant)	*Eucalyptus camaldulensis*	10	372355	6035296		Retain	
314	River Red Gum (remnant)	*Eucalyptus camaldulensis*	15/10/10	372359	6035296		Retain	
315	River Red Gum (remnant)	*Eucalyptus camaldulensis*	30	372361	6035316		Retain	
316	River Red Gum (remnant)	*Eucalyptus camaldulensis*	15	372359	6035314		Retain	
317	River Red Gum (remnant)	*Eucalyptus camaldulensis*	30	372370	6035306		Retain	
318	River Red Gum (remnant)	*Eucalyptus camaldulensis*	20	372366	6035307		Retain	

1. Diameter at breast height over bark in cm (at 1.30 m above ground);
2. Location data are northings and eastings of MGAz55 coordinates;
3. As determined from recent aerial imagery;
4. According to Clause 6(2) of the *Berrigan Development Control Plan 2014.*

APPENDIX D THREATENED SPECIES LIKELIHOOD OF PRESENCE

List of threatened communities, and flora and fauna species recorded by the BioNet - Atlas of NSW Wildlife and by Matters of National Environmental Significance search of a 10 km radius from the proposed development site, their status, and their likelihood of occurrence on the site (DPE 2023b; DCCEEW 2023).

Common Name	Scientific name	Conservation Status (NSW)[1]	Conservation Status (Comm)[2]	Likelihood of Occurrence[3]	Five Part Test
Vegetation community					
Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions		e	E	While this TEC is represented within the district, the proposed development is within former Grey Box and River Red Gum forest/woodland. **Likelihood: Not present**	No
Grey Box Grassy Woodlands and Derived Native Grasslands of South-eastern Australia		e	E	While most of the property is likely to have been this community, the community is now only represented by the northern patch; scattered trees and smaller patches are not representative of this community because of the extent of disturbance. **Likelihood: Not present**	No
Murray River endangered ecological community		e		The community is present within the Murray River in the study area; however, due to the minor nature of the work and its location away from the river, the community would not be impacted by the proposal.	No
Natural Grasslands of the Murray Valley Plains		e	CE	While this TEC is represented within the district, the proposed development is within former Grey Box and River Red Gum forest/woodland. **Likelihood: Not present**	No
Seasonal herbaceous wetlands (freshwater) of the temperate lowland plains		ce		While this TEC is represented within the district, the proposed development is within former Grey Box and River Red Gum forest/woodland. **Likelihood: Not present**	No
Weeping Myall Woodlands		e	E	While this TEC is represented within the district, the proposed development is within former Grey Box and River Red Gum forest/woodland. **Likelihood: Not present**	No
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Grassy Box Gum Woodland)		e	CE	While this TEC is represented within the district, the proposed development is within former Grey Box and River Red Gum forest/woodland. **Likelihood: Not present**	No
Flora					
Floating Swamp Wallaby-grass	*Amphibromus fluitans*	v	V	Wetland/riparian plant. Such habitat is not found on the proposed development site, but is found along the margins of the adjacent Murray River. No records within 10 km. **Likelihood: Highly unlikely to be present**	No
A Spear-grass	*Austrostipa wakoolica*	e	E	Grows on floodplains of the Murray River tributaries, in open woodland on grey, silty clay or sandy loam soils; habitats include the edges of a lignum swamp with box and mallee; creek banks in grey, silty clay; mallee and lignum sandy-loam flat; and open Cypress Pine forest on low sandy range. Confined to the floodplains of the Murray River tributaries of central-western and south-western NSW. Such habitat is not found on the proposed development site, but is found along the margins of the adjacent Murray River. No record of the species within 10 km. **Likelihood: Highly unlikely to be present**	No
Claypan Daisy	*Brachyscome muelleroides*	v	V	A small annual herb restricted to the mid-Murray/Murrumbidgee Rivers region in NSW and Victoria. It occurs in seasonally wet depressions, and relies on seasonal inundation. The species is now restricted to only 10 known populations. Such habitat is not found on the proposed development site, but is found along the margins of the adjacent Murray River. No records within 10 km. **Likelihood: Highly unlikely to be present**	No

