

BATHURST HOSPITAL REDEVELOPMENT

Biodiversity Development Assessment Report

FINAL

January 2025

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Prepared by Umwelt (Australia) Pty Limited on behalf of Health Infrastructure

Project Director: Adam Cavallaro Project Manager: Jessie Bear Report No. Date:

R02 January 2025





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



Acknowledgement of Country

Umwelt would like to acknowledge the traditional custodians of the country on which we work and pay respect to their cultural heritage, beliefs, and continuing relationship with the land. We pay our respect to the Elders – past, present, and future.

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Rev No.	Revi	ewer	Approved for Issue		
	Name	Date	Name	Date	
V1	Adam Cavallaro	23/01/2025	Adam Cavallaro	23/01/2025	



Executive Summary

This Biodiversity Development Assessment Report (BDAR) has been prepared by Umwelt on behalf of Health Infrastructure for the redevelopment of the Bathurst Hospital at 361-365 Howick Street, Bathurst.

This BDAR accompanies a State Significant Development (SSD 64733959) Application that seeks approval for the construction and operation of a new-build expansion, refurbishment and repurposing works to the existing Bathurst Health Service main hospital building (the Project).

The BDAR has been prepared to assess the potential biodiversity impacts of the proposed Project in accordance with the Biodiversity Assessment Method (BAM 2020). Due to the small area of impact on native vegetation and the presences of landscape gardens, the BDAR has been developed using the two following Streamlined Modules:

- Streamlined Assessment Module Small area
- Streamlined Assessment Module Planted native vegetation module

The Subject Land is approximately 4.2 ha in size and consists of an operational hospital with buildings of varying ages, ranging from 1880 to 2012. The Heritage Building, built in 1880, is a state significant historic building located on the south corner of the site. The Development Footprint refers to all land that will be cleared/disturbed for the Project including the footprint of new buildings, driveways, roads and carparks this is approximately 1.19 ha which in vegetation, and existing buildings and hardstand.

Surveys of the Subject Land identified the following Plant Community Types (PCTs) and other non-native vegetation:

- PCT 3376 Southern Tablelands Grassy Box Woodland 0.21 ha
- Landscaped Gardens Native 0.27 ha
- Landscaped Gardens Non-Native 0.2 ha

The completion of surveys and assessments has identified habitat for the following threatened entities listed under the NSW *Biodiversity Conservation Act 2016* (BC Act)):

 White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South-Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions critically endangered ecological community.

No threatened species or their habitat was recorded during surveys.

No Biodiversity credits were generated due to the degraded nature of the native vegetation and the vegetation integrity score <15.



Declarations

i. Certification under clause 6.15 Biodiversity Conservation Act 2016

I certify that this report has been prepared by Umwelt (Australia) Pty Ltd and to the best of my knowledge is based on the requirements of and information under the Biodiversity Assessment Method (2020) and clause 6.15 of the *Biodiversity Conservation Act 2016*.

Name:	Adam Cavallaro
Signature:	lall
Date:	25/01/2025
BAM Assessor Accreditation No:	BAAS18056

ii. Conflict of Interest

The undersigned declare that I have considered the circumstances and there is no actual, perceived or potential conflict of interest.

This declaration has been made in the interests of full disclosure to the decision-maker. Full disclosure has also been provided to the client.

Name:	Adam Cavallaro
Signature:	1 all
Date:	25/01/2025
BAM Assessor Accreditation No:	BAAS18056



Project Team

Name	Assessor ID	Role	Experience
Adam Cavallaro Principal Ecologist	BAAS18056	Preparation and review of BDAR, review of BAM calculator and technical direction	Adam has over 20 years' experience in the environmental industry completing biodiversity impact assessments under NSW and Commonwealth legislation. He is an accredited assessor under the Biodiversity Assessment Method (BAM) and is experienced in ecological restoration planning, threatened species and vegetation integrity plot surveys. Adam completed full floristic plots and transects, rapid vegetation assessment and vegetation mapping as part of this project.
Jessie Bear Senior Ecologist	BAAS23036	BDAR preparation	Jessie is an ecological consultant and project manager with eight years' experience delivering ecological assessments. She is an accredited assessor under the BAM and has been involved with and managed a range of projects, from local developments for private clients and Local Governments to collaboratively managing, planning and delivering ecological assessments for State Significant Development and State Significant Infrastructure projects. Jessie produced a majority of this BDAR.
Rachael Donelly Ecologist	N/A	BDAR preparation	Rachael has 2 years' experience assisting in the delivery of projects across a range of different sectors including renewable energy, infrastructure, and mining. Her experience includes impact assessments to support environmental approvals for significant infrastructure, state significant development, and REFs, as well as post-approval monitoring, rehabilitation, and restoration. Rachael assisted in the writing of this BDAR.



Abbreviations

BAM	Biodiversity Assessment Method
BAM-C	Biodiversity Assessment Method Calculator
BC Act	Biodiversity Conservation Act 2016 (NSW)
BC Regulation	Biodiversity Conservation Regulation 2017 (NSW)
BCS	Biodiversity Conservation and Science Directorate – part of NSW Department of Planning, Industry and Environment
BDAR	Biodiversity Development Assessment Report
BOAMS	Biodiversity Offsets and Agreement Management System
BOM	Bureau of Meteorology
BOS	Biodiversity Offsets Scheme
CEEC	Critically endangered ecological community
DAWE	Former Commonwealth Department of Agriculture, Water and the Environment
DBH	diameter at breast height over bark
Development Footprint	The area of land that is directly impacted by the Project.
Cth DCCEEW	Commonwealth Department of Climate Change, Energy and Environment and Water
NSW DCCEEW	NSW Department of Climate Change, Energy and Environment and Water
DNG	Derived native grasslands
DPE	NSW Department of Planning and Environment
Ecosystem credit	A measurement of the value of EECs, CEECs and threatened species habitat for species that can be reliably predicted to occur within PCT. Ecosystem credits measure the loss in biodiversity values at a development site and the gain in biodiversity values at an offset site.
EEC	Endangered ecological community
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
GDE	Groundwater dependent ecosystem
GIS	Geographical information system
ha	Hectare(s)
нтw	High threat weed
IBRA	Interim Biogeographic Regionalisation for Australia
LGA	Local government area
LLS Act	Local Land Services Act 2013 (NSW)
MNES	matters of national environmental significance
NPW Act	National Parks and Wildlife Act 1974 (NSW)
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
РСТ	Plant community type
PMST	Protected Matters Search Tool
SAII	Serious and irreversible impact



SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
Species credit	The class of biodiversity credits created or required for the impact on threatened species that cannot be reliably predicted to use an area of land based on habitat surrogates.
SSD	State significant development
Strahler Stream Order	Classification system that gives a waterway an 'order' according to the number of tributaries associated with it.
Subject Land	The land subject to the development application (synonymous with Lot Boundary).
TBDC	Threatened Biodiversity Data Collection
TEC	threatened ecological community
VEC	Vulnerable ecological community
VI	Vegetation integrity
VIS	Vegetation information system



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- Appendix F Biodiversity Credit Report
- Appendix G Consultant Declaration



1.0 Introduction

1.1 Background Information

This Biodiversity Development Assessment Report (BDAR) has been prepared by Umwelt on behalf of Health Infrastructure for the redevelopment of the Bathurst Hospital at 361-365 Howick Street, Bathurst.

The site is located at 361-365 Howick Street, Bathurst, in the Bathurst Local Government Area. It is occupied by Bathurst Health Service, a Level C referral facility in the Western NSW Local Health District.

This report accompanies a State Significant Development 64733959 (SSD- 64733959) Application that seeks approval for the construction and operation of a new-build expansion, refurbishment and repurposing works to the existing Bathurst Health Service main hospital building (the Project). Proposed works will include:

- A new-build, three-storey health services building expansion (including 1 plant level) to include overnight inpatient accommodation and non-admitted care services and a new hospital front-of house and entrance.
- A new-build, two-storey expansion to the Emergency department and Operating Theatres (plus 1 plant level).
- A new-build, single-storey expansion to the existing Cancer Service building Daffodil Cottage.
- Refurbishment and repurposing to areas of the existing hospital.
- Site establishment, demolition of some existing structure, cut and fill and remediation works.
- Vehicular circulation and car parking improvements.
- Tree removal.
- Landscape works.
- Alteration and amplification of existing hospital plant and services infrastructure.
- For a detailed project description, refer to the Environmental Impact Statement prepared by Ethos Urban.

Figure 1.1 provides an overview of the Subject Land, Development Footprint and surrounding landscape attributes.







1.2 General Description of the Subject Land

For the purposes of this report, the Subject Land refers to the entire lot located at 361-365 Howick Street, Bathurst, NSW, while the Development Footprint refers to all land that will be cleared/disturbed for the Project including the footprint of new buildings, driveways, roads and carparks (Refer to **Figure 1.1**) this is approximately 1.19 ha which in vegetation, and existing buildings and hardstand. While the characteristics of the wider Subject Land are discussed herein, impacts will be limited to the Development Footprint only. There is no proposal to impact the remaining areas of the Subject Land. The detailed architectural plan drawings for the Project are provided in **Appendix A**.

The Subject Land is approximately 4.2 ha in size and consists of an operational hospital with buildings of varying ages, ranging from 1880 to 2012. The Heritage Building, built in 1880, is a state significant historic building located on the south corner of the site.

The vegetation within the Subject Land comprises a range of maintained parklands, mixed native and exotic landscaping and established gardens. The highest point of the site is the southern boundary near the main vehicle entrance. The lowest point of the site is in the north-east.

The Subject Land is located in the township of Bathurst, NSW, and bound on all sides by public roads. The local landscape is characterised by urban development, sporting facilities, parklands and industrial complexes. The Macquarie River lies approximately 500 m to the east of the Subject Land and flows northwest. On the eastern side of the river the floodplain is extensively cleared and cropped, as is the landscape beyond the township.

The landscape information pertaining to the Subject Land is detailed in Section 3.0.

1.3 Purpose and Scope of This Report

The key objective of this BDAR is to meet the requirements of the Biodiversity Assessment Method (BAM) (DPIE, 2020a), and to address the biodiversity matters raised in the Industry specific Secretary's environmental assessment requirements (SEARs) (Refer to **Table 1.1**) for the SSD. Additional matters raised by the Department of Planning and Environment (DPE) did not include any matters relating to biodiversity.

Item	Secretary's Environmental Assessment Requirements	Relevant Section of the Report			
SEARs					
11. Biodiversity	Assess any biodiversity impacts associated with the development in accordance with the <i>Biodiversity</i> <i>Conservation Act 2016</i> and the Biodiversity Assessment Method 2020, including the preparation of a Biodiversity Development Assessment Report (BDAR), unless a waiver is granted, or the development is on biodiversity certified land.	This report constitutes the BDAR, a BDAR waiver was not applied for.			
	If the development is on biodiversity certified land, provide information to identify the site (using associated mapping) and demonstrate the Project is consistent with the relevant biodiversity measure conferred by the biodiversity certification.	The Project will take place on land zoned SP2 Hospital under the Bathurst Regional Local Environmental Plan 2014.			

Table 1.1 SEARs Relevant to the Biodiversity Assessment



1.4 Biodiversity Offsets Scheme Entry

The biodiversity offset scheme (BOS) applies to all SSD and state significant infrastructure (SSI) projects and the SEARS require a BDAR to be prepared for the project in accordance with Section 7.9 of the BC Act. The Project will require a BDAR to be prepared to assess biodiversity values within the Subject Land.

The Subject Land does not include any mapped biodiversity values areas on the Biodiversity Values Map.

1.4.1 Biodiversity Reporting Pathway

This BDAR was prepared in accordance with the BAM 2020, following the specific requirements for the following two assessment modules:

- Streamlined Assessment Module Small area (Appendix E of the BAM): This module was used based on meeting the criteria for a small area development that is outlined in Table 12 of the BAM. Criteria met:
 - As the land zoning has no minimum lot size, the size of the lot (4.2 ha) was used to determine the category of minimum lot size <40 ha but no less than 1 ha
 - \circ maximum clearing limit for this category is ≤2 ha. Clearing proposed for the Project is <2 ha.
- Streamlined Assessment Module Planted native vegetation module (Appendix D of the BAM): Parts of the vegetation within the Subject Land qualified for the planted native vegetation module at Section 5 of Part D.1 Decision-making key in Appendix D of the BAM, whereby the vegetation constitutes landscaping and gardens. As such, Chapters 3 and 4 of the BAM do not apply. The assessment must comply with Part D.2 of Appendix D of the BAM by assessing the suitability of the planted native vegetation for use by threatened species and apply Section 8.4 of the BAM should there be any evidence that threatened species are found to be utilising the vegetation.

1.5 Information Sources

The following key resources, policies and documents were used during the preparation of this BDAR:

- Biodiversity Assessment Method 2020 (DPIE 2020a).
- Biodiversity Assessment Method Operational Manual Stage 1 (NSW DPIE 2022).
- Biodiversity Assessment Method Operational Manual Stage 2 (NSW DPIE 2023).
- Biodiversity Assessment Method (BAM) Calculator User Guide (NSW OEH 2017).
- NSW BioNet including the BioNet Atlas, BioNet Vegetation Database and Threatened Species Data Collection (NSW DCCEEW 2024b).
- Biodiversity Assessment Method Calculator.
- Guidance for the Biodiversity Development Assessment Report Template (including the template) (NSW DPE 2022b).



- Surveying Threatened Plants and Their Habitats: NSW survey guide for the Biodiversity Assessment Method (DPIE 2020c).
- Flora Species with Specific Survey Requirements List Version 1 (BAM-C).
- Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (Working Draft) (NSW DEC 2004).

Other information sources are relied upon are referenced in the text and are listed in the References Section of this Report.



2.0 Methods

2.1 Site Context Methods

2.1.1 Landscape Features

As detailed in Section 3 of the BAM (DPIE 2020a), a landscape assessment for the Subject Land is required, which was initially conducted as a desktop assessment and confirmed during the field surveys (where practicable). The following landscape and site context features in were identified for the Assessment Area in accordance with Section 3 of the BAM (DPIE, 2020a) from analysis and reference to available spatial information:

Table 2.1 Landscape Features Assessed and Data Sources
--

Landscape and Site Context Features	Data Sources	
IBRA Bioregions and Subregions	NSW Interim Biogeographic Regions of Australia Version	
	7 (Regions and Subregions)	
NSW (Mitchell) Landscape	NSW (Mitchell) Landscapes Version 3.1	
Native Vegetation extent within designated assessment	Aerial imagery, State Vegetation Type Map (SVTM)	
buffer area (1,500 m)		
Patch Size	Aerial imagery	
Cleared Areas	Aerial imagery	
Rivers and Streams (Classified according to stream	NSW Hydrography	
order)		
Estuaries and wetlands	Directory of important wetlands in Australia	
Connectivity Features	Aerial imagery	
Karst, caves, cliffs, rocks, and other geological features	Aerial imagery and topographic maps	
of significance		
Areas of Outstanding biodiversity value	Areas of Outstanding Biodiversity Value Register	

An assessment area buffer of 1,500 m was utilised in accordance with the requirements for site-based developments, with the buffer generated from areas of vegetation clearing assessed for the Subject Land.



2.2 Native Vegetation, Threatened Ecological Communities and Vegetation Integrity Methods

Native vegetation is classified by the assignment of Plant Community Types (PCTs) and threatened ecological communities (TECs). The use of the NSW vegetation classification system allows for the interrogation of floristic data to assign a PCT based on qualitative and quantitative data collected during field surveys. The assign of PCT and associated TECs is then compared to benchmark data for the PCT to determine a vegetation integrity score which is used to determine the impacts on biodiversity values.

2.2.1 Existing Information

The following existing information was reviewed to inform the identification of Plant Community Types (PCTs) (refer to **Section 4.2**) and Threatened Ecological Communities (TECs) (refer to **Section 4.4**):

- BioNet Vegetation Classification (NSW DCCEEW 2024a)
- DCEEW Protected Matters Search Tool (PMST) (Cth DCCEEW 2024)
- NSW State Vegetation Type Map (SVTM) Version C2.0M2.0 (NSW DCCEEW 2023a)
- eSpade 2.1 spatial viewer system (eSpade 2024).
- Final Determination Listing White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions (NSW TSSC 2020a)
- Conservation Assessment of White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland (NSW TSSC 2020b)
- Approved Conservation Advice for the White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Cth DCCEEW 2023)

2.2.2 Mapping Native Vegetation Extent, Plant Community Types and Vegetation Condition Zones

The native vegetation extent (refer to **Section 4.1**) within the Subject Land was determined during site surveys, through GIS analysis and aerial photograph interpretation using recent aerial imagery. Native vegetation and plant community type mapping was undertaken using best-practice techniques to delineate vegetation communities across the Subject Land. Vegetation mapping involved the following key steps:

- review of aerial imagery to assess vegetation distribution patterns as dictated by change in canopy texture, tone, and colour, as well as topography
- review of the modelled distribution of vegetation communities within broader scale regional based vegetation mapping
- preparation of a draft plant community type map based on interpretation of digital aerial imagery



- field-based ground-truthing of the draft plant community type mapping using rapid vegetation assessments
- confirmation of vegetation community floristic delineations based on plot data.

Vegetation communities were delineated through the identification of repeating patterns of plant species assemblages in each of the identified strata. Slight variations in species composition are typical across the extent of a community and are often associated with microhabitats or ecotones with other communities.

Mapping is broad-scale and does not represent a detailed site-specific mapping of native vegetation cover in the offsite areas and should not be used for any purpose other than the estimation of native vegetation cover under the BAM (DPIE 2020a).

2.2.3 Rapid Vegetation Assessments

Rapid data assessments to record the flora species in the Subject Land were conducted using random meanders as described by Cropper (1993). The rapid data assessments recorded the species present, the frequency of their occurrence (common, uncommon or rare) and their status as either threatened, native or non-native (to the local IBRA subregion). This data assisted in the determination all vegetation types and their condition zones.

2.2.4 Plot-based Vegetation Survey

A stratified plot-based floristic vegetation survey of the Subject Land was undertaken in accordance with Table 3 and Section 4.2.1 of the BAM to assess the expected environmental variation and address any gaps and verify the results of previous mapping and site information.

The BAM plots were carried out on the 15 November 2023 by Umwelts Principal Ecologist. Plot survey stratification for each plant community type is listed in **Table 2.1**.

PCT ID	PCT Name	Vegetation Condition Zone	Area (ha) in Subject Land	Quantity of Plots Required (BAM 2020 Table 3)	Number of Plots Complete d
3376	Southern Tableland Grassy Box Woodland	VZ1 3376 Degraded	0.21	1	1

Table 2.2Plant Community Type Survey Plot Stratification Details

A single plot-based vegetation survey was completed to assess the condition of the Subject Land and verify the results of regional mapping and available site information.

The plot consisted of a 20 x 20 m floristic plot nested within a 20 x 50 m vegetation integrity plot. The plot location was recorded with a hand-held GPS device and is shown in **Figure 2.1**. All vascular plants recorded within floristic plots were identified using keys and nomenclature in Plantnet NSW Flora Online Identification Keys (PlantNet 2024).



The floristic survey data collected included the survey data requirements identified in Table 1 of the BAM 2020a. The plot survey effort was completed to ensure compliance with the stratification requirements of Table 3 of the BAM 2020a. The plot location was selected to ensure that it captured attributes relevant to the vegetation zone. As best as possible, the plot was positioned to avoid locations on ecotones, tracks (their edges) and/or small disturbed areas generally inconsistent with the target vegetation zone (e.g., small patches of bare ground).

During completion of the plot roughly 30 minutes was spent searching for all vascular flora species present within the 20 x 20 m area. Searches were generally undertaken through parallel transects from one side of the plot to another. Most efforts were spent examining the groundcover, which consistently supported well over half of the species present. An effort was made to search the tree canopy and tree trunks for mistletoes, vines, and epiphytes where present.

2.2.5 Vegetation Integrity Survey

As part of the plot-based vegetation survey, native vegetation composition, structure and function attributes identified in Section 4.3.4 of the BAM 2020 was assessed for the recorded BAM plot. The location of the plot sampled is mapped to scale and shown as BAM Plots in **Figure 2.1**.

2.3 Threatened Species Survey Methods

The Streamlined assessment module – Small Areas only requires the assessment of threatened species in accordance with Steps 1 and 2 from Section 5.2 of the BAM. These two steps involve the identification of threatened species for assessment and field assessment for suitable habitat. No further survey is required unless suitable habitat is present for a threatened species and the species is considered to be at risk of a Serious and Irreversible Impact (SAII).

2.3.1 Review of Existing Information

The following existing information was reviewed to inform the threatened flora species surveys and assessment of habitat constraints and microhabitats:

- Biodiversity Assessment Method Calculator (BAM-C):
 - Case Number ID: 00044821/BAAS23036/23/00044822.
- Threatened flora and fauna records held on the NSW BioNet Atlas of NSW Wildlife within the Assessment Area (NSW DPIE 2024).
- Vegetation associations for the Bathurst IBRA Sub-regions for each PCT present to determine threatened fauna species PCT associations.
- Habitat constraints listed in the Threatened Biodiversity Data Collection (NSW DCCEEW 2024b).
- BAM Flora species with specific survey requirements spreadsheet (DPIE 2020c).



2.3.2 Habitat Constraints Assessment

The following field-based surveys were undertaken to assess the habitat constraints for the candidate threatened flora species:

- Field searches for habitat constraints identified from the desktop review of the TBDC.
- Direct observation of the quality and suitability of micro-habitats present.
- Collection of rapid flora assessments across all plant community types to assess the condition of the habitats present.
- Collection of site photographs to assess the condition of habitats present.

Field-based and desk top searches were undertaken to assess the habitat constraints for the candidate threatened fauna species, these searches included observation of habitat constraints identified from the desktop review of the TBDC and recording of the presence, quality and/or suitability of micro-habitats present including:

- Hollow bearing trees, particularly those of suitable size for threatened cockatoo and owl breeding habitat.
- Koala use trees.
- Aquatic habitats suitable for amphibians.
- Rocky habitats suitable for reptiles.
- Outcrops, caves, tunnels and old buildings suitable for threatened microbat species.
- Stick nests.

The results of the site-based habitat constraints assessment were utilised to inform the assessment of the confirmed candidate threatened species assessment in the BAM Calculator. Where species presence could not be ruled out in accordance with Section 5.2 of the BAM, targeted surveys were conducted.