Common Name	Scientific name	Conservation Status (NSW)[1]	Conservation Status (Comm)[2]	Likelihood of Occurrence[3]	Five Part Test
Yellow Gum	*Eucalyptus leucoxylon* ssp. *pruinosa*			Restricted to several small areas between Barham and Euston. This species is not known from any protected area within NSW, though some remnants occur within State Forests along the Murray River, particularly within Campbells Island and Euston SFs. It is a tree species which, in New South Wales, occurs at the bases of sandy rises and on loamy clay flats on the floodplains of the Murray River and its tributaries in the Riverina Bioregion. Site is not suitable habitat. No record of the species within 10 km. **Likelihood: Highly unlikely to be present**	No
Spiny Rice-flower	*Pimelea spinescens* ssp. *spinescens*		CE	This plant now largely occurs on basalt-derived soils west of Melbourne, across the central Victorian volcanic plains, and on alluvial soils across north west Victoria. Recent records regionally are closer to Terrick Terrick NP. Such habitat is not found on the proposed development site, but is found along the margins of the adjacent Murray River. No record of the species within 10 km. **Likelihood: Highly unlikely to be present**	No
Turnip Copperburr	*Sclerolaena napiformis*	e	E	Confined to remnant grassland habitats on clay-loam soils. Grows on level plains in tussock grassland of Austrostipa nodosa and Chloris truncata, in grey cracking clay to red-brown loamy clay. Known from only a few small populations in remnant grassland in the southern Riverina of NSW and north-central Victoria. NSW populations are confined to the area between Jerilderie and Moama on travelling stock routes and road reserves. While sections of the development site may have once been suitable habitat, it is unlikely the species would be found because of the extent of disturbance and domination of introduced species. No record of the species within 10 km. **Likelihood: Unlikely to be present**	No
Slender Darling-pea	*Swainsona murrayana*	v	E	The species has been collected from clay-based soils, ranging from grey, red and brown cracking clays to red-brown earths and loams. Found throughout NSW, it has been recorded in the Jerilderie and Deniliquin areas of the southern riverine plain, the Hay plain as far north as Willandra National Park, near Broken Hill and in various localities between Dubbo and Moree. While sections of the development site may have once been suitable habitat, it is unlikely the species would be found because of the extent of disturbance and domination of introduced species. No record of the species within 10 km. **Likelihood: Unlikely to be present**	No
Fauna					
Australian Painted Snipe	*Rostralata australis*	e	E	The Australian Painted Snipe inhabits many different types of shallow, brackish or freshwater terrestrial wetlands, especially temporary ones which have muddy margins and small, low-lying islands. Suitable wetlands usually support a mosaic of low, patchy vegetation, as well as lignum and canegrass. Such habitat is not found on the proposed development site, but is found along the margins of the adjacent Murray River. No record of the species within 10 km. **Likelihood: Highly unlikely to be present**	No
Australasian Bittern	*Botaurus poiciloptilus*	e	E	Australasian Bitterns specialise in living in dense beds of reeds and rushes, where they are surprisingly difficult to see, as they are particularly well camouflaged among reeds. Added to this, when alarmed, they stand still with neck stretched upwards and bill pointing skywards. Such habitat is not found on the proposed development site, but is found along the margins of the adjacent Murray River. No record of the species within 10 km. **Likelihood: Highly unlikely to be present**	No

Common Name	Scientific name	Conservation Status (NSW)[1]	Conservation Status (Comm)[2]	Likelihood of Occurrence[3]	Five Part Test
Barking Owl	*Ninox connivens connivens*	v		Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats due to the higher density of prey on these fertile soils. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. However, no records within 10 km. **Likelihood: May be present**	Yes
Black-chinned Honeyeater	*Melithripterus gularis gularis*	v		Occurs in intact woodlands, and adjacent agricultural land. The site (patches) and the river alignment is suitable habitat for the species, and there is connectivity to known locations. One record of the species 8 km SE of the site in 2008. **Likelihood: May be present**	Yes
Black Falcon	*Falco subniger*	v		The Black Falcon inhabits woodland, shrubland and grassland in the arid and semi-arid zones, especially wooded watercourses and agricultural land with scattered remnant trees. The Black Falcon is usually associated with streams or wetlands, visiting them in search of prey and often using standing dead trees as lookout posts. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. However, no records within 10 km. **Likelihood: May be present**	Yes
Brolga	*Grus rubicunda*	v		The Brolga inhabits large open wetlands, grassy plains, coastal mudflats and irrigated croplands and, less frequently, mangrove-studded creeks and estuaries. It is less common in arid and semi-arid regions, but will occur close to water. No suitable habitat occurs on site. Two records 10 km north of the site in 2010. **Likelihood: Unlikely to be present**	No
Brown Treecreeper (eastern ssp.)	*Climacteris picumnus victoriae*	v		Occurs in intact woodlands, and adjacent agricultural land. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. Five records within 10 km of the site up to 2008. **Likelihood: May be present**	Yes
Bush Stone-curlew	*Burhinus grallarius*	e		Range in south-eastern Australia is now largely confined to grassy woodlands and farmland. Likes to roost and nest in grassy woodlands of Buloke, gum or box with low, sparse grassy or herb understorey. Branches on the ground are essential for the bird's camouflage, and it is unlikely to attempt nesting without it. No suitable habitat occurs on site. No records within 10 km. **Likelihood: Unlikely to be present**	No
Cattle Egret	*Ardea ibis*		Migratory Wetland Species	The Cattle Egret is found in grasslands, woodlands and wetlands, and is not common in arid areas. It also uses pastures and croplands, especially where drainage is poor. Will also forage at garbage dumps, and is often seen with cattle and other stock. The species is known to forage in pastures and cropping areas adjacent to wetlands. No suitable habitat occurs on site. Has not been recorded within 10 km of the site. **Likelihood: Unlikely to be present**	No
Curlew Sandpiper	*Calidris ferruginea*	E	CE	The Curlew Sandpiper is a common visitor during the Australian summer, congregating in large flocks, sometimes comprising thousands of birds, at sheltered intertidal mudflats and also at the muddy margins of terrestrial wetlands. No suitable habitat occurs on site. Has not been recorded within 20 km of the site. **Likelihood: Highly unlikely to be present**	No
Diamond Firetail	*Stagonopleura guttata*	v		Occurs in woodlands, and adjacent agricultural land. The site (patches) and the river alignment is primary habitat for the species. However, no records within 10 km. **Likelihood: Unlikely to be present**	No

Common Name	Scientific name	Conservation Status (NSW)[1]	Conservation Status (Comm)[2]	Likelihood of Occurrence[3]	Five Part Test
Dusky Woodswallow	*Artamus cyanopterus cyanopterus*	v		The species primarily inhabits dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. One record of the species along the adjacent river corridor in 2003. **Likelihood: May be present**	Yes
Eastern Curlew	*Numenius madagascariensis*	v	Migratory Wetland Species	The Eastern Curlew is widespread in coastal regions in the north-east and south of Australia, including Tasmania, and scattered in other coastal areas, and is found on intertidal mudflats and sand flats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons. Site is not suitable habitat, and no records within 10 km. **Likelihood: Highly unlikely to be present**	No
Flame Robin	*Petroica phoenicea*	v		Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. The ground layer of the breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense. The Flame Robin is endemic to south eastern Australia, and ranges from near the Queensland border to south east South Australia and also in Tasmania. In NSW, it breeds in upland areas and in winter, many birds move to the inland slopes and plains. . The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. One record of the species close to Barooga **Likelihood: May be present**	Yes
Flat-headed Galaxias	*Galaxias rostratus*	ce	CE	The species can be found in still or slow flowing water on the margins of lakes, billabongs and streams. The Flat-headed Galaxias usually swims mid-water over rock and sandy substrates. This fish is often found close to, or amongst, aquatic plants. Historically this species was common to the southern regions of the Murray-Darling Basin, including the Murray, Loddon, Murrumbidgee, Goulburn, Ovens, Mitta Mitta and the Lachlan Rivers. The development will not impact the aquatic environment in the Murray River, and the species is thought to be extinct in the lower Murray River and unlikely to occur in the study area. **Likelihood: Not present**	No
Fork-tailed Swift	*Apus pacificus*		Migratory Marine Species	This non-breeding migrant visitor to Australia mostly occurs over inland plains, but sometimes above foothills or in coastal areas. Site does contain some suitable habitat, however there is a lack of connectivity to known locations. Not recorded within 10 km. **Likelihood: Unlikely to be present**	No
Grey-crowned Babbler	*Pomatostomus temporalis temporalis*	e		Prefers extensive intact woodlands with significant shrub and litter layers. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. Four records of the species along the adjacent river corridor up to 2018. **Likelihood: Present**	Yes
Grey-headed Flying-fox	*Pteropus poliocephalus*	v	V	Australia's only endemic flying-fox and occurs in a coastal belt from south-eastern Queensland to Melbourne, Victoria. It is a canopy-feeding frugivore and nectivore, which utilises vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca swamps and Banksia woodlands. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. However, no records within 10 km. **Likelihood: Unlikely to be present**	No