No further formal surveys were carried out due to the lack of suitable habitat for fauna species.

2.4 Threatened Flora Surveys

The small nature of the Subject Land and the need to traverse the area to get an understanding of the biodiversity values (primarily vegetation) has led to some areas being searched for threatened flora species. Searches for threatened flora species were completed generally in accordance with the NSW Survey Guide, 'Surveying threatened plants and their habitats' (DPIE 2020b), and any relevant species requirements listed in the Threatened Biodiversity Data Collection (TBDC) (NSW DCCEEW 2024).

General field traverses were conducted through areas of low condition native vegetation and native landscaped gardens. Traverses were conducted at a width of up to 10 m across all potential habitats.

2.5 Limitations

The surveys completed were undertaken during the appropriate seasons specified within the Threatened Biodiversity Data Collection (TBDC) to maximise the probability of detection.



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Image Source: ESRI Basemap (2024) | Data Source: NSW DFSI (2024), NSWSS (2024), TFNSW (2024), Umwelt (2024)



3.0 Site Context

3.1 Assessment Area and Type

The 1,500 m buffer Assessment Areas, including the Subject Land is shown on the Location Map in **Figure 2.1**. The Subject Land has been assessed as a site-based assessment.

3.2 Landscape Features

The 1,500 m buffer area contains a mixture of residential, business infrastructure with areas to the north and northeast primarily agricultural-based activities. There is very little native vegetation within the buffer with most patches of remnant vegetation found along the Macquarie River and small patches of vegetation throughout the residential areas. The landscape features in relation to the Subject Land are outlined in **Table 3.1**.

Landscape Features within 150	00 m buffer area
Assessment Type	Site-based
Subject Land Size	4.2 ha
Development Footprint	1.19 ha
Assessment Area	832.52 ha
IBRA Bioregion	South Eastern Highlands
IBRA Subregion	Bathurst
Mitchell Landscape	Bathurst Granites
LGA	Bathurst Shire Council
Rivers, Streams, Estuaries	There are no rivers, creeks, streams or other waterbodies within the Subject Land. The Macquarie River is located approximately 500 m to the northeast of the Subject Land
Wetlands (within, adjacent to and downstream)	There are no wetlands within the Subject Land
Native Vegetation Cover Class	0-10% (6.6%)
Areas of Geological Significance and Soil Hazard Features	There are no areas of geological significance identified.
Areas of Outstanding Biodiversity Value	The Subject Land occurs within the Bathurst soil landscape unit and is mapped as having severe limitations according to the Land and Soil Capability modelling. The Bathurst soil landscape unit is subject to a moderate to high erosion hazard and high structural degradation hazard (DPIE 2023)
Exotic/Disturbed Areas	The vegetation within the Subject Land consists primarily of landscaped gardens (ornamental and native) and managed grass areas
Connectivity Features	Connectivity is very poor given the site location within an urban centre and extensive clearing for agriculture in the wider Bathurst region

Table 3.1 Landscape Features in the Subject Land (Hunter IBRA subregion)



3.3 Native Vegetation Cover

The native vegetation (woody and non-woody) cover within the Assessment Area was determined through site surveys of the Subject Land, and aerial photograph interpretation using Nearmap aerial imagery and the SVTM.

Table 3.2 summarises the extent of native vegetation cover within the assessment area and Figure 3.1shows the extent of native vegetation cover within the assessment area.

 Table 3.2
 Native Vegetation Cover in the Assessment Area (1,500 m buffer)

Native Vegetation Cover	
1500 m Buffer Assessment (ha)	832.52
Total area of native vegetation cover (ha)	51.19
Percentage of native vegetation cover (%)	6.55
Class (0-10, >10-30, >30-70 or >70 %)	0-10







4.0 Native Vegetation, Threatened Ecological Communities and Vegetation Integrity

4.1 Native Vegetation Extent

4.1.1 Vegetation within the Subject Land

The vegetation across the Subject Land is predominantly landscaped gardens consisting of a mix of native dominated gardens and formal landscaped gardens with ornament and exotic species. There is a small area that is a regularly mown parkland like area with planted natives that was considered to align (in part) to a PCT 3376, although in a relatively poor form. The Development Footprint contains the following vegetation types identified in **Table 4.1** and has been shown in **Figure 4.1**.

Table 4.1 Development Footprint

Development Footprint	Area (ha)
PCT 3376 Southern Tablelands grassy box woodland	0.21
Planted Vegetation – Native	0.27
Planted Vegetation – Exotic	0.20
Hardstand and Buildings	0.51
Total	1.19

4.1.2 Changes to the Mapped Native Vegetation Extent

No notable changes were observed during surveys to the mapped native vegetation extent visible on the aerial imagery used for this assessment the mapping of native vegetation extent for the Location Map was informed by the Land Use for NSW 2017 (NSW DCCEEW 2019) mapping which assisted in the identification of native grassland areas.

4.1.3 Areas that are Not Native Vegetation

There are areas assessed as non- native vegetation and include areas that are totally cleared such as existing roads, urban areas and disturbed areas.

4.2 Plant Community Types

The BAM Streamlined Assessment Module for small area development requires that the dominant PCT be identified. Site-based surveys have been completed which identified the presence of only one PCT within the Development Footprint.

The PCT identified in this assessment for the Subject Land is based on the floristic surveys conducted in November 2023.



Vegetation within the Subject Land has been assessed and assigned a PCT using BioNet Vegetation Classification tool which use the current Eastern NSW PCT classification. PCTs have been identified within **Table 4.2** and displayed in **Figure 4.1**.

Detailed descriptions of the single PCT identified within the Subject Land, including justification of PCT selections are provided in **Section 4.0**.

PCT I	D	PCT Name	Vegetation Class	Vegetation Formation	NSW VIS Percentage Cleared Estimate (%)	Vegetation Condition Zone	Area Within Subject Land (ha)
3376		Southern Tableland Grassy Box Woodland	Southern Tableland Grassy Woodlands	Grassy Woodlands	93	VZ1 3376 Degraded	0.21

 Table 4.2
 Plant Community Types Identified Within the Subject Land

A flora species list is included in **Appendix C**.

4.2.1.1 3376 Southern Tablelands Grassy Box Woodland - Degraded

PCT Name	PCT Name Southern Tableland Grassy Box Woodland				
PCT Number		3376	Plots No.	23462_001	
Vegetation Condition Zone		VZ1 3376 Degraded	Formation	Grassy Woodlands	
Extent within Subject Land		0.21 ha	Class	Southern Tableland Grassy Woodlands	



PCT Name	Southern Tableland Grassy Box Woodland			
General Description				
Canopy Description	PCT 3376 within the Subject Land is characterised by yellow box (<i>Eucalyptus melliodora</i>), Blakely's Red Gum (<i>Eucalyptus blakleyi</i>), <i>kurrajong (Brachychiton populneus)</i> and mugga ironbark (<i>Eucalyptus sideroxylon</i>) in the upper strata. The Blakely's red gum, kurrajong and mugga ironbark were recorded in the vegetation zone not in the BAM Plot.			
Mid-storey Description	No native species were recorded in the mid-stratum, only Cotoneaster glaucophyllus.			
Ground Cover Description	The lower stratum is dominated by couch grass (<i>Cynodon dactylon</i>). The only other native species observed in the lower stratum was tall bluebells (<i>Wahlenbergia stricta</i>), all other species were exotic and included wild oats (<i>Avena barbata</i>), blue heliotrope (<i>Heliotropium amplexicaule</i>), Atlas cedar (<i>Cedrus atlantica</i>), <i>Convolvulus sabatius, Plantago lanceolata, Vulpia spp.</i> , and Chilean needle grass (<i>Nassella neesiana</i>).			
PCT Allocation	The vegetation identified as PCT 3376 is lacking in diversity of native species and structural complexity that would be considered representative of the community. The vegetation possesses two canopy species that is very distinctly characteristic of the PCT; <i>Eucalyptus melliodora</i> and <i>Eucalyptus blakleyi</i> . Additionally, <i>Wahlenbergia stricta</i> and <i>Cynodon dactylon</i> are both occasionally found in the PCT. Another PCT considered was PCT 3534 - Central West Stony Hills Stringybark-Box Forest, as it was mapped within the Subject Land within the SVTM. However this PCT is typically characterised by other species of 'Box', such as <i>Eucalyptus polyanthemos</i> (red box) and <i>E. goniocalyx</i> (long-leaved box), with <i>E. melliodora</i> . Additionally, while <i>E. sideroxylon</i> is not characteristic of PCT 3376, it is a frequently planted native canopy species due to its showy pink-red flowers and distinctively dark, furrowed bark. Its presence in the vegetation zone may have been a result of early plantings or recruitment from other established individuals nearby.			
BC Act Status	PCT 3376 is associated with the NSW BC Act listed Critically endangered ecological community (CEEC) White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions. The vegetation is depauperate, lacking in native diversity and structural integrity, however is presumed to be contributing to the ecological community at the patch scale by providing genetic material and poor foraging habitat to highly mobile native fauna species. The patch, which extends throughout the adjacent Victoria Park and remnant individuals in back yards and mature plantings along the road appears to be similarly degraded.			
EPBC Act Status	PCT 3376 is associated with the Commonwealth EPBC Act listed critically endangered ecological community White Box - Yellow Box - Blakely's Red Gum Grassy Woodland. When assessed against the criteria for classifying the community in accordance with the Commonwealth listed TEC (DEH 2006), it is evident that the patch does not meet the condition classes.			



4.3 Planted Vegetation

Surveys of the Subject Land identified two additional vegetation zones, both comprised of planted species which were not able to conform to a PCT:

- Landscaped Gardens Native
- Landscaped Gardens Exotic.

Descriptions of the planted vegetation zones are included in the below tables.

4.3.1 Landscaped Gardens – Native

PCT Name	Landscaped G	ardens - Native		
PCT Number		N/A	Plots completed	N/A
Vegetation C	Condition Zone	Landscaped Gardens -Native	Formation	N/A
Extent within Subject Land (ha)		0.27	Class	N/A
PCT image				



PCT Name	Landscaped Gardens - Native	
General Description	This vegetation zone can largely be described as landscaped gardens dominated by planted native species. The vegetation is located in formal gardens and along a constructed batter with a north facing aspect. Trees are generally of a young age and lack hollows. The midstory is generally sparse and planted with many coastal species which do not occur naturally in the area. The groundcover is sparse or absent, and similarly to the mid layer, is dominated by planted coastal species. Exotic cover is low, and the area has an irrigation system throughout.	
Canopy Description	A very sparse planted canopy layer of predominantly native species exists throughout this zone including red ironbark (<i>Eucalyptus sideroxylon</i>), Blakely's red gum (Eucalyptus blakelyi) and southern blue gum (<i>Eucalyptus globulus subsp. bicostata</i>). Exotic species include a pine species (<i>Pinus spp</i> .).	
Mid-storey Description		
Ground Cover Description	The groundcover of this zone is largely absent in places, and sparse otherwise. Planted native species include pigface (<i>Carpobrotus</i> spp.), blue flax-lily (<i>Dianella caerulea</i>), Poa spp, spiny headed mat rush (<i>Lomandra longifolia</i>), purple coral pea (<i>Hardenbergia violacea</i>), creeping myoporum (<i>Myoporum parvifolium</i>), many-flowered mat rush (<i>Lomandra multiflora</i>) and <i>Austrostipa</i> spp. Lord Howe Wedding Lily (<i>Dietes robinsoniana</i>) also occurs.	

The Streamlined Assessment Module – Planted Native Vegetation was used to determine if the vegetation in the Landscape Gardens supported sufficient characteristics that would be considered a PCT, this information is presented in **Table 4.3**. It was concluded that the vegetation within the Landscaped Gardens – Native are not considered native vegetation therefore cannot be assigned to a PCT. Further assessment was only required in accordance with Section 5.2 of BAM which requires assessment of threatened species habitat.

Table 4.3 Assessment of Planted Native Vegetation

Decision making Criteria	Response
1) Does the planted native vegetation occur within an area that contains a mosaic of planted and remnant native vegetation and which can be reasonably assigned to a PCT known to occur in the same IBRA subregion as the proposal	Planted native vegetation is not contiguous with any extents of remnant native vegetation, and does not contain any remnant native vegetation which can reasonably be assigned to a PCT.
2) Is the planted native vegetation planted for the purpose of environmental rehabilitation or restoration under an existing conservation obligation listed in BAM Section 11.9(2) and the primary objective was to replace or regenerate a PCT or a threatened plant species population or its habitat.	No existing conservation obligation as listed in Section 11.9(2.) of the BAM is present on the Subject Land. The vegetation planted within the Subject Land does not contain any threatened plant species, or is floristically or structurally commensurate with a PCT.



Decision making Criteria		Response
3)	Is the planted or translocated native vegetation for the purpose of providing threatened species habitat under a project listed in Q3 of the Planted Native Vegetation Streamlined Assessment Module	No species recovery projects, Saving our Species projects, or other government funded restoration projects are located on the Subject Land.
		The vegetation planted within the Subject Land does not contain any threatened plant species or threatened species habitat.
		The vegetation on the Subject Land is unlikely to have been planted to satisfy a legal obligation for remedial plantings.
		The Subject Land is not located within or close to a mine site such that the plantings have been planted as part of a mine operations plan.
		The planted native vegetation is not located within a riparian buffer such that it has been established as part of a vegetation management plan required under a Controlled Activity Approval.
4)	Was the planted native vegetation undertaken voluntarily for revegetation, environmental rehabilitation or restoration without a legal obligation to secure or provide for management of the native vegetation?	The vegetation planted within the Subject Land does not contain any threatened plant species, and is not floristically or structurally commensurate with a PCT.
5)	Is the planted native vegetation for functional, aesthetic, horticultural or plantation forestry purposes?	The vegetation within the Subject Land is a mix of planted locally indigenous, native species, Australian natives, complex hybrids, and exotic species. The plants have been planted as functional landscaping within the Subject Land. Apply D.2 Assessment
6)	Is the planted native vegetation a species listed as a widely cultivated native species on a list approved by the Secretary of the Department?	NA: answered yes to Q5.

4.3.2 Landscaped Gardens – Non Native

This vegetation zone can be described as formal landscaped gardens with ornament and exotic species. These areas are highly managed and have minimal presence of native species outside of horticultural varieties. The planted canopy is dominated by Chinese elm (*Ulmus parvifolia*), along with Atlas cedar (*Cedrus atlantica*), Juniper species (*Juniperinus spp.*), oak trees (*Quercus spp.*), black locust (*Robina pseudoacacia*) pine trees (*Pinus spp.*) and callery pear (*Pyrus calleryana*). Planted midstory contains a variety of common ornamental species such as Rosemary (*Salvia Rosmarinus*), Lavender (Lavandula spp.), Rose varieties (*Rosa* spp.), Eumundi hedge (*Elaeocarpus eumundi*), heavenly bamboo (Nandina domestica), Jasmine vine (Jasminum spp.) and agapanthus (*Agapanthus praecox*). Ground cover highly managed, dominated by Kikuyu grass with a small amount of Moroccan morning glory vine (*Convolvulus sabatius*) as well as couch grass (*Cynodon dactylon*).



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4.4 Threatened Ecological Communities

An assessment of threatened ecological communities (TECs) under the State Biodiversity Conservation Act (BC Act) and the Commonwealth Environment Protection and Biodiversity Conservation Act (EPBC Act) which may occur within the Subject Land was undertaken as part of the initial desktop assessment for the proposal. At the completion of fieldworks, floristic data was reviewed against the likely TECs (species assemblage and supplementary descriptors such as landscape position and soil types), to occur and then compared to the NSW Scientific Committee's Scientific Determination and/or Commonwealth Listing Advice. The following sections provide a summary of the TECs recorded within the Subject Land and how vegetation observed meets the Final determination and listing advice.

4.4.1 NSW Biodiversity Conservation Act: Threatened Ecological Communities

One TEC listed under the BC Act was recorded within the Subject Land, this being the:

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

Although the TEC occurs in a very poor condition, with only three native species recorded in the BAM plot, it is likely that it is contributing to the ecological community at the patch scale by providing genetic material as well as poor foraging habitat to highly mobile native fauna species. The vegetation is a part of a wider patch which extends into the adjacent Victoria Park, although this wider patch of a similar depauperate condition.

 Table 4.6 provides a summary of the BC Act listed TECs and displayed on Figure 4.3.

Table 4.4	Summary of TECs within the Subject Land Listed Under the BC Act
	Summary of TECS within the Subject Land Listed Onder the DC Act

Threatened Ecological Community	Vegetation Zone	Area (ha)
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	VZ1 3376 Southern Tablelands grassy box woodland – Degraded	0.21



4.4.2 Environment Protection and Biodiversity Conservation Act: - Threatened Ecological Communities

One TEC listed under the EPBC Act was potentially recorded within the Subject Land, being:

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

The TBDC identifies that *PCT 3376 Southern Tableland Grassy Box Woodland* is associated with the CEEC White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland, as listed under the EPBC Act.

An assessment was undertaken to determine if the occurrences of PCT 3376 Degraded within the Subject Land conformed to listed community as described in the Conservation Advice provided by the Australian Government under the EPBC Act (DCCEEW 2023).

Table 4.7 provides an assessment of vegetation zones for PCT 3376 against the Key Diagnostic Criteria provided by (DCCEEW 2023).

Table 4.5Key Diagnostic Characteristics for White Box - Yellow Box - Blakely's Red Gum Grassy
Woodland and Derived Native Grassland CEEC

Criteria (DEH 2006)	Response
Is, or was previously, at least one of the most common overstorey species White Box, Yellow Box or Blakley's Red Gum (or Western Grey Box or Coastal Box in the Nandewar Bioregion)?	Yes
Does the patch have a predominantly native understorey?	Yes
Is the patch 0.1 ha or greater in size?	Yes
There are 12 or more native understorey species present (excluding grasses). There must be at least one important species.	Νο
Is the patch 2 ha or greater in size?	No
Does the patch have an average of more than 20 mature trees per hectare, or is there natural regeneration of the dominant overstorey eucalypts?	No, not the listed ecological community.

The assessment against the Key Diagnostic Criteria found that PCT 3376 Southern Tablelands box grassy box woodland Degraded does not align with the White Box - Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC.




FIGURE 4.2

Threatened Ecological

Communities

Subject Land

Development Footprint

Threatened Ecological Communities

White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions



Scale 1:1,750 at A4 GDA2020 MGA Zone 55

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4.5 Plant Community Type Vegetation Zones

A description of the PCT vegetation zone within the Subject Land is provided in **Section 4.2** of this Report. A map of the vegetation condition zones is provided in **Figure 4.1**. The details of each vegetation zone including area, patch size class and the BAM survey plots required and completed are provided in **Table 4.8**.

					•			
Vegetation Zone ID	PCT ID	Condition/ Other Defining Feature	Area in the Subject Land (ha)	Patch Size Class	VI Plots Required	VI Plots Completed	VI Plots Used in Assessment	Plot IDs of VI Plots Used in Assessment
VZ1 3376 Southern Tablelands grassy box woodland – Degraded	3376	Low	0.21	3.1	1	1	1	23462_001

 Table 4.6
 Vegetation Zones and Patch Sizes for the Subject Land

4.6 Vegetation Integrity

4.6.1 Vegetation Integrity Survey Plots

Details on the number of vegetation integrity (VI) plots required and completed for each vegetation zone, in accordance with Table 3 of the BAM, are provided in **Table 4.8**. The vegetation integrity plot survey location is shown in **Figure 2.1** and the vegetation integrity plot survey data are provided in **Appendix C**.

4.6.2 Vegetation Integrity Scores

The vegetation integrity scores for the BAM plot completed is provided in **Table 4.9**. This table includes each attribute score, VI score and the presence/absence of hollow-bearing trees.

Table 4.7	Vegetation Integrity Score
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PCT No.	PCT Name	Vegetation Zone	Composition	Structure	Function	Current VI Score	Hollow bearing trees present?
3376	Southern Tableland Grassy Box Woodland	VZ1 3376 Degraded	2.2	47	9.6	9.9	No*

*No hollows were recorded in the Plot or the wider vegetation zone.

4.6.3 Use of Benchmark Data

The standard BAM-C benchmark values were used in this assessment for each vegetation zone.



5.0 Threatened Species

5.1 Ecosystem Species

5.1.1 Identification of Ecosystem Credit Species

Ecosystem credit species are those threatened species that can be reliably predicted to occur based on the PCTs identified within the Subject Land. The BAM-C generates a list of predicted ecosystem credit species from numerous inputs such as landscape features and the native vegetation communities present. The ecosystem credit species predicted to occur on or use the Subject Land are identified in **Table 5.1**. Justification is provided for any species from the BAM-C automatically populated list excluded from assessment.