Common Name	Scientific name	Conservation Status (NSW)[1]	Conservation Status (Comm)[2]	Likelihood of Occurrence[3]	Five Part Test
Hooded Robin	*Melanodryas cucullata cucullata*	v		Occurs in intact woodlands, and adjacent agricultural land. They occupy a wide range of Eucalypt woodlands, Acacia shrublands and open forests. In temperate woodlands, the species favours open areas adjoining large woodland blocks, with areas of dead timber and sparse shrub cover. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. However, no records within 10 km. **Likelihood: Present**	Yes
Koala	*Phascolarctus cinereus*	v	V	Inhabit eucalypt woodlands and forests. Spend most of their time in trees, but will descend and traverse open ground to move between trees. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. Numerous records of the species along the adjacent river corridor up to 2018. **Likelihood: May be present**	Yes
Little Eagle	*Hieraaetus morphinoides*	v		The species occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. It nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. However, no records within 10 km. **Likelihood: Unlikely to be present**	No
Macquarie Perch	*Macquaria australasica*	e	E	The species occurs naturally north of the Great Dividing Range. It is naturally a riverine fish, preferring deep holes, in cool, upper reaches of Victorian tributaries of the Murray-Darling system. It does well in impoundments with suitable spawning streams, and its abundance and distribution reduced by construction of dams on streams, changes to river flow and temperature regimes, siltation of spawning streams and impact of introduced species including Trout and Redfin. The development will not impact the aquatic environment in the Murray River, and habitat mapping for the species does not identify the Murray River in the study area as likely habitat. **Likelihood: Not present**	No
Magpie Goose	*Anseranas semipalmata*	v		The Magpie Goose is still relatively common in the Australian northern tropics, but had disappeared from south-east Australia by 1920 due to drainage and overgrazing of reed swamps used for breeding. Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. No suitable habitat occurs on site. One record for within 5 km of Finley. **Likelihood: Highly unlikely to be present**	No
Murray Cod	*Maccullochella peelii*		V	The Murray Cod is the largest freshwater fish found in Australia. It is a long lived predator species that is highly territorial and aggressive. It occurs naturally in the waterways of the Murray–Darling Basin in a wide range of warm water habitats that range from clear, rocky streams to slow flowing turbid rivers and billabongs. While the adjacent Murray River contains suitable habitat and the species will be present, the development will not impact the aquatic environment in the Murray River. **Likelihood: Present**	No
Murray Hardyhead	*Craterocephalus fluviatilis*	ce	E	Murray Hardyhead is a species of small freshwater fish, native to inland parts of south-eastern Australia. They were once widespread and abundant in the Murray and Murrumbidgee river systems in southern NSW and northern Victoria; however, they have suffered a serious population decline, and now seem to be limited to a few sites, mainly in northern Victoria. The development will not impact the aquatic environment in the Murray River, and habitat mapping for the species does not identify the Murray River in the study area as likely habitat. **Likelihood: Not present**	No