Common Name	Scientific Name		ting Itus	Dual Credit	Sources	Habitat Constraints/ Geographic Limitations	Species Retained	Justification for any Exclusions	Associated PCT	Sensitivity to Gain
		BC Act	EPBC Act	Species						Class
Regent honeyeater (foraging habitat)	Anthochaera phrygia	CE	CE	Yes	BAM-C	N/A	Yes	N/A	3376	High
Dusky woodswallow	Artamus cyanopterus cyanopterus	V	-	No	BAM-C	N/A	Yes	N/A	3376	Moderate
Australian Bittern	Botaurus poiciloptilus	E	E	No	BAM-C	Presence of waterbodies and brackish or freshwater wetlands	No	No brackish or freshwater wetlands within the Subject Land	3376	Moderate
Gang-gang cockatoo (foraging habitat)	Callocephalon fimbriatum	V	E	Yes	Bam-C	N/A	Yes	N/A	3376	Moderate
South-eastern glossy black- cockatoo (foraging habitat)	Calyptorhynchus Iathami	V	V	Yes	BAM-C	Presence of Allocasuarina and Casuarina species	No	No Allocasuarina and Casuarina species present	3376	High
Speckled warbler	Chthonicola sagittata	V	-	No	BAM-C	N/A	Yes	N/A	3376	High
Spotted harrier	Circus assimilis	V	-	No	BAM-C	N/A	Yes	N/A	3376	Moderate
Brown treecreeper (eastern subspecies)	Climacteris picumnus victoriae	V	V	No	BAM-C	N/A	Yes	N/A	3376	High
Varied sittella	Daphoenositta chrysoptera	V	-	No	BAM-C	N/A	Yes	N/A	3376	Moderate

Table 5.1 Predicted Ecosystem Credit Species



Common Name	Scientific Name		ting Itus	Dual Credit	Sources	Habitat Constraints/ Geographic Limitations	Species Retained	Justification for any Exclusions	Associated PCT	Sensitivity to Gain	
		BC Act	EPBC Act	Species						Class	
Spotted-tailed quoll	Dasyurus maculatus	V	E	No	BAM-C	N/A	Yes	N/A	3376	High	
Black falcon	Falco subniger	V	-	No	BAM-C	N/A	Yes	N/A	3376	Moderate	
Little lorikeet	Glossopsitta pusilla	V	-	No	BAM-C	N/A	Yes	N/A	3376	High	
Painted honeyeater	Grantiella picta	V	V	No	BAM-C	Mistletoes present at a density of greater than five mistletoes per hectare	No	Required mistletoe density not met for PCT 3376	3376	Moderate	
White-bellied sea- eagle (foraging habitat)	Haliaeetus leucogaster	V	-	Yes	BAM-C	Within 1 km of a rivers, lakes, large dams or creeks, wetlands and coastlines	Yes	N/A	3376	High	
Little eagle (foraging habitat)	Hieraaetus morphnoides	V	-	Yes	BAM-C	N/A	Yes	N/A	3376	Moderate	
White-throated needletail	Hirundapus caudacutus	-	V	No	BAM-C	N/A	Yes	N/A	3376	High	
Swift parrot (foraging habitat)	Lathamus discolor	E	CE	Yes	BAM-C	N/A	Yes	N/A	3376	Moderate	
Square-tailed kite (foraging habitat)	Lophoictinia isura	V	-	Yes	BAM-C	N/A	Yes	N/A	3376	Moderate	
South-eastern Hooded robin	Melanodryas cucullata cucullata	E	E	No	BAM-C	N/A	Yes	N/A	3376	Moderate	



Common Name	Scientific Name		ting Itus	Dual Credit	Sources	Habitat Constraints/ Geographic Limitations	Species Retained	Justification for any Exclusions	Associated PCT	Sensitivity to Gain
		BC Act	EPBC Act	Species						Class
Black-chinned honeyeater (eastern subspecies)	Melithreptus gularis gularis	V	-	No	BAM-C	N/A	Yes	N/A	3376	Moderate
Large bent-winged bat (foraging habitat)	Miniopterus orianae oceanensis	V	-	Yes	BAM-C	N/A	Yes	N/A	3376	High
Scarlet robin	Petroica boodang	V	-	No	BAM-C	N/A	Yes	N/A	3376	Moderate
Flame robin	Petroica phoenicea	V	-	No	BAM-C	N/A	Yes	N/A	3376	Moderate
Grey-headed flying-fox (foraging habitat)	Pteropus poliocephalus	V	V	Yes	BAM-C	N/A	Yes	N/A	3376	High
Yellow-bellied sheathtail-bat	Saccolaimus flaviventris	V	-	No	BAM-C	N/A	Yes	N/A	3376	High
Diamond firetail	Stagonopleura guttata	V	V	No	BAM-C	N/A	Yes	N/A	3376	Moderate
Key to BC Act/EPBC Act Lis	ting Status: V = vulnerable,	, E = enda	ngered, Cl	E = critically e	ndangered.	•	•			



5.2 Species Credit Species

5.2.1 Identification of Species Credit Species and Habitat Assessment

Species credit species are those threatened species that cannot be reliably predicted to use an area of land based on habitat surrogates and therefore require further consideration through an assessment of habitat suitability.

The BAM-C generates a list of species credit species based on numerous inputs such as the distribution of the species occurring within the same IBRA subregion as the Subject Land and the presence of habitat features and components associated within these species.

The candidate species credit species predicted to occur within the Subject Land are identified in Table 5.2.

Justification is provided for any species identified automatically populated in the BAM-C that were excluded from further assessment. Geographic limitations, habitat constraints, degradation or lack of suitable microhabitats are the permitted reasons for excluding species credit species in accordance with Section 5.2.1(2)(b) and Section 5.2.2(2)(b) of the BAM.

As noted in **Section 2.3**, no further survey for threatened species is required after Step 2 in Section 5.2 of BAM unless suitable habitat is present for a threatened species and the species is considered to be at risk of a Serious and Irreversible Impact (SAII).

An assessment of habitat suitability was carried out for each of the species identified in **Table 5.2**. The assessment was based on details provided within the TBDC including associated PCTs and known habitat or geographical constraints as detailed within **Table 5.3**. A number of species have been removed from the from the BAM calculator automatically populated candidate species list based on geographic and habitat constraints, the degraded nature of the Subject Land, regular roadside and property management and the small area of impact at many of Sites.

While no targeted survey was required for any of the threatened species a general threatened species survey was carried out focusing on flora species.



Table 5.2 Candidate Species Credit Species	
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Common Name	Scientific Name	Listing	Status	Sources	Habitat	Associa ted	Species	Justification if Excluded from Further
		BC Act	EPBC Act		Constraints/ Geographic Limitations		Retained for Further Assessment?	Assessment
Flora								
Duramana Fingers	Caladenia attenuata	CE	CE	 BAM-C TBDC Previous survey Current survey 	N/A	3376	Yes	No further assessment was required as the species is not subject to a SAII. Due to the small nature of the Subject Lands a general transect survey was carried out for species which their optimal survey period aligned with the survey timing.
Black Gum	Eucalyptus aggregata	V	V	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	N/A	3376	Yes	No further assessment was required as the species is not subject to a SAII. Due to the small nature of the Subject Lands a general transect survey was carried out for species which their optimal survey period aligned with the survey timing.
Silver-leafed Gum	Eucalyptus pulverulenta	V	V	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	N/A	3376	Yes	No further assessment was required as the species is not subject to a SAII. Due to the small nature of the Subject Lands a general transect survey was carried out for species which their optimal survey period aligned with the survey timing.



Common Name	Scientific Name	Listing	Status	Sources	Habitat	Associa	Species	Justification if Excluded from Further
		BC Act	EPBC Act		Constraints/ Geographic Limitations	ted PCT/s	Retained for Further Assessment?	Assessment
Aromatic peppercress	Lepidium hyssopifolium	E	E	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	N/A	3376	Yes	No further assessment was required as the species is not subject to a SAII. Due to the small nature of the Subject Lands a general transect survey was carried out for species which their optimal survey period aligned with the survey timing.
Hoary Sunray	Leucochrysum albicans subsp. tricolor	Ε	E	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	N/A	3376	Yes	No further assessment was required as the species is not subject to a SAII. Due to the small nature of the Subject Lands a general transect survey was carried out for species which their optimal survey period aligned with the survey timing.
Silky swainson- pea	Swainsona sericea	V	-	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	N/A	3376	Yes	No further assessment was required as the species is not subject to a SAII. Due to the small nature of the Subject Lands a general transect survey was carried out for species which their optimal survey period aligned with the survey timing.
Fauna			1	1		-	1	
Regent honeyeater (breeding habitat)	Anthochaera phrygia	CE	CE	 BAM-C TBDC Previous survey Current survey 	Mapped important habitat.	3376	No	Site is not within mapped important habitat.



Common Name	Scientific Name	Listing	Status	Sources	Habitat	Associa	Species	Justification if Excluded from Further
		BC Act	EPBC Act		Constraints/ Geographic Limitations	ted PCT/s	Retained for Further Assessment?	Assessment
Pink-tailed legless lizard	Aprasia parapulchella	V	V	 BAM-C TBDC Previous survey Current survey 	Rocky areas or within 50m of rocky areas.	3376	No	Habitat constraints not met.
Bush stone- curlew	Burhinus grallarius	E	-	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	Fallen/standing dead timber including logs.	3376	No	Habitat constraints not met.
Gang-gang cockatoo (breeding habitat)	Callocephalon fimbriatum	V	E	 BAM-C TBDC Previous survey Current survey 	Hollow bearing trees. Eucalypt tree species with hollows at least 3 m above the ground and with hollow diameter of 7 cm or larger.	3376	No	Habitat constraints not met.
South-eastern glossy black- cockatoo (breeding habitat)	Calyptorhynchu s lathami lathami	V	V	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	Hollow bearing trees. Living or dead tree with hollows greater than 15 cm diameter and greater than 8 m above ground.	3376	No	Habitat constraints not met.



Common Name	Scientific Name	Listing	Status	Sources	Habitat	Associa	Species	Justification if Excluded from Further
		BC Act	EPBC Act		Constraints/ Geographic Limitations	ted PCT/s	Retained for Further Assessment?	Assessment
Eastern pygmy possum	Cercartetus nanus	V	_	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	N/A	3376	No	No further assessment was required as the species is not subject to a SAII. Species unlikely to occur based on lack of remnant vegetation that would provide suitable habitat and the Subject Land has not connectivity to remnants that this species may occur. This species has been excluded from further assessment due to the degraded nature of the vegetation and lack of connectivity to remnant vegetation been excluded from further assessment.
Large-eared pied bat	Chalinolobus dwyeri	V	V	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	Cliffs. Within two kilometres of rocky areas containing caves, overhangs, escarpments, outcrops, or crevices, or within 2 km of old mines or tunnels.	3376	No	Habitat constraints not met.



Common Name	Scientific Name	Listing	Status	Sources	Habitat	Associa	Species	Justification if Excluded from Further
		BC Act	EPBC Act		Constraints/ Geographic Limitations	ted PCT/s	Retained for Further Assessment?	Assessment
Striped legless lizard	Delma impar	V	V	 BAM-C TBDC Previous survey Current survey 	N/A	3376	No	This species is associated with grassland dominated by tussock forming grasses, or grasslands with significant amounts of surface rocks. The vegetation within the Subject Land consists of a mown area of couch grass (<i>Cynodon dactylon</i>) and does not provide suitable habitat for the species. As such the species has been excluded from further assessment.
White-bellied sea-eagle (breeding habitat)	Haliaeetus leucogaster	V	-	 ☑ BAM-C □ TBDC □ Previous survey Current survey 	Other. Living or dead mature trees within suitable vegetation within 1 km of a rivers, lakes, large dams or creeks, wetlands and coastlines.	3376	No	Although the Subject Land is within 1 km of the Macquarie river, the vegetation consists of a planted garden and mown lawn, and has very limited connectivity and native trees are relatively young in age. Breeding material (nests were searched for during vegetation surveys.
Little eagle (breeding habitat)	Hieraaetus morphnoides	V	-	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	Other. Nest trees - live (occasionally dead) large old trees within vegetation).	3376	No	Habitat constraints not met.



Common Name	Scientific Name	Listing	Status	Sources	Habitat	Associa	Species	Justification if Excluded from Further	
		BC Act	EPBC Act		Constraints/ Geographic Limitations	ted PCT/s	Retained for Further Assessment?	Assessment	
Key's Matchstick Grasshopper	Keyacris scurra	E	E	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	N/A	3376	No	Species is associated with good condition native grasslands or other vegetation associations with a native grass understory, predominately containing kangaroo grass (<i>Themeda</i> <i>triandra</i>) or known food plants. The ground layer within the Subject Land is highly disturbed, is dominated by couch grass (<i>Cynodon dactylon</i>) and does not contain known food plants. This species has been excluded from further assessment.	
Swift parrot (breeding habitat)	Lathamus discolor	E	CE	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	As per mapped important habitat.	3376	No	Site is not within mapped important habitat.	
Green and Golden Bell Frog	Litoria aurea	E	V	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	Within 1 km of semi-permanent or ephemeral wet areas Within 1 km of swamps Within 1 km of waterbody	3376	No	Although the Subject Land is within 1km of the Macquarie river, the vegetation consists of a planted garden and mown lawn, and has very limited connectivity to any potential habitat. This species has been excluded from further assessment.	



Common Name	Scientific Name	Listing	Status	Sources	Habitat	Associa	Species	Justification if Excluded from Further
		BC Act	EPBC Act		Constraints/ Geographic Limitations	ted PCT/s	Retained for Further Assessment?	Assessment
Booroolong frog	Litoria booroolongensis	E	E	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	N/A	3376	No	Occurs along and around permanent streams. As no streams occur within the Subject Land, the species has been excluded from further assessment.
Yellow-spotted tree frog	Litoria castanea	CE	CE	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	N/A	3376	No	Require large permanent ponds or slow flowing 'chain-of-ponds' streams with abundant emergent vegetation such as bulrushes and aquatic vegetation. As this habitat does not occur within the Subject Land, this species has been excluded from further assessment.
Southern bell frog	Litoria raniformis	E	V	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	N/A	3376	No	The Subject Land does not contain the required breeding habitat of swamps, floodplains, or irrigated crop land or the required overwintering habitat of ground debris and deep soil cracks. The species has been excluded from further assessment.
Square-tailed kite (breeding habitat)	Lophoictinia isura	V	-	 BAM-C TBDC Previous survey Current survey 	Other. Nest trees.	3376	No	Habitat constraints not met.



Common Name	Scientific Name	Listing	Status	Sources	Habitat	Associa	Species	Justification if Excluded from Further	
		BC Act	EPBC Act		Constraints/ Geographic Limitations	ted PCT/s	Retained for Further Assessment?	Assessment	
Large bent- winged bat (breeding habitat)	Miniopterus orianae oceanensis	V	-	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	Cave, tunnel, mine, culvert or other structure known or suspected to be used for breeding including species records with microhabitat code "IC - in cave" observation type code "E nest-roost" with numbers of individuals >500".	3376	No	Habitat constraints not met.	
Barking owl	Ninox connivens	V	-	 BAM-C TBDC Previous survey Current survey 	Hollow bearing trees. A living or dead tree with a hollow >20 cm diameter that occurs >4 m above the ground.	3376	No	Habitat constraints not met.	
Powerful owl	Ninox strenua	V	-	 BAM-C TBDC Previous survey Current survey 	Hollow bearing trees. A living or dead tree with a hollow >20 cm diameter that occurs >4 m above the ground.	3376	No	Habitat constraints not met	



Common Name	Scientific Name	Listing	Status	Sources	Habitat	Associa ted	Species	Justification if Excluded from Further
		BC Act	EPBC Act		Constraints/ ten Geographic PC Limitations		Retained for Further Assessment?	Assessment
Squirrel glider	Petaurus norfolcensis	V	-	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	N/A	3376	No	Requires areas with diverse midstory and abundant tree hollows. This species has been excluded from further assessment due to the degraded nature of the vegetation and lack of connectivity to remnant vegetation.
Brush tailed rock- wallaby	Petrogale penicillata	Ε	V	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	Other. Land within 1 km of rocky escarpments, gorges, steep slopes, boulder piles, rock outcrops or cliff lines.	3376	No	Habitat constraints not met.
Koala	Phascolarctos cinereus	E	E	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	Other. Presence of koala use trees (refer to Survey Comments field in TBDC.	3376	No	The Subject Land is located in an urban centre with an operating hospital surrounded by busy road network. The Subject Land has no connectivity to remnant vegetation.
Grey-headed flying-fox (breeding habitat)	Pteropus poliocephalus	V	V	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	Other. Breeding camps.	3376	No	No breeding camps present.
Bathurst Grassland Earless Dragon	Tympanocryptis mccartneyi	CE	CE	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	Other. <5% natural (pre- European) tree cover, or naturally treeless plains)	3376	No	Habitat constraints not met.



Common Name	Scientific Name	Listing Status			Habitat		Species Retained for	Justification if Excluded from Further	
		BC Act	EPBC Act		Constraints/ Geographic Limitations	ted PCT/s	Further Assessment?	Assessment	
Masked owl	Tyto novaehollandiae	V	-	 ☑ BAM-C □ TBDC □ Previous survey □ Current survey 	Hollow bearing trees. A living or dead tree with a hollow >20 cm diameter that occurs >4 m above the ground.	3376	No	Lives in dry eucalypt forests and woodlands and roosts and breeds in moist eucalypt forested gullies, using large tree hollows or sometimes caves for nesting. This species has been excluded from further assessment.	



5.2.2 Assessment of Habitat Suitability

An assessment of habitat suitability was undertaken to determine the likelihood of species credit species occurring across the Subject Lands. The assessment used the geographic, and habitat constraints outlined in the BAM-C and the TBDC. In addition, information collated from field surveys (refer to **Section 2.5**)

The degraded nature of the native vegetation within the Subject Land is a result of the ongoing management of the landholding as the major hospital for the Bathurst region. The area is a regularly mown couch grass (*Cynodon* dactylon) lawn, with a canopy of yellow box (*Eucalyptus melliodora*), Blakely's red gum (*Eucalyptus blakelyi*) and red ironbark (*Eucalyptus sideroxylon*). A single other native species, that being tall bluebell (*Wahlenbergia stricta*) was observed in the groundcover. All other species observed within the areas were exotic. The area lacks structural habitat, with no hollows identified, and no ground debris or rocks being observed. The vegetation has minimal connectivity to the wider patch occurring in Victoria Park. The park vegetation is also a mix of native and exotic plantings and exhibits a similar level of degradation. The habitat value for fauna species is restricted to a poor feeding resource for highly mobile fauna species. Because of this, all potential candidate species were able to be excluded from further assessment. The habitat value for threatened flora is low for species such as forbs and orchids due to the management and high coverage of couch grass.

Table 5.3 provides a summary of the candidate species which were surveyed due to the vegetation surveys being carried out during the optimal survey period for each of the species. No suitable habitat was observed for these species. The table also includes the survey method which has been used to determine whether each species is present.



Common name	Scientific Name	Associated PCTs	Justification	Survey Period	Assessment	Area (ha)
Duramana Fingers	Caladenia attenuata	3367	No suitable habitat is present within associated PCTs in the Subject Land for	October - November	Targeted survey	0.21
Black Gum	Eucalyptus aggregata	3367	the candidate species. The vegetation is significantly degraded due to the use as hospital gardens and managed lawns.	All year	Targeted survey	0.21
Silver-leafed Gum	Eucalyptus pulverulenta	3367	Survey for these species was only carried out due to vegetation surveys	All year	Targeted survey	0.21
Aromatic peppercress	Lepidium hyssopifolium	3367	carried out during optimal survey period for the species therefore a general threatened species surveys was carried	October - December	Targeted survey	0.21
Hoary Sunray	Leucochrysum albicans subsp.	3367	out.	September-April	Targeted survey	0.21
Silky swainson-pea	Swainsona sericea	3367		September - November	Targeted survey	0.21

Table 5.3 Summary of Candidate Species Requiring Further Assessment



5.3 Weather Conditions

Table 5.6 below outlines the weather conditions for the surveys. Rainfall and humidity data is derived from the Bathurst Stanley Street weather station, and temperature data is derived from Bathurst Agricultural Station and obtained from the Bureau of Meteorology (BoM 2024). Weather conditions experienced during surveys considered to be appropriate to ensure detection of target species.

Date/		Daily D	ata			Monthly Data			
Location	Min-Max Temp. (°C)	Rainfall (mm)		Relative Humidity (%)		Min-Max Temp (°C) (mean)	Rainfall (mm) (total)		Relative Humidity (%) (mean)
				9am	3pm		9am		3pm
Bathurst Star	lley Street (Mac	quarie Rive	r) (6328	7), Bath	urst Ag	ricultural Station	n (63005)		
15/11/2023	11.8 - 27.7	0	63	3	0	9.9-25.5	101.0	71	51
16/11/2023	7.8 - 27.3	0	47	2	4				

 Table 5.4
 Weather Conditions During Surveys

5.4 Expert Reports and Use of More Appropriate Local Data

No expert reports were used in place of targeted surveys for the purposes of this assessment. This assessment has also not relied upon alternative data (more appropriate local data) to assess habitat suitability.

5.5 Species Credit Species Results

No species credits species (flora or fauna) were recorded as part of the targeted surveys and overall field surveys, therefore no species polygons are required for threatened flora or fauna species.

5.6 Aquatic Habitats

There are no watercourses mapped within any of the Subject Land and no watercourses are located in adjoining areas that would be directly impacted by the Project.



6.0 Identifying Prescribed Impacts

6.1 Prescribed Impact Assessment

Prescribed impacts are those that may affect biodiversity values in addition to, or instead of, impacts from clearing native vegetation. Clause 6.1 of the BC Regulation defines Prescribed Impacts as:

'The impacts of development on the following habitat of threatened species or ecological communities:

- karst, caves, crevices, cliffs and other geological features of significance
- rocks
- human made structures
- non-native vegetation
- the impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range
- the impacts of development on movement of threatened species that maintains their lifecycle
- the impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and TECs (including from subsidence or upsidence resulting from underground mining or other development)
- the impacts of wind turbine strikes on protected animals
- the impacts of vehicle strikes on threatened species of animals or on animals that are part of a threatened ecological community.

Prescribed impacts which are predicted to occur as a result of the Project works are documented in **Table 6.1**.

Feature	Present	Description of feature characteristics and location	Threatened entities that use, are likely to use, or are part of the habitat feature
Karst, caves, crevices, cliffs, rocks or other geological features of significance	□Yes/ ⊠No	N/A	Not applicable.
Human-made structures	⊠Yes/ □No	Existing buildings that operational sections of the hospital are located throughout the Subject Land. These buildings are relatively new and are still presently used.	Micro bats.

Table 6.1 Prescribed Impacts Identified in the Subject Land



Feature	Present	Description of feature characteristics and location	Threatened entities that use, are likely to use, or are part of the habitat feature
Non-native vegetation	⊠Yes/ □No	Exotic landscape gardens occur within the Subject Land. Species occurring do not provide a significant food resource or other habitat for threatened species.	Threatened Avifauna Grey-headed Flying-fox.
Habitat connectivity	□ Yes/ ⊠No	Very little habitat connectivity persists in the highly urbanised environment of Bathurst township. The subject land occurs proximal to the Macquarie River, with very little vegetation remaining between the subject land and river. The riparian corridor is severely degraded, allowing little connectivity for highly mobile species. There is poor connectivity remaining as remnant street and back yard trees between the subject land and larger area of habitat located to the south-west of the township.	Not applicable.
Waterbodies, water quality and hydrological processes	□Yes/ ⊠No	None present within the Subject Land.	Not applicable.
Wind turbine strikes (wind farm development only)	□Yes/ ⊠No	Not applicable.	Not applicable.
Vehicle strikes	⊠Yes/ □No	The subject land is surrounded by urban roads. This impact is unlikely to be increased significantly by the Project.	Not applicable.