Common Name	Scientific name	Conservation Status (NSW)[1]	Conservation Status (Comm)[2]	Likelihood of Occurrence[3]	Five Part Test
Painted Honeyeater	*Grantiella picta*	v	V	The greatest concentrations of the bird and almost all breeding occurs on the inland slopes of the Great Dividing Range in NSW, Victoria and southern Queensland. Inhabits Boree/ Weeping Myall, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests, particularly those infested with mistletoe. The site (patches) and the river alignment is primary habitat for the species. However, no records within 10 km. **Likelihood: Unlikely to be present**	No
Pink-tailed Worm-lizard	*Aprasia parapulchella*	v	V	Occurs in intact high quality and undisturbed grassy woodlands and grasslands. While sections of the property may have once been suitable habitat, it is unlikely the species would be found in the proposed development area because of the extent of modification and unsuitable habitat. No record of the species within 20 km. **Likelihood: Highly unlikely to be present**	No
Plains-wanderer	*Pedionomus torquatus*	e	CE	Occurs in extensive quality riparian grasslands and plains woodlands, and adjacent agricultural land. Site is not suitable habitat. No record of the species within 20 km. **Likelihood: Highly unlikely to be present**	No
Powerful Owl	*Ninox strenua*	v,		Occurs in extensive forests and woodlands. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. However, no records within 10 km. **Likelihood: Unlikely to be present**	No
Regent Honeyeater	*Anthochaera phrygia*	ce	CE	Occurs in woodlands, and adjacent agricultural land. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. However, no records within 10 km. **Likelihood: Unlikely to be present**	No
Satin Flycatcher	*Myiagra cyanolecua*		Migratory Terrestrial Species	The Satin Flycatcher is found along the east coast of Australia from far northern Queensland to Tasmania, including south-eastern South Australia. It is not a commonly seen species, especially in the far south of its range, where it is a summer breeding migrant. The species is found in tall forests, preferring wetter habitats such as heavily forested gullies, but not rainforests. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. One record of the species close to Barooga. **Likelihood: May be present**	Yes
Scarlet Robin	*Petroica boodang*	v		In NSW, it occurs from the coast to the inland slopes. After breeding, some Scarlet Robins disperse to the lower valleys and plains of the tablelands and slopes. Some birds may appear as far west as the eastern edges of the inland plains in autumn and winter. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs in both mature and regrowth vegetation. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. However, no records within 10 km. **Likelihood: Unlikely to be present**	No
Silver Perch	*Bidyanus bidyanus*	v	CE	Silver perch are found in similar habitats to Murray Cod and Golden Perch, i.e. lowland, turbid and slow-flowing rivers. Formerly widespread over much of the Murray-Darling Basin excluding the most upper reaches, Silver perch has declined over most of its range. While the adjacent Murray River contains suitable habitat and the species will be present, the development will not impact the aquatic environment in the Murray River. **Likelihood: Present**	No

Common Name	Scientific name	Conservation Status (NSW)[1]	Conservation Status (Comm)[2]	Likelihood of Occurrence[3]	Five Part Test
Sloane's Froglet	*Crinia sloanei*	v		Sloane's Froglet has been recorded from widely scattered sites in the floodplains of the Murray-Darling Basin, with the majority of records in the Darling Riverine Plains, NSW South Western Slopes and Riverina bioregions in New South Wales. It has not been recorded recently in the northern part of its range and has only been recorded infrequently in the southern part of its range in NSW. At a number of sites where records are verified by museum specimens, the species has not been subsequently detected during more recent frog surveys in the vicinity (e.g. Holbrook, Nyngan, Wagga Wagga and Tocumwal). It is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats. The site (patches) and the river alignment will contain some primary habitat for the species. However, no records within 10 km. **Likelihood: Unlikely to be present**	No
Smoky Mouse	*Pseudomys fumeus*	e	E	The Smoky Mouse occurs in a variety of vegetation communities, ranging from coastal heath to dry ridgeline forest, sub-alpine heath and, occasionally, wetter gullies. Except for the wetter sites, a consistent feature of Smoky Mouse habitats is the diversity of heath and bush-pea species present, combined with potential shelter sites in the form of woody debris or rocks. Site is not suitable habitat, and the species is not recorded within 10 km. **Likelihood: Highly unlikely to be present**	No
South-eastern Long-eared Bat	*Nyctophilus corbeni*	v	V	Occurs in intact Buloke, mallee, Cypress-pine, ironbark and box woodlands and forests, and adjacent agricultural land. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. No records within 10 km. **Likelihood: May be present**	Yes
Southern Bell Frog	*Litoria raniformis*	e	V	In NSW the species was once distributed along the Murray and Murrumbidgee Rivers and their tributaries, the southern slopes of the Monaro district and the central southern tablelands as far north as Tarana, near Bathurst. Currently, the species is known to exist only in isolated populations in the Coleambally Irrigation Area, the Lowbidgee floodplain and around Lake Victoria. **Likelihood: Unlikely to be present**	No
Southern Myotis	*Myotis macropus*	v		Preferred habitat is riparian. Roosts in caves, mines, tree hollows, aqueduct tunnels and under bridges and in dense vegetation in the vicinity of bodies of slow-flowing or still water (including estuaries). A recent study of the roosting ecology of this species at three localities in Victoria found it roosted exclusively in tree hollows. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. No records within 10 km. **Likelihood: May be present**	Yes
Spotted Harrier	*Circus assimilis*	v		Found in mainland Australia and Indonesia. It is widespread but sparsely distributed. Found in open wooded country in tropical and temperate Australia, particularly in arid and semi-arid areas. The site is not suitable habitat, and no records within 10 km. **Likelihood: Unlikely to be present**	No
Striped Legless Lizard	*Delma impar*	v	V	Occurs in intact high quality grassy woodlands and grasslands. While sections of the property may have once been suitable habitat, it is unlikely the species would be found in the proposed development area because of the extent of modification and unsuitable habitat. No record of the species within 20 km. **Likelihood: Highly unlikely to be present**	No

Common Name	Scientific name	Conservation Status (NSW)[1]	Conservation Status (Comm)[2]	Likelihood of Occurrence[3]	Five Part Test
Squirrel Glider	*Petaurus norfolcensis*	v		Prefers extensive intact woodlands with significant shrub and litter layers in blocks or along roadsides. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. Four records of the species along the adjacent river corridor up to 2018. **Likelihood: May be present**	Yes
Superb Parrot	*Polytelis swainsonii*	v	V	Occurs in riparian woodlands and forest, and adjacent woodlands and agricultural land. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. Two records of the species along the adjacent river corridor up to 2008. **Likelihood: May be present**	Yes
Swift Parrot	*Lathamus discolor*	e	CE	Occurs in extensive riparian forests and woodlands, and adjacent agricultural land. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. However, no records within 10 km. **Likelihood: Unlikely to be present**	No
Trout Cod	*Maccullochella macquariensis*	e	E	Trout Cod are found in similar habitats to Murray Cod and Golden Perch, i.e. lowland, turbid and slow-flowing rivers. Formerly widespread over much of the Murray-Darling Basin excluding the most upper reaches, the species has declined over most of its range. While the adjacent Murray River contains suitable habitat, there are no records for the species within 20km, and the development will not impact the aquatic environment in the Murray River. **Likelihood: Unlikely to be present**	No
Varied Sittella	*Daphoenositta chrysoptera*	v		The Varied Sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands. It inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. The site (patches) and the river alignment is primary habitat for the species, and there is connectivity to known locations. Two records of the species along the adjacent river corridor up to 2008. **Likelihood: May be present**	Yes
White-bellied Sea-eagle	*Haliaeetus leucogaster*	v		Occurs in extensive quality wetlands and riparian woodlands, and adjacent agricultural land. The site (patches) and the river alignment is primary habitat for the species s, and there is connectivity to known locations. Two records of the species along the adjacent river corridor up to 2018. **Likelihood: May be present**	Yes
White-fronted Chat	*Epthianura albifrons*	v		In NSW, the species occurs mostly in the southern half of the state, in damp open habitats along the coast, and near waterways in the western part of the state. The site is not suitable habitat, and there is no connectivity to the location of the record in 1980 – 10 km NW of the site. **Likelihood: Highly unlikely be present**	No
White-throated Needletail	*Hirundapus caudacutus*		Migratory Terrestrial Species	Often occur in large numbers over eastern and northern Australia. Aerial birds and for a time it was commonly believed that they did not land while in Australia. Feeds on flying insects, such as termites, ants, beetles and flies, often over water. The site (patches) and the river alignment is suitable habitat for the species; however, no record of species within 20 km of site. **Likelihood: Unlikely to be present**	No

1. x = presumed extinct in NSW; e = endangered in NSW; v = vulnerable in NSW; ce = critically endangered in NSW (from DPE 2023b).
2. V = vulnerable nationally; E = endangered nationally; CE = critically endangered nationally (DCCEEW 2023).