7.0 Avoidance and Minimisation of Impacts

7.1 Avoidance and Minimisation of Direct and Indirect Impacts

The Project will have a relatively minor impact on native vegetation and related biodiversity values across the Subject Land. The current design of the Project requires the extension of existing buildings within an already well-developed landholding. The opportunity to avoid the degraded native vegetation was limited to not only the configuration of the design to integrate the existing building, but also the limitation of the Subject Land where historic buildings are located. The native vegetation is in degraded state that is subject to regular management (mowing) of lawns with scattered planted trees which would continually be managed in this manner. The Project will result in only 2,000 m² of degraded native vegetation being removed.

7.1.1 Project Location, Design and Planning

The Project is to undertake the redevelopment of the Bathurst hospital resulting in the construction of new sections of the hospital. The Project is restricted to the Subject Land and limitation of historic constraints associated with building located within the Subject Land. The design has relied on the location of the existing infrastructure and while the degraded native vegetation was considered the constraints of the landholding have resulted in the current design,

7.2 Avoid and Minimise Prescribed Impacts

The following impacts are considered 'prescribed impacts' under the *Biodiversity Conservation Regulation* 2017:

- impacts on the habitat of threatened species or ecological communities associated with karst, caves, crevices, cliffs and other geological features of significance, rocks, human-made structures or non-native vegetation
- impacts on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range
- impacts on movement of threatened species that maintains their life cycle
- impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities
- impacts of wind turbine strikes on protected animals
- impacts of vehicle strikes on threatened species or on animals that are part of a TEC.

Further detail on the assessment of prescribed impacts is outlined in Section 8.3.



7.2.1 Project Location and Design

Potential prescribed impacts of relevance to the Project route are identified in **Section 6.0** and comprise disturbances to non-native vegetation and part-demolition of operational buildings that have been redesigned to increase the size of the hospital.

These areas of non-native vegetation are not likely to provide habitat of importance to threatened entities. In addition, the human made structures are currently operating sections of the hospital and are not likely to provide habitat for threatened entities such as roosting opportunities as the areas proposed to be demolished are relatively new sections of the hospital and regularly occupied.

Vehicle strike is unlikely to increase as the Subject Land is part of an operating hospital that is bordered on all sides by an urban road network.

7.3 Other Measures Considered

7.3.1 Do Nothing Option

The 'Do Nothing' option is not a viable alternative as the Bathurst Redevelopment is required to service the growing need of the community in the Bathurst region.



8.0 Impact Assessment

8.1 Impacts Associated with the Removal of Native Vegetation, Threatened Ecological Communities, Threatened Species and Their Habitat

8.1.1 Direct Impacts on Native Vegetation and Threatened Ecological Communities

The Project will result in negligible direct impacts on native vegetation and TECs. Direct impacts include the loss of planted exotic/native vegetation as a result of ground disturbance associated with building extensions and alterations to site access.

The direct impacts to native vegetation will include:

• 0.21 ha of PCT 3376 Southern Tableland Grassy Box Woodland – Degraded. This vegetation is commensurate with the State Listed CEEC *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland.*

It is anticipated that up to 22 semi-mature to mature native trees within the Subject Land will be removed (Douglas Arbor, 2024). The Arboricultural Impact Assessment Report notes 23 will be removed, though during Umwelts field surveys, it was identified that five of the trees have already been removed with two of these located in the area assigned to PCT 3376 – Degraded.

Of the 17 remaining native trees to be removed four are within the 2,000 m² of vegetation that has been assigned to PCT 3376 which will be removed as part of the proposal. The remaining trees to be removed are:

- nine in the Landscape Gardens Native
- six in the Landscape Garden Exotic.

Avoidance and mitigation measures associated with minimising the impacts of these direct impacts are discussed in **Section 7.0** above.

The Subject Land which is subject to impacts associated with the proposed hospital redevelopment works are mapped in **Figure 8.1. Table 8.1** summarises the extent of proposed residual direct impacts to native vegetation, the expected impacts to vegetation integrity as a result of the proposed Bathurst hospital redevelopment. A summary of the native trees to be removed in accordance with the The Arboricultural Impact Assessment Report (Douglas Arbor, 20242024) has been provided in **Appendix D**.





Image Source: ESRI Basemap (2024) | Data Source: NSW DFSI (2024), NSWSS (2024), TFNSW (2024), Umwelt (2024)

Direct Impacts to PCTs and

- Subject Land
- Development Footprint
- ---- Watercourse
- Trees

Vegetation mapping

- PCT: 0 Existing Buildings and Hardstand
- PCT: 0 Landscaped Gardens Non Native
- PCT: 0 Landscaped Gardens Native
- PCT: 3376 Southern Tableland Grassy Box Woodland

Threatened Ecological Communities (BC Act)

Hite Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions



Scale 1:1,750 at A4 GDA2020 MGA Zone 55

sibility to any third party



Vegetation Zone	РСТ	Condition	TEC	BC Act	EPBC Act	SAII	Area of Impact (ha)	Change (loss) in VI Score
VZ1	3376 Southern Tableland Grassy Box Woodland	Degraded	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland	CEEC	N/A	Yes	0.21	-9.9

Table 8.1	Summary of Residual Direct Impacts on Nat	ive Vegetation
	Summary of Residual Direct impacts on Nat	ive vegetation

8.1.2 Direct Impacts to Threatened Species

Direct impacts are described in the BAM as those impacts 'on biodiversity values and threatened species habitat that relate to clearing native vegetation and impacts on biodiversity values prescribed by the BC Regulation. This includes impacts from activities related to the construction or operational phase of the proposal'. Within the Subject Land, clearance of native vegetation has presumed to result in complete loss of biodiversity values, with complete loss of individuals occupying that area of vegetation and complete loss of any habitat values.

The vegetation within the Subject Land is of minimal habitat value to any threatened species potentially occurring within the area. The Subject Land does not contain any significant habitat features such as hollow-bearing trees, nests or burrows. All potential threatened flora species were subject to targeted surveys and were not identified as occurring on site.

There will be no direct impacts to threatened species occurring as a result of the proposed hospital redevelopment.

8.2 Indirect Impacts

The Project has the potential to result in negligible indirect impacts on biodiversity values of surrounding lands. In particular minor indirect impacts associated with noise, dust and weeds may occur during construction. These are discussed below in **Table 8.2**.

Impact	Description							
Erosion	Potential impacts associated with erosion and hydrology changes are considered unlikely and the proponent is committed implementing environmental control measures to prevent impacts to surrounding aquatic habitats and native vegetation. Impacts are therefore not expected to be of any level of significance in relation to threatened species, populations and communities.							



Impact	Description
Noise	Construction noise may disrupt the roosting and foraging behaviour of fauna species and reduce the occupancy of areas of suitable habitat. Any impacts resulting from construction noise emissions are likely to be localised and temporary and are not expected to be of any level of significance in relation to threatened species, populations and communities. Operational noise emissions are not expected to have any level of significance in relations and communities.
Weed management	Weed species could be inadvertently brought into the Subject Land with imported materials or could invade naturally through removal of native vegetation. Mitigation measures outlined in Section 8.6 will be implemented to minimise the potential for weed encroachment into areas surrounding the Subject Land.

These potential impacts on biodiversity will be negligible due to the very little suitable habitat within and surrounding the Subject Land. If impacts do our they will vary depending on the type of impact, the duration and frequency of the impact and the ability of the biodiversity features to respond to these changes. However, these indirect impacts are considered to be manageable with appropriate management and mitigation measures that would be formalised through the required management plans, many of which are described in **Section 7.0**. No indirect impacts are expected to occur in relation to surrounding connectivity, corridors or habitat fragmentation, considering the already disturbed nature of the Subject Land the location being within a highly urbanised environment. No indirect impact zones have been identified for this assessment.

8.3 Prescribed Impacts

Prescribed impacts are described in **Section 6.1** and an assessment of potential prescribed impacts is provided in **Table 8.5**.

No threatened entities are considered likely to be dependent upon or may use habitat features associated with any of the prescribed impacts.

Non Native Vegetation				
Threatened entity	Human-made structures and/or non- native vegetation with potential to be habitat	Nature, extent and duration of short and long-term impacts due to removal of structures and/or non- native vegetation	Importance within the bioregion of the habitat to the threatened entity	Consequences of the impacts for the local and bioregional persistence
Threatened bats	The human made structures.	The Hospital has a number of operating buildings across the Subject Land. The buildings proposed to be upgraded are new with limited potential for roosting bats due to the there new build quality and lack of area that provides minimal disturbance of fauna species.	The habitat on site is very minimal, and it is unlikely that any threatened species occurs.	Low consequence.

Table 8.3Potential Impacts on Threatened Entities Associated with Human-Made Structures and
Non-Native Vegetation



Threatened entity	Human-made structures and/or non- native vegetation with potential to be habitat	Nature, extent and duration of short and long-term impacts due to removal of structures and/or non- native vegetation	Importance within the bioregion of the habitat to the threatened entity	Consequences of the impacts for the local and bioregional persistence
Highly mobile threatened birds, fruit bats	Non native vegetation.	The non native vegetation present on the Subject Land may provide poor foraging habitat for highly mobile threatened species such as flying foxes or medium to large birds.	The vegetation on site is not likely to produce a significant food resource for either threatened birds or fruit bats. The non – native vegetation is dominated by elm and pine trees which provide minimal nectar resources, and do not produce fruit suitable for fruit bats. The Callery pear onsite may provide minimal food resource for fruit bats passing through the area.	Low consequence.

8.4 Aquatic Impacts

The Subject Land will not impact any aquatic habitats.

8.5 Impacts to Matters of National Environmental Significance

A referral is required under the EPBC Act for actions that are likely to have a significant impact on Matters of National Environmental Significance (MNES).

MNES include:

- World heritage properties
- National heritage places
- Wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed)
- Nationally threatened species and ecological communities
- Migratory species
- Commonwealth marine areas
- The Great Barrier Reef Marine Park
- Nuclear actions
- Water resources.



The following considerations have been undertaken to determine whether a referral is likely to be required for the Project, in accordance with the EPBC Act Significant Impact Guidelines (DoE 2013).

A Protected Matters Search has been completed with a 5 km buffer around the proposed Subject Land. The Protected Matters Search Report is included in **Appendix C**.

The Protected Matters Search Report has identified that the Subject Land is not within or adjacent to a world heritage property, national heritage place, wetland of international importance, Commonwealth marine area or the Great Barrier Reef Marine Park. The Project is also not a nuclear action and is not likely to impact a water resource in relation to coal seam gas or coal mining.

The Protected Matters Search Report has identified two threatened ecological communities within 5 km of the Subject Land. Site floristic surveys did not identify the presences of threatened ecological community after assessing the vegetation against the condition criteria for the CEEC Grassy Box Woodland in accordance with the Conservation advice for the TEC.

The Protected Matters Search Report has identified 40 threatened species as may, likely or known to occur within 5 km of the Subject Land. The list of threatened species with potential to occur has been further refined through the application of the Biodiversity Assessment Method, which refines candidate species by plant community type, IBRA Subregion and patch size.

Detailed surveys for threatened species have been undertaken, as documented within this Report and the likelihood of occurrence table in **Appendix C** no nationally listed threatened species were observed or likely to occur within the Subject Land.

The Protected Matters Search Report has identified eight listed migratory species as may, likely or known to occur within 5 km of the Subject Land. Detailed surveys for listed migratory species have been undertaken in conjunction with the threatened species surveys documented within this Report, **Appendix C,** no nationally listed migratory species were observed or likely to occur within the Subject Land.

8.6 Mitigating Residual Impacts – Management Measures and Implementation

The limited impacts to biodiversity values (direct and indirect) will require the preparation of general mitigation measures to be implemented through the construction period of the Project. A Construction Environmental Management Plan (CEMP) will be prepared for the Project with the aim that the following mitigation measures be included for the protection of biodiversity values.

The CEMP will describe the avoidance, mitigation and management measures that will be undertaken to manage potential environmental impacts of the Project. The following specific control measures are recommended for the mitigation of impacts on the biodiversity features of the Subject Land:

- A pre-clearing procedure will be implemented to minimise the potential for impacts on native fauna species (focusing on threatened species) as a result of the clearing of trees. The pre-clearing procedure is designed to minimise impacts to any threatened species that may have established nests in trees proposed to be removed.
- Weed management.



- Fencing and access control to protect retained trees adjacent to the Development Footprint.
- Erosion and sedimentation control.
- Replacement of native canopy species

8.6.1 Pre-clearance Surveys

Pre-clearance surveys are to be undertaken prior to tree felling works, be undertaken by suitably qualified and experienced persons/personnel and include:

- The demarcation of areas approved for clearing to reduce risk of accidental clearing.
- Habitat resources and habitat trees should be identified and marked (Note: habitat trees are those containing hollows, cracks or fissures and spouts, active nests, dreys or other signs of recent fauna usage.

8.6.2 Tree Felling Supervision

Tree felling will be completed as close to the completion of pre-clearance surveys as practicable to limit the potential for new issues to arise (such as new active nests being built). Tree felling supervision will be undertaken by an appropriately qualified and experienced person after pre-clearance surveys have identified potential habitat features.

The tree-felling process will include the following:

- Prior to Felling Habitat Trees:
 - Completion of actions recommended from the pre-clearing surveys, including (but not limited to) salvage of identified habitat features, additional surveys to determine threatened fauna usage of the area (if required), identification of active dens or burrows, any actions required to discourage fauna occupation and weed or feral fauna management requirements.
 - Removal of non-habitat trees/vegetation as close to the habitat tree felling date as possible in order to create disturbance to discourage fauna usage of the habitat trees.
- On the Day of Felling Habitat Trees:
 - All habitat trees will be subject to a visual inspection to survey for threatened species.
 - Trees previously identified as containing fauna will be shaken and then felled, providing no threatened species are identified.
 - If a threatened species is identified in a habitat tree on the day of felling, the supervising person is to advise the most appropriate method to minimise potential harm. This may include leaving the tree overnight, further tapping the trunk with an excavator to encourage the animal to vacate the tree, gradual removal of branches to discourage ongoing use, or measures to capture and relocate the animal to secure habitats.
 - Uninjured animals should be released on the day of capture into nearby suitable secure habitat and should not be held for extended periods of time.



- Injured animals will be taken to the nearest veterinary clinic or wildlife carer as soon as possible for assessment and treatment.
- Felled trees are to be rolled where appropriate so that the number of hollows blocked against the ground is minimised.
- All felled habitat trees should remain in place for a least one night to allow any remaining fauna to escape.
- Habitat features identified for translocation or salvage operations should be extracted and stored appropriately.

8.6.3 Water Management

Water management measures consistent with the APGA Code of Environmental Practice (2017) will be employed during the construction of the Project. Measures committed by the proponent will be implemented to manage and mitigate water resource impacts during the Project.

8.6.4 Weed Management

Weed species could be inadvertently brought into the Subject Land or surrounding areas with imported materials. All machinery and equipment will be cleaned thoroughly prior to entering the Subject Land. Cleaning must include the removal of all mud and plant matter, followed by washing with high pressure water.

8.6.5 Fencing and Access Control

During construction, all tree protection zones (TPZ) will be established and maintained until Project completion. This will ensure no further loss of trees outside the Development Footprint.

8.6.6 Erosion and Sediment Control

Management and mitigation measures for soil and contamination will be detailed in the to be prepared Soil and Water Management Plan (SWMP). The SWMP will be developed and included in the CEMP.

8.6.7 Replacement of Native Tree species

It is proposed that all 17 native trees that are to be removed as part of the Project will be replaced with a 2:1 ratio of native tree species consistent with PCT 3376 throughout the retained Landscaped Garden-Native areas. The trees will be maintained up until establishment ensuring 34 trees are established before the completion of the Project.



8.6.8 Preparation and Implementation of Construction Environmental Management Plan

A Construction Environmental Management Plan (CEMP) will be developed for the Project, which documents the environmental impact mitigation, performance targets and monitoring requirements for the construction and operational phases of the Project. A summary of measures and timing measures proposed by the proponent to mitigate impacts relating to biodiversity (on the Subject Land), including the timing, action and outcome of these measures, is provided in **Table 8.6** below.



Table 8.4 Summary of Proposed Mitigation and Management Measures for Residual Impacts (Direct, Indirect, and Prescribed)

Mitigation Measure	Method/ Technique	Timing	Frequency	Responsibility	Likely Efficacy
Ecologist pre-clearance surveys and supervision of works. To determine if any threatened species have established in the area (stick nests)	Minimisation of impacts to local fauna and their habitats through identification of fauna present and management to minimise harm.	Minimisation of impacts to local fauna and their habitats through identification of fauna present and management to minimise harm.	Prior to and during site clearing.	Site Manager and Project Ecologist	Site Manager and Project Ecologist
Water management	Water management and mitigation measures will be outlined in a Soil and Water Management Plan (SWMP).	Construction.	For the life of the Project.	Site Manager	Measure is likely to achieve intended outcome
Weed management	Targeted spraying to suppress weed invasion.	All stages of the Project.	As needed.	Site Manager/ Project Ecologist	Measure is likely to achieve intended outcome
Fencing and access control	Installation of fencing and signage to limit impacts on retained trees adjacent to the Development Footprint.	During operation.	For the life of the Project.	Site Manager	Measure is likely to achieve intended outcome
Erosion and sedimentation control	Installation and maintenance of appropriate erosion and sediment controls and work practices.	Prior to and during civil works until permanent controls such as sediment basins are installed and established.	Temporary erosion and sediment controls would be installed prior to commencement of construction and permanent measures such as stormwater detention basins would be maintained for the life of the development.	Site Manager	Measure is likely to achieve intended outcome



Mitigation Measure	Method/ Technique	Timing	Frequency	Responsibility	Likely Efficacy
Preparation and Implement of Construction Environmental	Develop plan to adequately manage environmental impacts during construction including	To prepared prior to the commencement of works and implemented for all	For the life of the Project.	Proponent/ Site Manager	Measure is likely to achieve intended outcome
Management Plan	weed management and erosion and sediment control.	construction works and for the life of the development as necessary.			

Implementation details for the proposed impact mitigation and management measures are provided in **Table 8.7**.

Mitigation Measure	Monitoring and Evaluation Strategy	Performance Criteria	Adaptive Management Threshold	Adaptive Management Response
Ecologist pre-clearance surveys and supervision of works	Reporting on preclearance surveys and works supervision to be undertaken by Project Ecologist.	Completion of proposed works.	Completion of clearing works without project ecologist supervision.	Breaches to be reported in annual compliance reporting to DPE.
Water management	Monitoring to be undertaken in accordance with requirements of a Soil and Water Management Plan (SWMP).	Water management measures consistent with APGA Code of Environmental Practice (2017) during construction.	Monitoring detects lack or failure of meeting requirements of APHA Code of Environmental Practice.	Breaches to be reported in annual compliance reporting to DPE.
Weed management	Monitoring to be undertaken in accordance with requirements of Construction Environmental Management Plan.	Weed growth to be continually suppressed within the Subject Land area.	Monitoring detects increasing weed infestations which are not being suppressed.	Alternative methods or herbicides to be used to achieve success.
Fencing and access control	Monitoring to be undertaken in accordance with requirements of Construction Environmental Management Plan.	All retained trees are protected and no evidence of damage.	Repair or upgrade to fencing and signage.	Fencing design to be improved to achieve effectiveness.

Table 8.5Implementation Details for the Proposed Impact Mitigation and Management Measures



Mitigation Measure	Monitoring and Evaluation Strategy	Performance Criteria	Adaptive Management Threshold	Adaptive Management Response
Erosion and sedimentation control	Monitoring to be undertaken in accordance with requirements of Construction Environmental Management Plan.	Temporary erosion and sediment controls to be installed prior to works. Permanent controls to be maintained for the life of the development.	Monitoring detects lack or failure of required temporary or permanent erosion and sediment controls.	Breaches to be reported in annual compliance reporting to DPE.
Preparation and Implement of Construction Environmental Management Plan	Implementation to be supervised by Project Ecologist or suitable environmental consultant with regular reporting to DPE during construction.	Completion of all proposed environmental protection works and monitoring inspections.	Monitoring detects breach or failure to implement Construction Environmental Management Plan.	Breach to be included in annual compliance reporting to DPE.


9.0 Serious and Irreversible Impacts

Under the BC Act, a determination of whether an impact is serious and irreversible must be made in accordance with the principles prescribed in the BC Regulation. The principles have been designed to capture those impacts which are likely to contribute significantly to the risk of extinction of a threatened species or ecological community in NSW.

These are impacts that:

- will cause a further decline of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline, or
- will further reduce the population size of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very small population size, or
- impact on the habitat of a species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very limited geographic distribution, or
- impact on a species or ecological community that is unlikely to respond to measures to improve habitat and vegetation integrity and is therefore irreplaceable.

The *Guidance to Assist a Decision-Maker to Determine a Serious and Irreversible Impact* (DPIE 2019a) and the TBDC was reviewed to determine the SAII candidates relevant to the assessment.

9.1 Additional Impact Assessment Provisions for Threatened Species at Risk of an SAII

No threatened species recorded within the Subject Land are listed as SAII entities and no further assessment has been undertaken.

9.2 Additional Impact Assessment Provisions for TECs at Risk of an SAII

An impact is to be regarded as serious and irreversible if it is likely to contribute significantly to the risk of a threatened species or ecological community becoming extinct if:

- it will cause a further decline of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline, or
- it will further reduce the population size of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very small population size, or
- the impact on the habitat of a species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very limited geographic distribution, or
- the impact on a species or ecological community that is unlikely to respond to measures to improve habitat and vegetation integrity and is therefore irreplaceable.



Table 9.1 outlines the details of the White Box – Yellow Box – Blakely's Red Gum Grassy Woodland CEECwithin the Subject Land. **Table 6.1** identified the area and condition of the White Box – Yellow Box –Blakely's Red Gum Grassy Woodland that will be impacted by the Project which is shown in detail in**Figure 4.3**.

Table 9.1	Direct Impacts on SAII Entities
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Plant Community Type	Area within the Subject Land (ha)
VZ1: Southern Tableland Grassy Box Woodland – Degraded	0.21
Total White Box – Yellow Box – Blakely's Red Gum Grassy Woodland CEEC impacted	0.21

White Box – Yellow Box – Blakely's Red Gum Grassy Woodland CEEC is listed a listed SAII Entity. This community is present within the Development Footprint and has been assessed further in **Table 9.2** and **Table 9.3** against the principles of SAII communities in accordance with Section 9.1.1 of the BAM.