APPENDIX E BIODIVERSITY OFFSET SCHEME ENTRY THRESHOLD (BOSET) TOOL REPORT DATED 8TH NOVEMBER 2023 (ASSUMING OPTION 2)

Department of Planning and Environment

Biodiversity Values Map and Threshold Report

This report is generated using the Biodiversity Values Map and Threshold (BMAT) tool. The BMAT tool is used by proponents to supply evidence to a consent authority to determine whether or not a Biodiversity Development Assessment Report (BDAR) is required under the Biodiversity Conservation Regulation 2017 (Cl. 7.2 & 7.3).

The report provides results for the proposed development footprint area identified by the user and displayed within the blue boundary on the map.

There are two pathways for determining whether or not a BDAR is required for the proposed development:

1. Is there Biodiversity Values Mapping?
2. Is the 'clearing of native vegetation area threshold' exceeded?

Biodiversity Values Map and Threshold Report

Date of Report Generation		08/11/2023 11:51 AM
Biodiversity Values (BV) Map Threshold - Results Summary		
1	**Does the development Footprint intersect with BV mapping?**	no
2	**Was ALL of the BV Mapping within the development footprinted added in the last 90 days?** (dark purple mapping only, no light purple mapping present)	no
3	**Date of expiry of dark purple 90 day mapping***	N/A
4	**Is the Biodiversity Values Map threshold exceeded?**	no
Area Clearing Threshold - Results Summary		
5	**Size of the development or clearing footprint**	2,352.0 sqm
6	**Native Vegetation Area Clearing Estimate (NVACE)**	2,352.0 sqm
7	**Method for determining Minimum Lot Size**	LEP
8	**Minimum Lot Size** (10,000sqm = 1ha)	600 sqm
9	**Area Clearing Threshold** (10,000sqm = 1ha)	2,500 sqm
10	**Is the Area Clearing Threshold exceeded?**	no

Is the proposed development assessed above the Biodiversity Offsets Schema (BOS) threshold? Exceeding the BOS threshold will require completion of a Biodiversity Development Assessment Report (BDAR). More details provided on page 2.	**no**

What do I do with this report?

• If the result above indicates a BDAR is required, a Biodiversity Development Assessment Report **may be required** with your development application. Go to https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor to access a list of accredited assessors. An accredited assessor can apply the Biodiversity Assessment Method and prepare a **BDAR**.

• If the result above indicates a BDAR is not required, you have not exceeded the BOS threshold. This report can be provided to Council to support your development application. You may still require a permit from your local council. Review the development control plan and consult with council. You may still be required to assess whether the development is '"likely to significantly affect threatened species" as determined under the test in Section 7.3 of the Biodiversity Conservation Act 2016. You may also be required to review the area where no vegetation mapping is available.

• If all Biodiversity Values mapping within your development footprint are less than 90 days old, i.e. mapping is displayed as dark purple on the map, a BDAR may not be required if your Development Application is submitted within that 90 day period. *Any BV mapping less than 90 days old on this report will expire on the date provided in Line item 3 above.

For more detailed advice about actions required, refer to the **Interpreting the evaluation report** section of the Biodiversity Values Map Threshold Tool User Guide.

Review Options:

• If you believe the Biodiversity Values mapping is incorrect please refer to our BV Map Review webpage for further information.

• If you disagree with the NVACE result for Line Item 6 above (i.e. area of Native Vegetation within the Development footprint proposed to be cleared) you can undertake a self-assessment. For more information about this refer to the **Guide for reviewing BMAT Tool area clearing threshold results**.