Criteria	Assessment										
evidence of reduction in geographic distributi	vidence of reduction in geographic distribution (Principle 1, clause 6.7(2)(a) BC Regulation) presented by an estimate of the:										
evidence of reduction in geographic distribution distribution (Principle 1, clause 6.7(2)(a) BC Regulation) as the current total geographic extent of the TEC in NSW AND the estimated reduction in geographic extent of the TEC since 1970 (not including impacts of the proposal)	The community has undergone a very large historical reduction in geographic distribution and has experienced disruption of biotic processes of relative severity >90% over more than 90% of its distribution since 1750 (NSW TSSC 2020). This ecological community has been heavily cleared across most of its range. The remaining extent of the ecological community is highly fragmented, occurring in small, isolated patches within a cleared environment, or within a landscape of other disturbed woodlands. The available data shows that over 90% of the original extent of this ecological community has been cleared (Table 5). Of the remaining area, a large proportion of it has been modified and occurs as trees over a predominantly exotic understorey. The Committee judged that less than 5% of the original extent of the ecological community remains of sufficient condition and size to be included in the listed ecological community, having undergone a decline of 95% or more (NSW TSSC 2020). The current estimate of this CEEC in NSW is 250,729 ha, with approximately 93% having been cleared since 1750 (NSW TSSC 2020). There is no single map of fine thematic scale that encompasses either the present or pre-1750 extent across the entire distribution of the community (NSW TSSC 2020).										
	A total of 0.21 ha of the Box Gum Woodland CEEC in low condition with the understorey managed as lawn.										

Table 9.2 SAII Assessment – Current Geographic Distribution



Criteria	Assessment									
extent of reduction in ecological function for clause 6.7(2)(b) BC Regulation) indicated by:	xtent of reduction in ecological function for the TEC using evidence that describes the degree of environmental degradation or disruption to biotic processes (Principle 2, lause 6.7(2)(b) BC Regulation) indicated by:									
 i. change in community structure ii. change in species composition iii. disruption of ecological processes iv. invasion and establishment of exotic species v. degradation of habitat, and vi. fragmentation of habitat 	In general, the diversity of understorey flora species has decreased across the range of the ecological community, primarily as a result of grazing and pasture improvement. Clearing the understorey for cropping and cultivated pasture eliminates the native species, including any soil stored seed, preventing the re-establishment of a native understorey without assistance. As a result of this, very few patches with a predominantly native understorey remain. Understorey species diversity has also been lost, and continues to be lost, through the effects of the severe fragmentation. If population sizes are too small, the local extinction of species from a patch can occur at random. Small areas are also more susceptible to weed invasion. In addition, many of the remaining areas in best condition occur on linear reserves such as travelling stock routes and road reserves. While these linear remnants are important for conservation, they are particularly prone to invasion by weeds (NSW TSSC 2020).									
evidence of restricted geographic distribution	(Principle 3, clause 6.7(2)(c) BC Regulation):									
based on the TEC's geographic range in NSW according to the: i. extent of occurrence ii. area of occupancy, and iii. number of threat-defined locations	Commonwealth Threatened Species Scientific Committee (TSSC) (2023) has stated: The extent of occurrence of this ecological community is very large, notwithstanding that it has undergone a severe decline in area of occupancy due to both clearing and degradation. It is difficult to ascertain the current area of the ecological community as defined. There is no doubt that this ecological community is subject to ongoing threats across its range. These include further clearing, deterioration of remnant condition and degradation of the landscape in which remnants occur. Of particular concern is the threat posed to some of the highest quality remnants, on Travelling Stock Routes and Reserves, through the increasing trend of converting intermittent grazing regimes to more intensive or set stocking regimes. While this ecological community is subject to demonstrable, ongoing threats, there is insufficient data to determine the current degree of these threats across the dispersed remnants of this ecological community. There is also insufficient data to accurately determine its current area (NSW TSSC 2020).									
	However, it is known to occur within NSW in the Brigalow Belt South, Nandewar, New England Tableland, Sydney Basin, NSW North Coast, South Eastern Highlands, South East Corner, NSW South Western Slopes and Riverina Bioregions. The TEC is also known to occur in the South Eastern Queensland Bioregion in Queensland and the Victorian Midlands Bioregion in Victoria.									



Criteria	Assessment
evidence that the TEC is unlikely to respond to management (Principle 4, clause 6.7(2)(d) BC Regulation)	The Threatened Biodiversity Data Collection (TBDC) for this TEC is data deficient in terms of response to management, however the management actions are listed, and there is nothing to suggest that the TEC would not respond to these actions if they were undertaken. These are:
	 Undertaking control of feral fauna.
	 Managing stock to reduce grazing pressure.
	Do not harvest firewood from remnants.
	• Leave fallen timber on the ground.
	• Erect on site markers to alert maintenance staff to the high-quality remnant.
	• Encourage regeneration by fencing remnants, controlling grazing and undertaking supplementary planting where necessary.
	Undertake weed control.
	Protect all sites from further clearing and disturbance.
	Ensure remnants remain connected or linked (or re-establish links).
	Mark remnants onto maps and use to plan activities.
Where the TBDC indicates data is 'unknown' or 'data deficient' for a TEC for a criterion listed in Subsection 9.1.1(2.), the assessor must record this in the BDAR or BCAR	The TBDC does not indicate the data for the TEC is unknown or data deficient.



Table 9.3 SAII Assessment – Impact Assessment

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

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

 i. in hectares, and ii. as a percentage of the current geographic extent of the TEC in NSW. Data and information should include direct impacts (i.e. from clearing) and indirect impacts where partial loss of the TEC is likely as a result of the proposal. The assessor should consider for example, changes to fire regime (frequency, severity), hydrology, pollutants, species interactions (increased competition, changes to pollinators or dispersal), fragmentation, increased edge effects and 	Current estimated extent of the TEC in NSW is 250,729 ha, with a total of 2,000 m ² proposed to be impacted as part of the Project. This minor area of low condition vegetation would result in <0.0000035% reduction of the estimated current extent in NSW. The total area of Box Gum Woodland within the Subject Land includes 2,300 m ² of very low condition grassland with scattered canopy trees that are relatively young and planted as part of landscaping works. This equates to 91% of impacts to the CEEC. The vegetation is considered low condition which based on the VI score of 9.9. In accordance with Section 9.2.1(1)(a) of the BAM, offsets do not need to be calculated for vegetation condition zones with a VI score of <15.								
disease, pathogens and parasites, which are likely to contribute to the loss of flora and/or fauna species characteristic of the TEC.	Vegetation Zone	PCT ID	Condition	Area (ha)	VI Score				
	VZ1	PCT 3367 Southern Tableland Grassy Woodland	Low condition	0.21	9.9				
	The 2,100 m ² of low condition vegetation is grassland with scattered canopy trees that are relatively young and planted as part of landscaping works which is managed as lawn.								
The extent that the proposed impacts are likely to contribute to further environmental degradation or the disruption of biotic processes (Principle 2) of the TEC by: i. estimating the size of any remaining, but now isolated, areas of the TEC; including areas of the TEC within 500 m of the Subject Land	Less than 10% of the original distribution of the CEEC is likely to have avoided structural changes (TSSC 2020). As such, the CEEC now occurs in a heavily fragmented and isolated form. Using regional mapping it is estimated that there is 51 ha of Box Gum Woodland (excluding DNG) in the 1,500 m Assessment Area around the Subject Land. The Box Gum Woodland (degraded condition) to be removed by the project is 2,100 m ² . The remaining areas of Box Gum Woodland surrounding the								
or equivalent area for other types of proposals ii. describing the impacts on connectivity and fragmentation of the remaining areas of TEC measured by:	Subject Lands exist in an already fragmented state due to the long history of agricultural land use. The Project will not remove entire patches of Box Gum Woodland, but rather will impact partly on already fragmented patch (small patch 2,100 m ²).								
• distance between isolated areas of the TEC, presented as the average distance if the remnant is retained AND the average									



In relation to the impacts from the proposal on the species at risk of a	n SAII, the assessor mus	t include data and	information on:						
• estimated maximum dispersal distance for native flora species characteristic of the TEC, and	<i>Cynodon dactylon</i> (Couch grass) with only a small number of other native forbs persisting with a number of exotic grasses that in Chillian needle grass.								
 the information relevant to describing the impact on connectivity and fragmentation, such as the area to perimeter ratio for remaining areas of the TEC as a result of the development 	As discussed above it has been assumed that total loss of all vegetation within the Development Footprint.								
the development iii. describing the condition of the TEC according to the vegetation	Vegetation Zone	V.I Score	Composition	Structure	Function				
integrity score for the relevant vegetation zone(s) (Section 4.3). The assessor must also include the relevant composition, structure and function condition scores for each vegetation zone.	VZ1 3376 Degraded	9.9	2.2	47	9.6				
The assessor may also provide new information that demonstrates that the principle identifying that the TEC is at risk of an SAII is not accurate.	Not applicable.								



10.0 Impact Summary

10.1 Determining an Offset Requirement for Impacts

10.1.1 Impacts on Native Vegetation and TECs (Ecosystem Credits)

The degraded nature of the native vegetation within the Development Footprint has resulted in a VI Score of <15 therefore no biodiversity credits were generated for the vegetation zone PCT 3376 -Degraded. **Table 10.1** shows the vegetation integrity scores and attributes summaries.

Vegetation Zone	PCT Name	TEC (BC Act)	lmpact Area (ha)	Current VI Score	Future VI Score	Change in VI Score	Biodiversity Risk Weighting	Ecosystem Credits Required
VZ1 3376- Degraded	PCT3376: Southern Tablelands Grassy Woodland	Yes	0.21	9.9	0	-9.9	2.5	0

 Table 10.1
 Impacts that Require an Offset – Ecosystem Credits

10.1.2 Impacts on Threatened Species and Their Habitat (Species Credit)

No threatened species will be impacted by the Project therefore no species polygon or associated offset liability has been generated from the Project.

10.2 Impacts that Do Not Need Further Assessment

Under Section 10.1 of the BAM, impacts to areas of land without native vegetation do not require further assessment. The Development Footprint contains 0.27 ha of Landscaped Gardens – Native and 0.2 ha of Landscaped Gardens – Non-native. These areas do not require assessment under the BAM and do not require offsetting. **Figure 10.1** show the areas assigned as Landscaped Gardens within the Development Footprint that do not require assessment in accordance with Section 10.1 of the BAM.





Thresholds for assessing and offsetting impacts Legend

- Subject Land
- Development Footprint
- Vegetation Not Requiring Offset
- Road
- Watercourse

Trees

Vegetation mapping

- PCT: 0 Existing Buildings and Hardstand
- PCT: 0 Landscaped Gardens Non Native
- PCT: 0 Landscaped Gardens Native
- PCT: 3376 Southern Tableland Grassy Box Woodland

Threatened Ecological Communities (BC Act)

White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions



Scale 1:1,750 at A4 GDA2020 MGA Zone 55



11.0 Biodiversity Credit Obligations

The is no biodiversity credit obligations associated with the Project. Biodiversity Credit Reports have been provided in **Appendix F** showing no credit obligations.



12.0 References

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B1.1 BAM Plot Data

Plot	Zone	Easting	Northing	Bearing	Comp Tree	Comp Shrub	Comp Grass	Comp Forbs	Comp Ferns	Comp Other	Struc Tree	Struc Shrub	Struc Grass	Struc Forbs	Struc Ferns	Struc Other	Fun Large Trees	Fun Hollow trees	Fun Litter Cover	Fun Len Fallen Logs	Fun Tree Stem 5to9	Fun Tree Stem10to19	Fun Tree	Fun Tree Stem 30 – 49	Fun Tree Stem 50 – 79	Fun Tree Regen	Fun High Threat Exotic
t1	55	739 310	630 067 3	337 .65	1	0	1	1	0	0	2.0	0.0	85. 0	0.1	0.0	0.0	0	0	7.0	0.0	0	2	1	0	0	0	8.0



B1.2 BAM Plot Floristics

Species Name	Cover Score	Abundance Score	Growth Form
Avena barbata	2	200	Introduced
Heliotropium amplexicaule	5	250	Introduced
Eucalyptus melliodora	2	1	Tree (TG)
Juniperus spp.	0.2	1	Introduced
Cedrus atlantica	2	2	Introduced
Wahlenbergia stricta	0.1	2	Forb (FG)
Cotoneaster glaucophyllus	1	2	Introduced
Convolvulus sabatius	0.1	2	Introduced
Plantago lanceolata	0.1	25	Introduced
Cynodon dactylon	85	2500	Grass & grasslike (GG)
Vulpia spp.	5	150	Introduced
Nassella neesiana	2	100	Introduced



B1.3 Native tree species to be removed in Development Footprint

Tree #	Tree Species	Vegetation Zone	Current Status
4	Eucalyptus globulus	Landscaped Garden -Native	Present
5	Eucalyptus globulus	Landscaped Garden -Native	Present
6	Casuarina cunninghamiana	N/A	Removed
7	Eucalyptus Blakelyi	PCT 3376-Degraded	Present
12	Brachychiton populenus	Landscaped Garden -Non Native	Present
14	Brachychiton populenus	Landscaped Garden -Non Native	Present
19	Eucalyptus melliodora	PCT 3376-Degraded	Present
20	Eucalyptus sideroxylon	PCT 3376-Degraded	Present
21	Eucalyptus sideroxylon	N/A	Removed
22	Eucalyptus sideroxylon	N/A	Removed
23	Eucalyptus sideroxylon	N/A	Removed
25	Casuarina cunninghamiana	N/A	Removed
26	Eucalyptus melliodora	PCT 3376	Present
27	Eucalyptus sideroxylon	Landscaped Garden -Native	Present
28	Eucalyptus sideroxylon	Landscaped Garden -Native	Present
29	Eucalyptus Blakelyi	Landscaped Garden -Native	Present
77	Eucalyptus melliodora	Landscaped Garden -Native	Present
78	Eucalyptus stelluata	Landscaped Garden -Non Native	Present
83	Eucalyptus sideroxylon	Landscaped Garden -Native	Present
84	Eucalyptus polyanthemos	Landscaped Garden -Native	Present
85	Eucalyptus polyanthemos	Landscaped Garden -Native	Present
95	Brachychiton populenus	Landscaped Garden -Non Native	Present





C1.1 Likelihood of Occurrence Table

Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Fish									
Bidyanus bidyanus	Silver Perch	Vulnerable (FM Act)	N/A	Endangered	0	PMST (2024)	Silver Perch are a moderate to large freshwater fish native to the Murray-Darling river system. They were once widespread and abundant throughout most of the Murray- Darling river system. They have now declined to low numbers or disappeared from most of their former range. Only one remaining secure and self-sustaining population occurs in NSW in the central Murray River downstream of Yarrawonga weir, as well as several anabranches and tributaries.	None - no suitable habitat within subject land	None
Maccullochella macquariensis	Trout Cod	Endangered (FM Act)	N/A	Endangered	0	PMST (2024)	The Trout Cod is endemic to the southern Murray-Darling river system, including the Murrumbidgee and Murray Rivers, and the Macquarie River in central NSW. The species was once widespread and abundant in these areas but has undergone dramatic declines in its distribution and abundance over the past century. The last known reproducing population of Trout Cod is confined to the Murray River below Yarrawonga downstream to Tocumwal.	None - no suitable habitat within subject land	None
Maccullochella peelii	Murray Cod	Protected	N/A	Endangered	0	PMST (2024)	Occurs throughout the Murray-Darling Basin. Can live in a wide range of habitats, from clear, rocky streams in the upper western slopes regions of New South Wales to the slow flowing, turbid rivers and billabongs of the western plains. Generally, they are found in waters up to 5m deep and in sheltered areas with cover from rocks, timber or overhanging banks. The presence of wood debris has been shown to be the primary factor determining Murray cod presence.	None - no suitable habitat within subject land	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Macquaria australasica	Macquarie Perch	Endangered (FM Act)	N/A	Vulnerable	0	PMST (2024)	Occurs in the upper reaches of the Lachlan, Murrumbidgee and Murray Rivers, and in parts of the Hawkesbury and Shoalhaven catchment areas. Inhabits river and lake habitats, especially the upper reaches of rivers and their tributaries. Requires clear water with deep, rocky holes and abundant cover (including aquatic vegetation, woody debris, large boulders and overhanging banks). Spawning occurs in spring and summer in shallow upland streams or flowing sections of river systems.	None - no suitable habitat within subject land	None
Frogs									
Litoria aurea	Green and Golden Bell Frog	Endangered	Species	Vulnerable	0, 7	BAM-C (Candidate), BioNet (2023)	Since 1990 there have been approximately 50 recorded locations of Green and Golden Bell Frog in NSW, most of which are small, coastal, or near coastal populations. These locations occur over the species' former range, however they are widely separated and isolated. Large populations in NSW are located around the metropolitan areas of Sydney, Shoalhaven and mid north coast (one an island population). There is only one known population on the NSW Southern Tablelands. The species inhabits marshes, dams and stream-sides, particularly those containing bullrushes (Typha spp.) or spikerushes (Eleocharis spp.). Optimal habitat includes water-bodies that are unshaded, free of predatory fish such as Plague Minnow (Gambusia holbrooki), have a grassy area nearby and diurnal sheltering sites available. Some sites the species has been recorded in, occur in highly disturbed areas.	Low - no suitable habitat within the subject land	None
Litoria booroolongens is	Booroolong Frog	Endangered	Species	Endangered	0, 23, 0	BAM-C (Candidate), BioNet (2023), PMST (2024)	The Booroolong Frog is restricted to NSW and north- eastern Victoria, predominantly along the western-flowing streams of the Great Dividing Range. It has disappeared from much of the Northern Tablelands, however several populations have recently been recorded in the Namoi catchment. The species is rare throughout most of the remainder of its range. Live along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses. Adults occur on or near cobble banks and other rock structures within stream margins.	Low - no suitable habitat within the subject land	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Litoria castanea	Yellow- spotted Tree Frog	Critically Endangered	Species	Critically Endangered	0, 1, 0	BAM-C (Candidate), BioNet (2023), PMST (2024)	There is only a single known population of the species, which occurs on the Southern Tablelands. Require large permanent ponds or slow flowing streams with plenty of emergent vegetation such as bulrushes. The species is also found in ponds or slow moving streams with overhanging grassy banks in the absence of reed beds. The study area is not within the known distribution of this species.	Low - no suitable habitat within the subject land	None
Litoria raniformis	Southern Bell Frog	Endangered	Species	Vulnerable	0	BAM-C (Candidate)	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. A few yet unconfirmed records have also been made in the Murray Irrigation Area in recent years. The species is also found in Victoria, Tasmania and South Australia, where it has also become endangered. Usually found in or around permanent or ephemeral Black Box/Lignum/Nitre Goosefoot swamps, Lignum/Typha swamps and River Red Gum swamps or billabongs along floodplains and river valleys. They are also found in irrigated rice crops, particularly where there is no available natural habitat.	Low - no suitable habitat within the subject land	None
Birds									
Actitis hypoleucos	Common sandpiper	Protected	N/A	Migratory, Marine, Bonn, CAMBA, JAMBA, ROKAMBA	0	PMST (2024)	Does not breed in Australia. When in Australia it is found on all coastlines and in inland areas, but is concentrated in the north and west with important areas in WA, the NT and Qld. Utilises a wide range of coastal and inland wetlands with varying salinity levels.	Low - no wetland habitat within the subject land	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Anseranas semipalmata	Magpie Goose	Vulnerable	Ecosystem	Not Listed	3	BioNet (2023)	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. Since the 1980s there have been an increasing number of records in central and northern NSW. Vagrants can follow food sources to south-eastern NSW. Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. Equally at home in aquatic or terrestrial habitats; often seen walking and grazing on land; feeds on grasses, bulbs and rhizomes. Activities are centred on wetlands, mainly those on floodplains of rivers and large shallow wetlands formed by run-off; breeding can occur in both summer and winter dominated rainfall areas and is strongly influenced by water level; most breeding now occurs in monsoonal areas; nests are formed in trees over deep water; breeding is unlikely in south-eastern NSW.	Low - no wetland habitat within the subject land	None
Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Species/ Ecosystem	Critically Endangered	0, 10, 0	BAM-C (Predicted and Candidate), BioNet (2023), PMST (2024)	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south- east Australia. Birds are also found in drier coastal woodlands and forests in some years. Once recorded between Adelaide and the central coast of Queensland, its range has contracted dramatically in the last 30 years to between north-eastern Victoria and south-eastern Queensland. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests.	Low - the habitat within the subject land is urbanised and fragmented, the lawns are mowed regularly thus decreasing the availability of the species foods	None
Aphelocephala leucopsis	Southern whiteface	Vulnerable	N/A	Vulnerable	0	PMST (2024)	#N/A	Low - habitat within subject land is marginal	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Apus pacificus	Fork-tailed Swift	Protected	N/A	Migratory, Marine, CAMBA, JAMBA, ROKAMBA	3, 0	BioNet (2023), PMST (2024)	Recorded in all regions of NSW. Non- breeding, and almost exclusively aerial while in Australia. Occurs over urban and rural areas as well as areas of native vegetation.	Low - species unlikely to utilise the subject land as its primarily aerial whilst in Australia	None
Artamus cyanopterus cyanopterus	Dusky Woodswallo w	Vulnerable	Ecosystem	Not Listed	0, 10	BAM-C (Predicted), BioNet (2023)	The Dusky Woodswallow is widespread from the coast to inland, including the western slopes of the Great Dividing Range and farther west. It is often recorded in woodlands and dry open sclerophyll forests, and has also been recorded in shrublands, heathlands regenerating forests and very occasionally in moist forests or rainforests. The understorey is typically open with sparse eucalypt saplings, acacias and other shrubs, often with coarse woody debris. It is also recorded in farmland, usually at the edges of forest or woodland or in roadside remnants or wind breaks with dead timber. The nest is an open shallow untidy cup frequently built in an open hollow, crevice or stump. Although Dusky Woodswallows have large home ranges, individuals may spend most of their time in about a 2 ha range and defend an area about 50 m around the nest. Dusky Woodswallows prefer larger remnants over smaller remnants. Competitive exclusion by Noisy Miners (Manorina melanocephala) is a significant threat to this species.	Low - no mistletoes were observed.	None
Botaurus poiciloptilus	Australasian Bittern	Endangered	Ecosystem	Endangered	0, 0	BAM-C (Predicted), PMST (2024)	Australasian Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. The Species favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (Typha spp.) and spikerushes (Eleocharis spp.), it hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails. The species may construct feeding platforms over deeper water from reeds trampled by the bird; platforms are often littered with prey remains.	Low - there is no fallen timber within the subject land	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Burhinus grallarius	Bush Stone- curlew	Endangered	Species	Not Listed	0	BAM-C (Candidate)	The Bush Stone-curlew is found throughout Australia except for the central southern coast and inland, the far south-east corner, and Tasmania. Only in northern Australia is it still common however and in the south-east it is either rare or extinct throughout its former range. Inhabits open forests and woodlands with a sparse grassy groundlayer and fallen timber. Nest on the ground in a scrape or small bare patch.	#N/A	#N/A
Calidris acuminata	Sharp-tailed Sandpiper	Protected	N/A	Migratory, Marine, Bonn, CAMBA, JAMBA, ROKAMBA	2, 0, 0	BioNet (2023), PMST (2024), PMST (2024)	Spends the non-breeding season in Australia with small numbers occurring regularly in New Zealand. Most of the population migrates to Australia, mostly to the south-east and are widespread in both inland and coastal locations and in both freshwater and saline habitats. Many inland records are of birds on passage. In Australasia, prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. Breeds in northern Siberia.	Low - no wetland habitat within the subject land	None
Calidris ferruginea	Curlew Sandpiper	Endangered	Species/ Ecosystem	Critically Endangered	0, 0	PMST (2024), PMST (2024)	The Curlew Sandpiper is distributed around most of the Australian coastline (including Tasmania). It occurs along the entire coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray- Darling Basin. Inland records are probably mainly of birds pausing for a few days during migration. The Curlew Sandpiper breeds in Siberia and migrates to Australia (as well as Africa and Asia) for the non-breeding period, arriving in Australia between August and November, and departing between March and mid-April. It generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes inland.	Low - no wetland habitat within the subject land	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Calidris melanotos	Pectoral sandpiper	Protected	N/A	Migratory, Marine, Bonn, JAMBA, ROKAMBA	0	PMST (2024)	In NSW, the Pectoral Sandpiper is widespread, but scattered. Records exist east of the Great Divide, from Casino and Ballina, south to Ulladulla. West of the Great Divide, the species is widespread in the Riverina and Lower Western regions. The species prefers shallow fresh to saline wetlands. The species is usually found in coastal or near coastal habitat but occasionally found further inland. It prefers wetlands that have open fringing mudflats and low, emergent or fringing vegetation, such as grass or samphire. The species has also been recorded in swamp overgrown with lignum. They forage in shallow water or soft mud at the edge of wetlands.	Low - no wetland habitat within the subject land	None
Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Species/Ec osystem	Endangered	0, 8, 0	BAM-C (Predicted and Candidate), BioNet (2023), PMST (2024)	The Gang-gang Cockatoo is distributed from southern Victoria through south- and central-eastern New South Wales. In New South Wales, the Gang-gang Cockatoo is distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south- west slopes. It occurs regularly in the Australian Capital Territory. It is rare at the extremities of its range, with isolated records known from as far north as Coffs Harbour and as far west as Mudgee. In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In autumn and winter, the species often moves to lower altitudes in drier more open eucalypt forests and woodlands,particularly box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas. May also occur in sub-alpine Snow Gum (Eucalyptus pauciflora) woodland and occasionally in temperate rainforests. Favours old growth forest and woodland attributes for nesting and roosting. Nests are located in hollows that are 10 cm in diameter or larger and at least 9 m above the ground in eucalypts.	Low - species is infrequently recorded and subject land occurs outside species important habitat	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Calyptorhynch us lathami lathami	South- eastern Glossy Black- Cockatoo	Vulnerable	Species/Ec osystem	Vulnerable	0, 1, 0	BAM-C (Predicted and Candidate), BioNet (2023), PMST (2024)	#N/A	#N/A	#N/A
Chthonicola sagittata	Speckled Warbler	Vulnerable	Ecosystem	Not Listed	0, 2	BAM-C (Predicted), BioNet (2023)	The Speckled Warbler has a patchy distribution throughout south-eastern Queensland, the eastern half of NSW and into Victoria, as far west as the Grampians. The species is most frequently reported from the hills and tablelands of the Great Dividing Range, and rarely from the coast. The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area.	Low - not recorded within the locality. The species may occasionally forage in the subject land.	None
Circus assimilis	Spotted Harrier	Vulnerable	Ecosystem	Not Listed	0, 6	BAM-C (Predicted), BioNet (2023)	Occurs throughout the Australian mainland, except in densely forested or wooded habitats of the coast, escarpment and ranges. Individuals disperse widely in NSW and comprise a single population. Occurs in grassy open woodland including Acacia and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands. Preys on terrestrial mammals (eg bandicoots, bettongs, and rodents), birds and reptile, occasionally insects and rarely carrion. Builds a stick nest in a tree and lays eggs in spring (or sometimes autumn), with young remaining in the nest for several months.	Moderate - species may hunt within the subject land on occasion	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Ecosystem	Not Listed	0, 2, 0	BAM-C (Predicted), BioNet (2023), PMST (2024)	Endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges. Mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and River Red Gum (Eucalyptus camaldulensis) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses. Sedentary, considered to be resident in many locations throughout its range; present in all seasons or year-round at many sites; territorial year-round. Up to 80% of the diet is comprised of ants; other invertebrates (including spiders, insects larvae, moths, beetles, flies, hemipteran bugs, cockroaches, termites and lacewings) make up the remaining percentage; nectar from Mugga Ironbark (Eucalyptus sideroxylon) and paperbarks, and sap from an unidentified eucalypt are also eaten. Hollows in standing dead or live trees and tree stumps are essential for nesting. Breeds in pairs or co-operatively in territories which range in size from 1.1 to 10.7 ha (mean = 4.4 ha).	Low - no suitable hollows were observed. The species may hunt within the subject land on occasion.	None
Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Ecosystem	Not Listed	0, 1	BAM-C (Predicted), BioNet (2023)	The Varied Sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands. Distribution in NSW is nearly continuous from the coast to the far west. The Varied Sittella's population size in NSW is uncertain but is believed to have undergone a moderate reduction over the past several decades. Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth- barked gums with dead branches, mallee and Acacia woodland. Feeds on arthropods gleaned from crevices in rough or decorticating bark, dead branches, standing dead trees and small branches and twigs in the tree canopy.	Low - the subject land lacks sufficient structure, including mature trees for the species.	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Epthianura albifrons	White- fronted Chat	Vulnerable	Ecosystem	Not Listed	1	BioNet (2023)	The White-fronted Chat is found across the southern half of Australia, from southernmost Queensland to southern Tasmania, and across to Western Australia as far north as Carnarvon. Found mostly in temperate to arid climates and very rarely sub-tropical areas, it occupies foothills and lowlands up to 1000 m above sea level. In NSW, it 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. Along the coastline, it is found predominantly in saltmarsh vegetation but also in open grasslands and sometimes in low shrubs bordering wetland areas. Gregarious species, usually found foraging on bare or grassy ground in wetland areas, singly or in pairs. They are insectivorous, feeding mainly on flies and beetles caught from or close to the ground.	Low - no wetland habitat within the subject land	None
Falco hypoleucos	Grey Falcon	Vulnerable	Ecosystem	Vulnerable	0	PMST (2024)	The Grey Falcon is sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. The breeding range has contracted since the 1950s with most breeding now confined to arid parts of the range. There are possibly less than 5000 individuals left. Population trends are unclear, though it is believed to be extinct in areas with more than 500mm rainfall in NSW. Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. Also occurs near wetlands where surface water attracts prey.	Low - the subject land lacks arid and semi-arid habitats, wetlands and watercourses. The species ocurrence within the subject land is considered vagrant.	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Falco subniger	Black Falcon	Vulnerable	Ecosystem	Not Listed	0, 4	BAM-C (Predicted), BioNet (2023)	Mostly occurring inland NSW. Inhabits woodland, shrubland and grassland in arid and semi-arid zones including agricultural land with scattered remnant trees. Usually associated with wetlands as they look for prey, and use standing dead trees to use as lookout posts. Habitat choice is often influenced by food availability.	Low - the subject land lacks arid and semi-arid habitats, wetlands and watercourses. The species may hunt within the subject land on occasion, although is considered more likely to hunt along the Macquarie River.	None
Gallinago hardwickii	Latham's Snipe, Japanese Snipe	Protected		Migratory, Marine, Bonn, JAMBA, ROKAMBA	2, 0, 0	BioNet (2023), PMST (2024), PMST (2024)	Latham's Snipe is a non-breeding migrant to the south east of Australia including Tasmania, passing through the north and New Guinea on passage. Latham's Snipe breed in Japan and on the east Asian mainland. Latham's Snipe are seen in small groups or singly in freshwater wetlands on or near the coast, generally among dense cover. They are found in any vegetation around wetlands, in sedges, grasses, lignum, reeds and rushes and also in saltmarsh and creek edges on migration. They also use crops and pasture.	Low - no wetland habitat within the subject land.	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Glossopsitta pusilla	Little Lorikeet	Vulnerable	Ecosystem	Not Listed	0	BAM-C (Predicted)	The Little Lorikeet is distributed widely across the coastal and Great Divide regions of eastern Australia from Cape York to South Australia. NSW provides a large portion of the species' core habitat, with lorikeets found westward as far as Dubbo and Albury. Nomadic movements are common, influenced by season and food availability, although some areas retain residents for much of the year and 'locally nomadic' movements are suspected of breeding pairs. The species forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity.	Low - infrequently recorded in the locality and the habitat within and adjacent to the subject land is poor, highly urbanised and fragmented	None
Grantiella picta	Painted Honeyeater	Vulnerable	Ecosystem	Vulnerable	0, 0	BAM-C (Predicted), PMST (2024)	Nomadic, occurring in low densities across most of NSW. Highest concentrations and almost all breeding occur on inland slopes of the Great Dividing Range. Inhabits Boree, Brigalow and Box Gum woodlands and Box-Ironbark forests. Specialist forager on the fruits of mistletoes, preferably of the Amyema genus. Nests in outer tree canopy. A specialist feeder on the fruits of mistletoes growing on woodland eucalypts and acacias. Prefers mistletoes of the genus Amyema.	Low - the habitat within the subject land is urbanised and fragmented, the lawns are mowed regularly thus decreasing the availability of the species foods	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Haliaeetus Ieucogaster	White- bellied Sea- Eagle	Vulnerable	Species/Ec osystem	Not Listed	0	BAM-C (Predicted and Candidate)	Distributed along the Australian coastline and well inland along rivers and wetlands, it's widespread in eastern NSW. Foraging habitat consists of coastal seas, rivers, fresh and saline lakes, lagoons, reservoirs and terrestrial habitats such as grasslands. Diet consists of waterbirds, turtles and fish. Resident pairs are territorial and occupy nesting territories of hundreds of hectares. Breeding habitat consists of large trees within mature open forest, gallery forest or woodland and reported that they avoid nesting near urban areas. Nest trees are typically large emergent eucalypts and often have emergent dead branches or large dead trees nearby which are used as 'guard roosts'. Nests are large structures built from sticks and lined with leaves or grass.	Low - no nests were observed. The species may hunt within the subject land on occasion.	None
Hieraaetus morphnoides	Little Eagle	Vulnerable	Species/Ec osystem	Not Listed	0, 7	BAM-C (Predicted and Candidate), BioNet (2023)	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW. Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used.	Low - no nests were observed. The species may hunt within the subject land on occasion.	None
Hirundapus caudacutus	White- throated Needletail	Not Listed	Ecosystem	Vulnerable	0, 1, 0, 0	BAM-C (Predicted), BioNet (2023), PMST (2024), PMST (2024)	The White-throated Needletail is widespread in eastern and south-eastern Australia. In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. A large proportion of the White-throated Needletails of the nominate subspecies would occur in Australia as non- breeding visitors. Most White-throated Needletails spend the non-breeding season in Australasia, mainly in Australia, and occasionally in New Guinea and New Zealand, though it has been suggested that some may overwinter in parts of South-East Asia. As the Needletails that occur in Australia migrate from breeding areas in the Northern Hemisphere, they would be affected by global threats.	Low - the species was not observed, although it may forage over the subject land on occasion	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Lathamus discolor	Swift Parrot	Endangered	Species/Ec osystem	Critically Endangered	0, 1, 0	BAM-C (Predicted and Candidate), BioNet (2023), PMST (2024)	Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany Eucalyptus robusta, Spotted Gum Corymbia maculata, Red Bloodwood C. gummifera, Mugga Ironbark E. sideroxylon, and White Box E. albens. Commonly used lerp infested trees include Inland Grey Box E. microcarpa, Grey Box E. moluccana and Blackbutt E. pilularis.	Low - the subject land does not contain the species' preferred habitat features	None
Leipoa ocellata	Malleefowl	Endangered	Ecosystem	Vulnerable	0	PMST (2024)	Occurs in semi-arid to arid mallee country in the south- west of NSW. Its NSW stronghold is centred on Mallee Cliffs NP, extending east to Balranald and with scattered records north to Mungo NP. There are also populations near Dubbo (Goonoo forest). Occasional records exist from the Pilliga, around Cobar and Goulburn River NP. Predominantly inhabit mallee communities, preferring the tall, dense and floristically-rich mallee found in higher rainfall (300 - 450 mm mean annual rainfall) areas. Utilises mallee with a spinifex understorey, but usually at lower densities than in areas with a shrub understorey. Less frequently found in other eucalypt woodlands, such as Inland Grey Box, Ironbark or Bimble Box Woodlands with thick understorey, or in other woodlands such dominated by Mulga or native Cypress Pine species. Prefers areas of light sandy to sandy loam soils and habitats with a dense but discontinuous canopy and dense and diverse shrub and herb layers.	None - the subject land is outside species range	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Lophoictinia isura	Square- tailed Kite	Vulnerable	Species/Ec osystem	Not Listed	0	BAM-C (Predicted and Candidate)	The Square-tailed Kite ranges along coastal and subcoastal areas from south-western to northern Australia, Queensland, NSW and Victoria. In NSW, scattered records of the species throughout the state indicate that the species is a regular resident in the north, north-east and along the major west-flowing river systems. It is a summer breeding migrant to the south-east, including the NSW south coast, arriving in September and leaving by March. The species is found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses. In arid north-western NSW, it has been observed in stony country with a ground cover of chenopods and grasses, open acacia scrub and patches of low open eucalypt woodland.	Low - not recorded within the locality. The species may occasionally forage in the subject land.	None
Melanodryas cucullata cucullata	South- eastern Hooded Robin	Endangered	Ecosystem	Endangered	0, 0	BAM-C (Predicted), PMST (2024)	The Hooded Robin is widespread, found across Australia, except for the driest deserts and the wetter coastal areas - northern and eastern coastal Queensland and Tasmania. However, it is common in few places, and rarely found on the coast. It is considered a sedentary species, but local seasonal movements are possible. The south-eastern form (subspecies cucullata) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies picata. Two other subspecies occur outside NSW. Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.	#N/A	#N/A



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Melithreptus gularis gularis	Black- chinned Honeyeater (eastern subspecies)	Vulnerable	Ecosystem	Not Listed	0, 2	BAM-C (Predicted), BioNet (2023)	Extends south from central Queensland, through NSW, Victoria into south eastern South Australia, though it is very rare in the last state. In NSW it is widespread, with records from the tablelands and western slopes of the Great Dividing Range to the north-west and central-west plains and the Riverina. It is rarely recorded east of the Great Dividing Range, although regularly observed from the Richmond and Clarence River areas. It has also been recorded at a few scattered sites in the Hunter, Central Coast and Illawarra regions, though it is very rare in the latter. Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (Eucalyptus sideroxylon), White Box (E. albens), Inland Grey Box (E. microcarpa), Yellow Box (E. melliodora), Blakely's Red Gum (E. blakelyi) and Forest Red Gum (E. tereticornis).	#N/A	#N/A
Monarcha melanopsis	Black-faced monarch	Protected		Migratory, Marine, Bonn	0	PMST (2024)	Widespread in eastern Australia. Occurs mainly in rainforest ecosystems, but can also inhait eucalypt woodlands, coastal scrub and damp gullies. It may be found in more open woodland when migrating (BA, 2017). Summer breeding migrant to south-east. Generally nests near the top of trees with large leaves, in the tops of small saplings, or in lower shrubs and are generally well concealed by foliage and secured in a three-pronged fork.	Low - habitat within subject land is marginal	None
Motacilla flava	Western Yellow Wagtail	Protected		Migratory, Marine, CAMBA, JAMBA, ROKAMBA	0	PMST (2024)	The Yellow Wagtail breeds in temperate Europe and Asia. They occur within Australia in open country habitat with disturbed ground and some water. Recorded in short grass and bare ground, swamp margins, sewage ponds, saltmarshes, playing fields, airfields, ploughed land and town lawns.	Low - habitat within subject land is marginal	None



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Myiagra cyanoleuca	Satin flycatcher	Protected		Migratory, Marine, Bonn	0	PMST (2024)	In NSW widespread on and east of the Great Divide, sparsely scattered on the western slopes, very occasional records on the western plains. Inhabit heavily vegetated gullies in eucalypt-dominated forests and taller woodlands, often near wetlands and watercourses. On migration, occur in coastal forests, woodlands, mangroves and drier woodlands and open forests. Generally not in rainforests. Prefer to nest in a fork of outer branches of trees, such as paperbarks, eucalypts, and banksia. Where they breed at elevations of more than 600 m above sea level in south-eastern Australia, they breed from November to early January (Frith 1969). mainly insectivorous, preying on arthropods, mostly insects, although very occasionally they will also eat seeds. They are arboreal foragers, feeding high in the canopy and subcanopy of trees.	Low - habitat within subject land is marginal	None
Neophema chrysostoma	Blue-winged parrot	Vulnerable		Vulnerable	0	PMST (2024)	#N/A	Low - subject land is outside breeding region for species and provides poor foraging resources	None


Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Ninox connivens	Barking Owl	Vulnerable	Species/Ec osystem	Not Listed	0, 1	BAM-C (Predicted and Candidate), BioNet (2023)	The Barking Owl is found throughout continental Australia except for the central arid regions. The owls sometimes extend their home range into urban areas, hunting birds in garden trees and insects attracted to streetlights. Extensive wildfires in 2019-20 reduced habitat quality further, burnt many old, hollow-bearing trees needed as refuge by prey species and reduced the viability of some regional owl populations. The species inhabit 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 (e.g. western NSW) due to the higher density of prey found on these fertile riparian soils. The species typically roost in shaded portions of tree canopies, including tall midstorey trees with dense foliage such as Acacia and Casuarina species.	Low - no suitable hollows were observed. The species may forage within the subject land on occasion.	None
Ninox strenuo	Powerful Owl	Vulnerable	Species/Ec osystem	Not Listed	0, 1	BAM-C (Predicted and Candidate), BioNet (2023)	The Powerful Owl is endemic to eastern and south-eastern Australia, mainly on the coastal side of the Great Dividing Range from Mackay to south-western Victoria. In NSW, it is widely distributed throughout the eastern forests from the coast inland to tablelands, with scattered records on the western slopes and plains suggesting occupancy prior to land clearing. Now at low densities throughout most of its eastern range, rare along the Murray River and former inland populations may never recover. The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. The Powerful Owl requires large tracts of forest or woodland habitat but can occur in fragmented landscapes as well. The species breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. It roosts by day in dense vegetation comprising species such as Turpentine Syncarpia glomulifera, Black She-oak Allocasuarina littoralis, Blackwood Acacia melanoxylon, Rough-barked Apple Angophora floribunda, Cherry Ballart Exocarpus cupressiformis and a number of eucalypt species.	#N/A	#N/A



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Petroica boodang	Scarlet Robin	Vulnerable	Ecosystem	Not Listed	0	BAM-C (Predicted)	The Scarlet Robin is found from south east Queensland to south east South Australia and also in Tasmania and south west Western Australia. In NSW, it occurs from the coast to the inland slopes. After breeding, some Scarlet Robins disperse to the lower valleys and plains of the tablelands and slopes. Some birds may appear as far west as the eastern edges of the inland plains in autumn and winter. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea- tree swamps.	Low - the habitat within the subject land is urbanised and fragmented, the lawns are mowed regularly thus decreasing the availability of the species foods	None
Petroica phoenicea	Flame Robin	Vulnerable	Ecosystem	Not Listed	0, 4	BAM-C (Predicted), BioNet (2023)	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. It is likely that there are two separate populations in NSW, one in the Northern Tablelands, and another ranging from the Central to Southern Tablelands. Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. The groundlayer of the breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense.	#N/A	#N/A
Phaethon rubricauda	Red-tailed Tropicbird	Vulnerable	Species	Not Listed	1	BioNet (2023)	A marine bird which Breeds in coastal cliffs and under bushes in tropical Australia. Nests on cliffs of the northern hills and southern mountains on the main island at Lord Howe Island. Vagrant birds occur in coastal NSW waters, and occasionally even inland, particularly after storm events.	Low - species requires habitat that includes cliffs or cavities/fissur es facing the sea. Unlikely to utilise the subject land	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Polytelis swainsonii	Superb Parrot	Vulnerable	Species/Ec osystem	Vulnerable	2, 0	BioNet (2023), PMST (2024)	The Superb Parrot is found throughout eastern inland NSW. On the South-western Slopes their core breeding area is roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west. Birds breeding in this region are mainly absent during winter, when they migrate north to the region of the upper Namoi and Gwydir Rivers. The other main breeding sites are in the Riverina along the corridors of the Murray, Edward and Murrumbidgee Rivers where birds are present all year round. In the Riverina the birds nest in the hollows of large trees (dead or alive) mainly in tall riparian River Red Gum Forest or Woodland. On the South West Slopes nest trees can be in open Box-Gum Woodland or isolated paddock trees. Species known to be used are Blakely's Red Gum, Yellow Box, Apple Box and Red Box. Inhabit Box-Gum, Box- Cypress-pine and Boree Woodlands and River Red Gum Forest.	Low - the species breeds in southern NSW and Victoria, therefore its presence in the subject land would unlikely be for the purpose of breeding. There are no suitable hollows for this species to breed.	None
Pycnoptilus floccosus	Pilotbird	Not Listed		Vulnerable	0	PMST (2024)	#N/A	Low - the subject land lacks suitable habitat for the species	None
Rhipidura rufifrons	Rufous fantail	Protected		Migratory, Marine, Bonn	0	PMST (2024)	Found along NSW coast and ranges. Inhabits rainforest, dense wet forests, swamp woodlands and mangroves. During migration, it may be found in more open habitats or urban areas (BA, 2017). Forages mainly in the low to middle strata of forests, sometimes in or below the canopy or on the ground; insectivorous. Breeds from about September to February. A small cup-shaped nest made from grass, roots, fine strips of bark, plant-fibre, decayed wood, moss and spider web is placed in a tree, shrub or vine, between 0.34–6.0 m above the ground, the average height being 1.6 m (Higgins et al. 2006). Nests are placed in a wide variety of plant species, including Blackberries (Rubus fruticosa), Musk Daisybush (Olearia argophylla), eucalypts and other genera.	Low - habitat within subject land is marginal	None