Acknowledgement

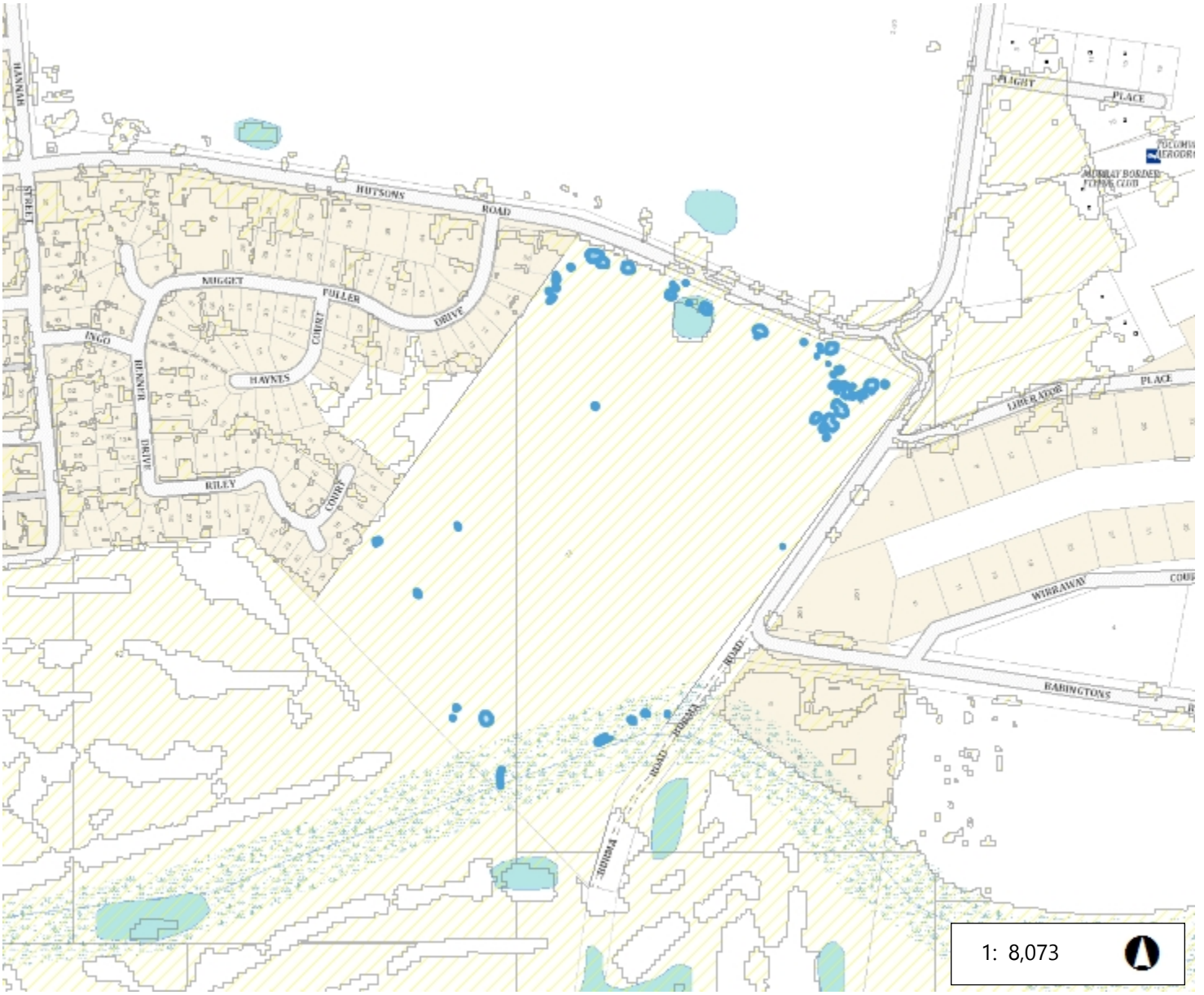
I, as the applicant for this development, submit that I have correctly depicted the area that will be impacted or likely to be impacted as a result of the proposed development.

Signature: _____ Date:_____

(Typing your name in the signature field will be considered as your signature for the purposes of this form)

08/11/2023 11:51 AM

Biodiversity Values Map



410.1 0 205.05 410.1 Metres

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Legend

- Biodiversity Values that have been mapped for more than 90 days
- Biodiversity Values added within last 90 days
- Native Vegetation Area Clearing Estimate (NVACE)
- Development area selected by proponent

08/11/2023 11:51 AM

The results provided in this tool are generated using the best available mapping and knowledge of species habitat requirements.

This map is valid as at the date the report was generated. Checking the Biodiversity Values Map viewer for mapping updates is recommended.