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Rostratula australis	Australian Painted Snipe	Endangered	Ecosystem	Endangered	1, 0	BioNet (2023), PMST (2024)	In NSW many records of the Australian Painted Snipe are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella. Other important locations with recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. The species prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber.	Low - no wetland habitat within the subject land.	None
Stagonopleura guttata	Diamond Firetail	Vulnerable	Ecosystem	Not Listed	0, 7, 0	BAM-C (Predicted), BioNet (2023), PMST (2024)	The Diamond Firetail is endemic to south-eastern Australia, extending from central Queensland to the Eyre Peninsula in South Australia. It is widely distributed in NSW, with a concentration of records from the Northern, Central and Southern Tablelands, the Northern, Cental and South Western Slopes and the North West Plains and Riverina. Not commonly found in coastal districts, though there are records from near Sydney, the Hunter Valley and the Bega Valley. This species has a scattered distribution over the rest of NSW, though is very rare west of the Darling River. Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. Often found in riparian areas (rivers and creeks), and sometimes in lightly wooded farmland.	Low - no suitable hollows were observed. The species may hunt within the subject land on occasion.	None



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Tyto novaehollandia e	Masked Owl	Vulnerable	Species/Ec osystem	Not Listed	0	BAM-C (Predicted and Candidate)	The Masked Owl occurs from the coast where it is most abundant to the western plains. Overall records for this species fall within approximately 90% of NSW, excluding the most arid north-western corner. There is no seasonal variation in its distribution. This species lives in dry eucalypt forests and woodlands from sea level to 1100 m an often hunts along the edges of forests, including roadsides. Roosts and breeds in moist eucalypt forested gullies, using large tree hollows or sometimes caves for nesting.	Low - infrequently recorded in the locality and the habitat within and adjacent to the subject land is poor, highly urbanised and fragmented, and lacks important components of species habitat	None
Flora									
Bossiaea fragrans	Bossiaea fragrans	Critically Endangered	Species	Critically Endangered	1	BioNet (2023)	Currently only known from the Abercrombie Karst Conservation Reserve, south of Bathurst on the NSW central tablelands. It is highly restricted, with only a small number of known populations. Occurs on spilite, rhyolite or slate and volcanic substrates and is often associated with Red Stringybark (Eucalyptus macrorhyncha) - Red Box (Eucalyptus polyanthemos) woodland +/- White Box (Eucalyptus albens).	Low - highly modified habitat due to pre- existing development	None - species not found within subject land
Caladenia attenuata	Duramana Fingers	Critically Endangered	Species	Critically Endangered	0, 0	BAM-C (Candidate), PMST (2024)	Caladenia attenuata is endemic to NSW. It has a highly restricted distribution, having been recorded from 2 localities within the Bathurst Ilford region with an area of occupancy estimated to be 8 square kilometres. Recent surveys have only found an unconfirmed specimen from the Ilford site.	Low - species distribution does not coincide with the subject land	None - species not found within the subject land



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Dichanthium setosum	Bluegrass	Vulnerable	Species	Vulnerable	0	PMST (2024)	Occurs on the New England Tablelands, North-west Slopes and Plains and the Central-west Slopes. Associated with heavy basaltic black soils and red-brown loams with clay subsoil. Often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. Appears to have wide environmental tolerances.	Low - the frequent disturbance of lawn maintenance is likely to preclude the species presence in the subject land	None
Eucalyptus aggregata	Black Gum	Vulnerable	Species	Vulnerable	0, 2	BAM-C (Candidate), BioNet (2023)	Black Gum is found in the NSW Central and Southern Tablelands, with small isolated populations in Victoria and the ACT. In NSW it occurs in the South Eastern Highlands Bioregion and on the western fringe of the Sydney Basin Bioregion. Black Gum has a moderately narrow distribution, occurring mainly in the wetter, cooler and higher parts of the tablelands, for example in the Blayney, Crookwell, Goulburn, Braidwood and Bungendore districts. Grows on alluvial soils, on cold, poorly-drained flats and hollows adjacent to creeks and small rivers. Grows in the lowest part of the landscape.	Low - species distribution does not coincide with the subject land	None - species not found within the subject land
Eucalyptus pulverulenta	Silver-leafed Gum	Vulnerable	Species	Vulnerable	0, 7, 0	BAM-C (Candidate), BioNet (2023), PMST (2024)	The Silver-leafed Gum is a distinctively wattle-like, straggly mallee or small tree to about 10 m tall. This species grows in shallow soils as an understorey plant in open forest, typically dominated by Brittle Gum, Red Stringybark, Broad-leafed Peppermint, Silvertop Ash and Apple Box. The Silver-leafed Gum is found in two quite separate areas, the Lithgow to Bathurst area and the Monaro (Bredbo, Bombala areas).	Low - the subject land lacks naturally occuring understorey with the exception of planted native/exotic gardens	None - species not found within the subject land



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Euphrasia arguta	Euphrasia arguta	Critically Endangered	Species	Critically Endangered	0	PMST (2024)	Euphrasia arguta was rediscovered in the Nundle area of the NSW north western slopes and tablelands in 2008. Prior to this, it had not been collected for 100 years. Historically, Euphrasia arguta has only been recorded from relatively few places within an area extending from Sydney to Bathurst and north to Walcha. The Royal Botanic Gardens Specimen Register records an additional location reported and vouchered in 2002 from near the Hastings River; and Euphrasia arguta was also recorded from the Barrington Tops in 2012. Historic records of the species noted the following habitats: 'in the open forest country around Bathurst in sub humid places', 'on the grassy country near Bathurst', and 'in meadows near rivers'.	Low - highly modified habitat due to pre- existing development	0
Euphrasia scabra	Rough Eyebright	Endangered	Species	Not Listed	1	BioNet (2023)	There are ten old herbarium collections of Rough Eyebright from NSW (including Port Jackson, Bathurst Plains, Lake George, Jindabyne, Yarrangobilly Caves and Tumbarumba). The species is regarded as extinct in South Australia. There is one population in Tasmania and seven in Victoria. There are three extant populations in NSW: Bondi State Forest, South East Forests National Park and near Nunnock Swamp. Total NSW population is between 250 and 500 plants. This number varies with season with few plants appearing in some years. Occurs in or at the margins of swampy grassland or in sphagnum bogs, often in wet, peaty soil.	Low - highly modified habitat due to pre- existing development	None - species not found within subject land
Grevillea divaricata	Grevillea divaricata	Endangered	Species	Not Listed	1	BioNet (2023)	#N/A	Low - highly modified habitat due to pre- existing development	None - species not found within subject land



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Lepidium aschersonii	Spiny Peppercress	Vulnerable	Species	Vulnerable	0	PMST (2024)	Not widespread, occurring in the marginal central-western slopes and north-western plains regions of NSW (and potentially the south western plains). In the north of the State recent surveys have recorded a number of new sites including Brigalow Nature Reserve, Brigalow State Conservation Area, Leard State Conservation Area and Bobbiwaa State Conservation Area. Also known from the West Wyalong in the south of the State. Records from Barmedman and Temora areas are likely to be no longer present. Approximately 50% of the total Lepidium aschersonii recorded for Australia occurs in NSW. Found on ridges of gilgai clays dominated by Brigalow (Acacia harpophylla), Belah (Casuarina cristata), Buloke (Allocasuarina luehmanii) and Grey Box (Eucalyptus microcarpa). In the south has been recorded growing in Bull Mallee (Eucalyptus behriana). Often the understorey is dominated by introduced plants. The species grows as a a component of the ground flora, in grey loamy clays. Vegetation structure varies from open to dense, with sparse grassy understorey and occasional heavy litter.	Low - the subject land does not support the species habitat	None
Lepidium hyssopifolium	Aromatic Peppercress	Endangered	Species	Endangered	0, 6, 0	BAM-C (Candidate), BioNet (2023), PMST (2024)	Currently known near Bathurst and Bungendore, with historic records near Armidale. Grows on light to heavy, often friable clay loams, often in highly modified environments amongst exotic pasture grasses and weeds. Requires bare ground to establish.	Moderate - highly modified habitat due to pre- existing development	None - species not found within the subject land
Leucochrysum albicans subsp. Tricolor	Hoary Sunray	Endangered	Species	Endangered	0, 0	BAM-C (Candidate), PMST (2024)	#N/A	Low - species distribution does not coincide with the subject land	None - species not found within the subject land



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Persoonia marginata	Clandulla Geebung	Vulnerable	Species	Vulnerable	1	BioNet (2023)	The Clandulla Geebung occurs between Kandos and Clarence in the western Blue Mountains. Populations are largely disjunct and include Clandulla, Ben Bullen and Sunny Corner State Forests; isolated populations have also been recorded from Turon and Gardens of Stone National Parks. Grows in dry sclerophyll forest and woodland communities on sandstone.	Low - highly modified habitat due to pre- existing development	None - species not found within subject land
Swainsona recta	Small Purple-pea	Endangered	Species	Endangered	0	PMST (2024)	Small Purple-pea was recorded historically from places such as Carcoar, Culcairn and Wagga Wagga where it is probably now extinct. Populations still exist in the Queanbeyan and Wellington-Mudgee areas. Over 80% of the southern population grows on a railway easement. It is also known from the ACT and a single population of four plants near Chiltern in Victoria. Before European settlement Small Purple-pea occurred in the grassy understorey of woodlands and open-forests dominated by Blakely's Red Gum Eucalyptus blakelyi, Yellow Box E. melliodora, Candlebark Gum E. rubida and Long-leaf Box E. goniocalyx. Grows in association with understorey dominants that include Kangaroo Grass Themeda australis, poa tussocks Poa spp. and spear-grasses Austrostipa spp.	Low - the frequent disturbance of lawn maintenance is likely to preclude the species presence in the subject land	None
Swainsona sericea	Silky Swainson- pea	Vulnerable	Species	Not Listed	0, 3	BAM-C (Candidate), BioNet (2023)	Silky Swainson-pea has been recorded from the Northern Tablelands to the Southern Tablelands and further inland on the slopes and plains. There is one isolated record from the far north-west of NSW. Its stronghold is on the Monaro. Also found in South Australia, Victoria and Queensland. Found in Natural Temperate Grassland and Snow Gum Eucalyptus pauciflora Woodland on the Monaro.Found in Box-Gum Woodland in the Southern Tablelands and South West Slopes.	Low - the subject land is frequently maintained and, as such, is unlikely to support the species	None - species not found within the subject land
Thesium australe	Austral Toadflax	Vulnerable	Species	Vulnerable	0	PMST (2024)	Found in small, scattered populations along the east coast, northern and southern tablelands. Occurs in grassland or grassy woodland, and is often found in association with Kangaroo Grass.	Low - subject land lacking the species' preferred host plant	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Veronica blakelyi	Veronica blakelyi	Vulnerable	Species	Not Listed	1	BioNet (2023)	Restricted to the western Blue Mountains, near Clarence, near Mt Horrible, on Nullo Mountain and in the Coricudgy Range. Occurs in eucalypt forest, often in moist and sheltered areas. Associated canopy species include Eucalyptus dives, E. dalrympleana, E. rossii and E. pauciflora. Flowering occurs in late spring to early summer.	Low - highly modified habitat due to pre- existing development	None - species not found within subject land
Zieria obcordata	Granite Zieria	Endangered	Species	Endangered	1, 0	BioNet (2023), PMST (2024)	Occurs at two sites with a geographic range of 105 km. These are in the Wuuluman area near Wellington, comprising of a single subpopulation over 3 sites comprising 209 plants and Crackerjack Rock/Rock Forests area NW of Bathurst, with a subpopulation comprising of 14 sites, totaling to approximately 700 adults plants. Grows in eucalypt woodland or shrubland dominated by species of Acacia on rocky hillsides. Also occurs in Eucalyptus and Callitris dominated woodland with an open, low shrub understorey, on moderately steep, mainly west to north-facing slopes in sandy loam amongst granite boulders. The altitude range of sites is 500 to 830 metres	Low - highly modified habitat due to pre- existing development	None - species not found within subject land
Insects		ł						1	
Keyacris scurra	Key's Matchstick Grasshopper	Endangered	Species	Not Listed	0	BAM-C (Candidate)	The Key's Matchstick Grasshopper is typically found in native grassland in cemeteries, travelling stock routes and along railway easements. There appears to be some association with Kangaroo Grass and known food plants such as species of the Asteraceae family, however, the species has also been recorded at sites where these species are absent. The Key's Matchstick Grasshopper has recently been recorded in a wider range of vegetation types than previously known. These include wet sclerophyll forest, montane low forest, dry woodlands, heath land and montane grasslands. As this species is a flightless grasshopper, these records most likely indicate a resident population (rather than dispersing individuals). The species appears to be absent from site that are disturbed during the short non-overlapping lifecycle of the species.	Low - the subject land is frequently maintained and, as such, is unlikely to support the species	Low - the subject land is frequently maintained and, as such, is unlikely to support the species



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Mammals									
Cercartetus nanus	Eastern Pygmy- possum	Vulnerable	Species	Not Listed	0	BAM-C (Candidate)	The Eastern Pygmy-possum is found in south-eastern Australia, from southern Queensland to eastern South Australia and in Tasmania. In NSW it extents from the coast inland as far as the Pilliga, Dubbo, Parkes and Wagga Wagga on the western slopes. Found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest.	Low - species is not recorded in the locality and the habitat within the subject land is fragmented from larger stands that would support a population of the species	None
Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Species	Vulnerable	0, 1, 0	BAM-C (Candidate), BioNet (2023), PMST (2024)	The Large-eared Pied Bat is found mainly in areas with extensive cliffs and caves, from Rockhampton in Queensland south to Bungonia in the NSW Southern Highlands. It is generally rare with a very patchy distribution in NSW. There are scattered records from the New England Tablelands and North West Slopes. The species roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (Petrochelidon ariel), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. It is found in well-timbered areas containing gullies.	Low - No maternity or day camps were identified in the subject land, however the species may forage in the Subject Land on occasion	Low



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Dasyurus maculatus	Spotted- tailed Quoll	Vulnerable	Ecosystem	Endangered	0, 7, 0	BAM-C (Predicted), BioNet (2023), PMST (2024)	The range of the Spotted-tailed Quoll has contracted considerably since European settlement. It is now found in eastern NSW, eastern Victoria, south-east and north- eastern Queensland, and Tasmania. Only in Tasmania is it still considered relatively common. The species has been recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. Females occupy home ranges of 200-500 hectares, while males occupy very large home ranges from 500 to over 4000 hectares. Are known to traverse their home ranges along densely vegetated creeklines.	Low - the fragmented habitat within the subject land is unlikely to provide sufficient cover for the species to traverse its range. The species was not found within the subject land	None
Miniopterus orianae oceanensis	Large Bent- winged Bat	Vulnerable	Species/Ec osystem	Not Listed	0, 9	BAM-C (Predicted and Candidate), BioNet (2023)	Large Bentwing-bats occur along the east and north-west coasts of Australia. The species use caves as the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures.	Low - the species is infrequently recorded and the buildings proposed for modification are relatively new with few locations for bats to roost.	Low



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
<i>Myotis</i> <i>macropus</i>	Southern Myotis	Vulnerable	Species	Not Listed	1	BioNet (2023)	The Southern Myotis is mainly coastal but may occur inland along large river systems. Usually associated with permanent waterways at low elevations in flat/undulating country, usually in vegetated areas. Forages over streams and watercourses feeding on fish and insects from the water surface. Roosts in a variety of habitats including caves, mine shafts, hollow-bearing trees, stormwater channels, buildings, under bridges and in dense foliage, typically in close proximity to water.	Low - the species is infrequently recorded and the buildings proposed for modification are relatively new with few locations for bats to roost. There is no foraging habitat within the subject land	Low
Petauroides volans	Southern Greater Glider	Endangered	Species	Endangered	0	PMST (2024)	The greater glider is restricted to eastern Australia, occurring from the Windsor Tableland in north Queensland through to central Victoria (Wombat State Forest), with an elevational range from sea level to 1200 m above sea level. It prefers taller montane, moist eucalypt forest with relatively old trees and abundant hollows.	Low - the subject land does not support the species habitat	None
Petaurus australis	Yellow- bellied Glider	Vulnerable	Ecosystem	Vulnerable	1, 0	BioNet (2023), PMST (2024)	The Yellow-bellied Glider is found along the eastern coast to the western slopes of the Great Dividing Range, from southern Queensland to Victoria. The species occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. Vegetation preferences vary with latitude and elevation; mixed coastal forests to dry escarpment forests in the north; moist coastal gullies and creek flats to tall montane forests in the south.	Low - the habitat within the subject land and surrounding town of bathurst is fragmented from larger stands that would support a population of the species	Low



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Petaurus norfolcensis	Squirrel Glider	Vulnerable	Species	Not Listed	0, 4	BAM-C (Candidate), BioNet (2023)	The Squirrel Glider is widely though sparsely distributed in eastern Australia, from northern Queensland to western Victoria. The species inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas.	Low - the habitat within the subject land and surrounding town of bathurst is fragmented from larger stands that would support a population of the species	Low
Petrogale penicillata	Brush-tailed Rock- wallaby	Endangered	Species	Vulnerable	0	BAM-C (Candidate)	The range of the Brush-tailed Rock-wallaby extends from south-east Queensland to the Grampians in western Victoria, roughly following the line of the Great Dividing Range. However, the distribution of the species across its original range has declined significantly in the west and south and has become more fragmented. In NSW they occur from the Queensland border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. Occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north.	Low - not recorded within the locality. No suitable habitat within the subject land	None
Phascogale tapoatafa	Brush-tailed Phascogale	Vulnerable	Species	Not Listed	0, 2	BAM-C (Candidate), BioNet (2023)	The Brush-tailed Phascogale has a patchy distribution around the coast of Australia. In NSW it is mainly found east of the Great Dividing Range although there are occassional records west ot the divide. Prefer dry sclerophyll open forest with sparse groundcover of herbs, grasses, shrubs or leaf litter. Also inhabit heath, swamps, rainforest and wet sclerophyll forest.	Low - species infrequently recorded and the habitat in the subject land is fragmented such that it's unlikely to support a population	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Phascolarctos cinereus	Koala	Endangered	Species	Endangered	0, 89, 0	BAM-C (Candidate), BioNet (2023), PMST (2024)	The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In New South Wales, koala populations are found on the central and north coasts, southern highlands, southern and northern tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the plains west of the Great Dividing Range. The species inhabit eucalypt woodlands and forests, and feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species.	Low - the species is infrequently recorded in the centre of town, with the few records in town being from wildlife rehab and community wildlife surveys. The majority of records occur within vegetated areas to the south and west of the township.	None - species not found within the subject land
Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Species/Ec osystem	Vulnerable	0, 58, 0	BAM-C (Predicted and Candidate), BioNet (2023), PMST (2024)	Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. In times of natural resource shortages, they may be found in unusual locations. The species occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.	Low - the species is infrequently recorded and the buildings proposed for modification are relatively new with few locations for bats to roost.	Low



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Saccolaimus flaviventris	Yellow- bellied Sheathtail- bat	Vulnerable	Ecosystem	Not Listed	0, 14	BAM-C (Predicted), BioNet (2023)	The Yellow-bellied Sheathtail-bat is a wide-ranging species found across northern and eastern Australia. In the most southerly part of its range - most of Victoria, south- western NSW and adjacent South Australia - it is a rare visitor in late summer and autumn. There are scattered records of this species across the New England Tablelands and North West Slopes. It forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.	Low - the species is infrequently recorded and the buildings proposed for modification are relatively new with few locations for bats to roost.	Low
Reptiles									
Aprasia parapulchella	Pink-tailed Legless Lizard	Vulnerable	Species	Vulnerable	0, 0	BAM-C (Candidate), PMST (2024)	Populations occur in the Queanbeyan/Canberra district, Cooma, Yass, Bathurst, Albury and West Wyalong areas. Inhabits grassland and open woodland with substantial embedded rock cover in sunny situations. Recorded in both native and non-native grasslands. Usually recorded under small rocks (150 - 600 mm basal area) shallowly embedded in the soil (2 - 5 cm, and use ant burrows under these rocks.	Low - species not recorded in the locality. The subject land lacks suitable habitat features and structural complexity for this species	None
Delma impar	Striped Legless Lizard	Vulnerable	Species	Vulnerable	0, 0	BAM-C (Candidate), PMST (2024)	Occurs in the Southern Tablelands, South-west Slopes and possibly the Riverina. Found in natural or secondary grassland or open areas in grassy eucalypt woodland. May occur in modified grasslands with high exotic grass cover. Shelters in base of grass tussocks, under rocks or logs or in soil cracks (Smith and Robertson 1999).	Low - species not recorded in the locality. The subject land lacks suitable habitat features and structural complexity for this species	None



Scientific name	Common name	NSW Status (BC Act unless otherwise stated)	Credit type	Commonwealth Status	Number of records	Source	Habitat requirements (OEH 2020b)	Likelihood of occurrence	Likelihood of impacts
Tympanocrypti s lineata	Canberra Grassland Earless Dragon	Critically Endangered	Species	Critically Endangered	2	BioNet (2023)	#N/A	Low - species not recorded in the locality. The subject land lacks suitable habitat features and structural complexity for this species	None
Tympanocrypti s mccartneyi	Bathurst Grassland Earless Dragon	Critically Endangered	Species	Critically Endangered	0, 0	BAM-C (Candidate), PMST (2024)	#N/A	Low - species not recorded in the locality. The subject land lacks suitable habitat features and structural complexity for this species	None
Varanus rosenbergi	Rosenberg's Goanna	Vulnerable	Ecosystem	Not Listed	0	BAM-C (Predicted)	Rosenberg's Goanna occurs on the Sydney Sandstone in Wollemi National Park to the north-west of Sydney, in the Goulburn and ACT regions and near Cooma in the south. There are records from the South West Slopes near Khancoban and Tooma River. Also occurs in South Australia and Western Australia. Found in heath, open forest and woodland. Associated with termites, the mounds of which this species nests in; termite mounds are a critical habitat component.	Low - species not recorded in the locality. The subject land lacks suitable habitat features and structural complexity for this species	None





ARBORICULTURAL IMPACT ASSESSMENT

BATHURST HOSPITAL REDEVELOPMENT

VERSION 7

January 2025

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INTRODUCTION

Background

This Arboricultural Impact Assessment has been prepared by Douglas Arbor on behalf of Health Infrastructure for the redevelopment of the Bathurst Hospital at 361-365 Howick Street, Bathurst.

The site is located at 361-365 Howick Street, Bathurst, in the Bathurst Local Government Area. It is occupied by Bathurst Health Service, a Level C referral facility in the Western NSW Local Health District.

This report accompanies a State Significant Development Application that seeks approval for the construction and operation of a new-build expansion, refurbishment and repurposing works to the existing Bathurst Health Service main hospital building. Proposed works will include:

- A new-build, three-storey health services building expansion (including 1 plant level) to include overnight inpatient accommodation and non-admitted care services and a new hospital front-of house and entrance
- A new-build, two-storey expansion to the Emergency department and Operating Theatres (plus 1 plant level)
- A new-build, single-storey expansion to the existing Cancer Service building Daffodil Cottage
- Refurbishment and repurposing to areas of the existing hospital
- Site establishment, demolition of some existing structure, cut and fill and remediation works
- Vehicular circulation and car parking improvements
- Tree removal
- Landscape works
- Alteration and amplification of existing hospital plant and services infrastructure
- For a detailed project description, refer to the Environmental Impact Statement prepared by Ethos Urban.

Item	SEARS Requirement	Relevant Section of Report
8.0	 Trees and Landscaping Assess the number, location, condition and significance of trees to be removed and retained and note any existing canopy coverage to be retained on-site. 	Whole of report

The Bathurst Hospital site is located within the Bathurst Heritage Conservation Area as defined in Schedule 5 of the *Bathurst LEP*.

In preparing this report, the author is aware of and considers the objectives of the following:

- Bathurst Regional Development Control Plan 2014 (Bathurst DCP)
- Bathurst Regional Local Environmental Plan 2014 (Bathurst LEP)
- Bathurst Regional Council Tree Preservation and Management Policy
- Australian Standard AS 4970-2009 Protection of Trees on Development Sites (AS4970)
- AS4790 has been used as a benchmark in preparing this report.

The following plans have been provided and referenced:

Title	Author	Date	Reference on document
Bathurst Hospital Redevelopment	Billard Lease	6/9/24	BHR-BLP-DRW-ARC-SSD-
Site Context Plan - Proposed Works	Partnership Pty Ltd		003-XX001 [F]
Bathurst Hospital Redevelopment	Billard Lease	6/9/24	BHR-BLP-DRW-ARC-SSD-
Site Context Plan - Demolition	Partnership Pty Ltd		002-XX001 [E]
Bathurst Hospital Redevelopment	Billard Lease	22/7/24	BHR-BLP-DRW-ARC-SSD-
Site Context Plan - Existing	Partnership Pty Ltd		001-XX001 [D]
Showing Tree Detail at Bathurst Base Hospital	Usher & Company	28/5/24	Plan ref: 8681-TREES- 240423, Issue: Initial

Bathurst Tree Preservation and Management Policy (Bathurst TPP)

Bathurst LEP, Clause 5.10 Heritage Conservation outlines the requirement for development consent to remove a (prescribed) tree within the heritage conservation area.

The Bathurst TPP describes a Prescribed Tree as any woody plant which is;

- greater than nine metres in height; or
- has a stem diameter of one metre or more at a height of one metre from the ground; or
- has a branch spread of fifteen metres or more; or
- is not an exempt tree;
- and to which clause 5.10 of the Bathurst LEP applies

Tree Protection Zone (TPZ)

Australian Standard AS 4970-2009 Protection of trees on development sites (AS4970) defines the TPZ as 'A specified area above and below the ground and at a given distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability of a tree to be retained where it is potentially subjected to damage by development.'

AS4970 states, 'If the proposed encroachment is less than 10% of the TPZ or outside the SRZ, detailed root investigations should not be required. The area lost to this encroachment should be compensated for elsewhere and contagious with the TPZ.' And 'If the encroachment is greater than 10% of the TPZ or inside the SRZ, the project arborist must demonstrate that the tree(s) would remain viable'; therefore, specific arboricultural assessment would be required.

Structural Root Zone (SRZ)

AS4970 defines the SRZ as 'The area around the base of a tree required for the tree's stability in the ground.' Earthworks should be prohibited within the SRZ.

Methodology

A site visit was conducted on 24th January 2023 and 7th December 2023 to assess the relevant trees, collect data and make comments concerning the trees and the site.

The assessment is based on a visual inspection using the Visual Tree Assessment (VTA) approach developed by Mattheck & Broeler (1994). The assessment was limited to visually inspecting the trees at ground level, without dissection, probing, aerial inspections (climbing) or tree root mapping. The assessment information relates to observations and data collected on the day of the inspection only and does not include changes after that.

Trunk diameter at breast height (DBH) was measured 1.4m above ground level (unless otherwise stated) using a Yamayo Diameter Tape. Tree heights and canopy spread were estimated. Structural Root Zones (SRZ) and Tree Protection Zones (TPZ) were calculated using *AS4790* guidelines. A TPZ calculator was used to determine TPZ measurements and encroachment percentages. Source: https://as4970calculator.web.app/

Aims

- Determine the impact of the proposed development on the subject trees, including identifying those trees requiring removal.
- To give recommendations and control measures to mitigate or reduce any negative impact on the retained trees.

OBSERVATIONS

The Site

The site is the Bathurst Hospital Services Facility at 361-365 Howick Street, Bathurst.

Refer to Appendix 3 for the Site Context Plan – Existing.

The Plan

The proposed Bathurst Hospital Redevelopment will require a range of demolition and new works, including:

Refer to Appendix 4 for Site Context Plan – Proposed.

Howick Street Loop

- Demolition of the existing crossing at Howick Street, converting and widening of the pedestrian access path to allow for a two-way internal roadway.
- Part removal of a dwarf boundary brick wall to enable a new pedestrian access path.
- A new pedestrian pathway leading to the hospital entrance from Howick Street.
- Removal of the existing road accessway off the Howick Street carpark.
- Demolition of existing landscaping and tree removal along the existing internal roadway and car park.
- New car parking spaces within the Howick Street carpark.

Expansion of the Existing Hospital Building

• The existing hospital building will be expanded east toward Mitre Street, including a new hospital front entrance off Mitre Street.

Expansion of the Emergency Department and Daffodil Cottage

- The existing hospital building will be expanded to the south to connect to Daffodil Cottage.
- Daffodil Cottage will be expanded to the south.

The Trees

One hundred and seven trees are located within the Bathurst Hospital site.

Refer to Appendix 1 – Tree Schedule for the full tree data and Appendix 2 for the Tree Location Plan.

Protected Trees

The following 17 trees are protected under the *Bathurst DCP*, and approval is required by the consenting authority for their removal:

Tree No.	Retention Value
72	Low
4, 5, 13, 15, 16, 22, 23, 25, 27, 30, 71, 72, 73, 74, 97, 101	Medium

Unprotected Trees

The following trees are <u>not</u> protected under the *Bathurst DCP* and may be removed without council approval. Many trees have a medium retention value and should be considered for retention if possible.

Tree No.	Retention Value
11, 24, 29, 37, 38, 39, 59, 61, 62 - 67, 70, 75, 76, 77, 86 -89, 91, 93, 99, 114, 164, 165	Low
1, 2, 3, 6 – 10, 12, 14, 17 – 21, 26, 28, 31, 32, 34, 35, 36, 40 – 58, 60, 68, 69, 78 – 85, 90, 92, 94, 95, 96, 98, 100, 102, 103, 109, 110	Medium

DISCUSSION

Trees to be Retained and Protected

The following trees do not conflict with the development and should be retained with tree protection measures implemented to ensure the development does not impact them.

Tree No.

30, 34, 35, 36, 41, 42 - 55, 61, 62, 68, 69, 75 - 76, 79 - 82, 87 - 90, 110

Trees Requiring Removal

The following 73 tree's TPZs conflict with the current design layout and are either within the footprint of the proposed plans or have TPZ or SRZ encroachment and will require removal. 22 of the trees have a low retention value, 51 trees have a medium retention value.

Tree No.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 31, 32, 37, 38, 39, 40, 56, 57, 58, 59, 60, 63, 64, 65, 66, 67, 70, 71, 72, 73 74, 77, 78, 83, 84, 85, 86, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 109, 114, 164, 165

Tree 72 – poor specimen with narrow

The supressed Atlas Cedar is growing between the canopy of the dominant Trees 71 and 73 which will be removed due to conflict with the design. Tree 72 has a minor TPZ encroachment by the additional Howick Street Carpark design and has a low retention value. Once Trees 71 and 73 are removed the tree will be newly exposed to wind forces and the likelihood of failure will increase, therefor it is recommended that the tree is also removed.

Trees with TPZ Encroachment

The following trees either have a minor TPZ encroachment or are established trees with a medium retention value and should be retained where possible.

Tree No.
42 – 55, 68, 69

If tree protection measures outlined in this report are followed, the impact of the development is expected to be low, with the trees remaining healthy and viable post construction.

Removal of the existing road accessway off the Howick Street carpark.

The existing Howick St road access passes through the TPZs of Trees 68 and 69. The road will be removed and replaced with landscaping.

Trees 68 and 69 are established trees with a medium retention value and should be retained if possible. To ensure minimal impact and tree viability, the existing asphalt road and concrete edging must be removed in a tree sensitive manner that minimises root disturbance.

The roadway shall be removed using light machinery (tracked skid-steer loader or alternative approved method) or by hand in a manner that does not damage significant roots in the soil below and minimises further compaction. The machinery should operate from beyond the

TPZs where possible or be restricted to the footprint of the road. The soil fill material should be of a courser material than the natural soil beneath.

New pedestrian access path leading to the hospital entrance from Howick Street.

The new pathway runs through the TPZ of Trees 69, 70 and 73. Tree 70 has a poor structure and a short life expectancy, so removal is recommended.

To minimise the impact on the trees and potential root disturbance, the footpath within the TPZs should be installed above grade, with minimal topsoil removed by hand of <50mm, with no woody roots of >30mm diameter to be damaged. A course sub-base material with minimal fines using low compaction methods is permitted to a depth of 100mm.

Demolition of the existing pedestrian access path off Howick Street, converting and widening to allow for a two-way internal roadway.

The existing pedestrian access path requires removal and will be replaced with a new twoway internal concrete road requiring further soil excavation, widening, compaction, and a minimum road depth of 190mm.

The required excavation will likely damage any roots from Trees 63 – 67 that have managed to grow beneath the existing concrete path. The SRZ of all trees is encroached by the road footprint, and damage to the structural roots can lead to tree instability therefore, these trees will require removal and should be replanted post construction with an appropriate small tree species.

Trees 164 and 165 are within the footprint of the new road and require removal.

The reconfiguring of the layout for the internal car park near the existing entrance to the hospital will require the removal of Trees 31, 32, 56, 57, 58 and 109.

Tree 73

Tree 73 is a visually prominent, large, mature tree with a medium retention value. The new roadway has a TPZ encroachment of 27% and is deemed a 'Major Encroachment ' under *AS4970*, and the project arborist must demonstrate that the tree will remain viable if it is to be retained.

Due to the major TPZ encroachment root mapping and likely tree sensitive construction methods or potentially design changes would be required if the tree is to be retained.

The design team has indicated that these parameters will likely lead to significant issues with the project and indicated removal is preferred.

The current plans require widening the existing footprint by 1.6m to approximately 4.4m from the trunk centre into an existing sloping garden bed with an minimum excavation depth of approximately 0.7m. This has the potential to require the removal of several significant wood roots that could impact tree health. The encroachment is beyond the SRZ required for tree stability.

New car parking spaces within the Howick Street carpark.

The proposed additional carparks within the Howick Street carpark has a major encroachment of the TPZ and SRZ of Tree 71 and design changes would be required if the tree is to be retained.

The design team has indicated that these parameters will likely lead to significant issues with the project and indicated removal is preferred.

The additional carparks have a minor TPZ encroachment of Tree 72 which is to be removed.

Existing Internal car park

Trees 42 - 55, located south of the existing car park, will be retained and unimpacted by the development.

The reconfiguring of the layout for the internal car park near the existing entrance to the hospital will require the removal of Trees 31, 32, 56, 57, 58 and 109.

Expansion of the Existing Hospital Building

All trees to the east of the existing Hospital building will require removal for the construction of the building extension and the new hospital front entrance.

Expansion of the Emergency Department and Daffodil Cottage

Trees 37, 38, 39, 40, 41, 59 and 60 are within the footprint of the expansion of the emergency department and will require removal.

Tree 74 has a major encroachment of its TPZ and SRZ due to the Daffodil Cottage expansion, and it will require removal.

Northern and Western car park reconfiguration

Trees 77, 78, 83, 84, 85, 86, 91, 92, 93 and 94 are within the footprint of the reconfiguration of the northern and western car park areas and will require removal.

RECOMMENDATIONS

Trees to be Removed

• The following 73 trees are within the footprint of the proposed buildings or have a major TPZ encroachment and will require removal:

Trees 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 31, 32, 37, 38, 39, 40, 56, 57, 58, 59, 60, 63, 64, 65, 66, 67, 70, 71, 72, 73 74, 77, 78, 83, 84, 85, 86, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 109, 114, 164, 165

- Trees 4, 5, 13, 15, 16, 22, 23, 25, 27, 71, 72, 73, 74, 101, 102 and 103 are protected under the *Bathurst DCP* and require approval from the consenting authority for their removal.
- Removed trees should be replaced with suitable tree species and numbers within the site to replace the lost tree canopy cover.
- 22 of the trees to be removed have a low retention value, 51 trees have a medium retention value.

Retained On-site Trees

• The following 34 trees are to be retained with tree protection measures implemented to ensure they remain healthy and viable post construction:

Trees 30, 34, 35, 36, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 61, 62, 68, 69, 75, 76, 79, 80, 81, 82, 87, 88, 89, 90, 110.

Removal of the existing road accessway off the Howick Street carpark.

- To ensure minimal impact and the viability of Trees 68 and 69, the existing asphalt road and concrete edging must be removed in a tree sensitive manner that minimises root disturbance and under the supervision of the Project Arborist.
- The asphalt roadway shall be removed by hand or using light machinery (tracked skidsteer loader or alternative approved method). The machinery should operate from beyond the TPZs if possible or be restricted to the road's footprint. Care shall be taken to avoid damage to significant woody roots and the tree canopy above.
- The soil fill material should be a courser material (sandy loam) than the natural soil beneath.

New Pedestrian access path leading to the hospital entrance from Howick Street.

- The footpath within the TPZs of the retained Tree 69 and should be installed above grade, with minimal topsoil removed by hand of <50mm, with no woody roots of >30mm diameter to be damaged.
- A course sub-base material with minimal fines using low compaction methods is permitted to a depth of 100mm.

Demolition of the existing pedestrian access path off Howick Street, converting and widening to allow for a two-way internal roadway.

• Tree 73 is to be removed so there are no tree sensitive construction methods or limitations to the roadway width required.

New car parking spaces within the Howick Street carpark.

• Trees 72 and 73 are to be removed so there are no tree sensitive construction methods or limitations to the car park required.

ARBORICULTURAL METHOD STATEMENT

- Prior to any work commencing at the site, a Project Arborist shall be appointed to supervise all tree protection procedures detailed in this report. The Project Arborist shall have a minimum Level 5 AQF qualification in Arboriculture.
- A pre-commencement site meeting shall take place between the Project Arborist and Project Manager, the meeting is to take place before any development activity to determine specific arboricultural inspections and required tree protection measures.
- The Project Arborist shall conduct site monitoring at intervals as agreed at the precommencement site meeting. These visits are to ensure that the protection measures are followed and that the works within the TPZ meet with this Arboricultural Method Statement, the recommendation outlined in this report, and *AS4970*.
- The Project Manager is responsible for providing sufficient notice to the Project Arborist when attendance is required.
- Should the proposed design change from that reviewed, additional arboricultural assessment will be required.
- The following pre-determined stages are hold points and will require the attendance of the Project Arborist to document the works, provide certification and advice if needed and demonstrate an inspection has taken place.

Arboricultural Hold Points

Hold Points	Stage	Responsibility to organise visit.	Certification	Completed Y/N. Date
A pre-commencement site meeting shall take place between the Project Arborist and Project Manager, the meeting is to take place before any development activity to determine specific arboricultural inspections and required tree protection measures.	Prior to work commencing	Project Manager	Project Arborist	
Project Arborist to assess and certify that tree protection has been installed in accordance with this report and <i>AS4970</i> prior to works commencing at site.	Prior to development work commencing	Project Manager	Project Arborist	
Project Arborist to supervise the removal of the existing roadway off Howick St carpark through the TPZ of Trees 68 and 69.	Removal of existing roadway of Howick St carpark.	Project Manager	Project Arborist	
After all construction works are completed, the Project Arborist should assess that the retained trees are in the same condition and vigor and authorise the removal of the tree fencing. If changes to conditions are identified, the Project Arborist should provide recommendations for remediation.	At completion of construction	Project Manager	Project Arborist	

Tree Protection Measures

- Unless otherwise specified, all retained on-site trees must be protected from development impact by tree protection fencing installed at the extent of their TPZs in accordance with AS4970. Refer to Appendix 1 for TPZ measurements.
- Tree protection fencing shall be installed at the beginning of the job before any groundwork or construction is started.
- Where the design has an approved TPZ incursion (e.g. Trees 42 55, 68, 69), the tree protection fencing shall be located at the immediate edge of the construction excavation line.
- Where new or existing paths, roads, car parks or public access areas exist within retained trees TPZ, the fencing is to be located on the immediate edge of the area to encompass as much of the TPZ as possible.
- For the work required for the removal of the existing road accessway off the Howick St carpark and for the construction of the footpath running through the TPZs of Trees 68 and 69 minimal sections of the fencing are to be removed immediately before the work is started and are to be reinstated immediately after completion. No unapproved machinery access is permitted within the tree protection fencing.
- Refer to Appendix 6 for the Tree Protection Fencing Plan, showing the approximate fencing location.
- Refer to Appendix 7 for Standard Tree Protection Zone Measures.
- No significant landscaping is to occur within the TPZs that will cause substantial root loss
 or impact the tree. Any landscaping plan within the TPZ shall be established with the
 consultation of the Project Arborist.
- No underground services will be routed through the TPZs without consulting the Project Arborist.

Mayer

Mark Douglas Diploma in Arboriculture (AQF Level 5) Registered QTRA and TRAQ Assessor Arboriculture Australia Member – Registered Consulting Arborist Institute of Australian Consulting Arborists (IACA) Associate Member



Disclaimer: The information in the report is true and accurate to the author's best knowledge. Best professional judgement was used to make recommendations. However, the author of this report is not responsible for any action taken or not taken in reliance on it. This report remains the property of the author and "the Client". It may not be used or reprinted without their express permission.

APPENDIX 1 – TREE SCHEDULE

Tree Id	Species	Age	Height [m]	Canopy [m]	DBH [cm]	D@Base [cm]	Health	Structure	ULE	Retention Value	Protection Status	TPZ [m]	SRZ [m]
1	Chinese Elm - Ulmus parvifolia	М	5	6	20	26	G	G	М	Medium	No	2.4	1.88
2	Chinese Elm - Ulmus parvifolia	М	4	5	14	17	G	G	М	Medium	No	2	1.57
3	Chinese Elm - Ulmus parvifolia	М	5	5	18	21	G	G	М	Medium	No	2.16	1.72
4	Eurabbie - Eucalyptus globulus	М	10	4	36	42	G	G	М	Medium	Yes	4.32	2.3
5	Eurabbie - Eucalyptus globulus	М	11	6	45	52	G	G	М	Medium	Yes	5.4	2.51
6	River She-Oak - Casuarina cunninghamiana	S	8	4	24	30	G	G	М	Medium	No	2.88	2
7	Blakely's Red Gum - Eucalyptus blakelyi	S	6	4	27	34	F	F	М	Medium	No	3.24	2.1
8	Chinese Elm - Ulmus parvifolia	М	5	5	22	26	G	G	М	Medium	No	2.64	1.88
9	Chinese Elm - Ulmus parvifolia	М	5	6	20	26	F	G	М	Medium	No	2.4	1.88
10	Chinese Elm - Ulmus parvifolia	М	5	5	22	27	F	F	М	Medium	No	2.64	1.91
11	Deodar - <i>Cedrus deodara</i>	S	4	3	14	19	F	G	М	Low	No	2	1.65
12	Kurrajong - Brachychiton populneus	М	6	6	43 (28,33)	57	G	F	М	Medium	No	5.19	2.61
13	Deodar - <i>Cedrus deodara</i>	М	12	11	76	89	F	G	М	Medium	Yes	9.12	3.15
14	Kurrajong - Brachychiton populneus	М	6	6	36	43	F	F	М	Medium	No	4.32	2.32
15	Atlas Cedar - Cedrus atlantica	М	14	13	68 (49,48)	78	F	F	М	Medium	Yes	8.23	2.98
16	Atlas Cedar - Cedrus atlantica	М	11	10	53	64	F	G	М	Medium	Yes	6.36	2.74
17	Chinese Elm - Ulmus parvifolia	М	5	5	31 (21,23)	36	F	F	М	Medium	No	3.74	2.15
18	Atlas Cedar - Cedrus atlantica	S	4	3	12	16	G	G	L	Medium	No	2	1.53
19	Eucalyptus sp.	S	6	4	23	26	F	F	М	Medium	No	2.76	1.88
20	Mugga Ironbark - Eucalyptus sideroxylon	М	6	4	32	38	G	F	L	Medium	No	3.84	2.2
21	Mugga Ironbark - Eucalyptus sideroxylon	М	8	7	39	46	G	F	М	Medium	No	4.68	2.39
22	Mugga Ironbark - Eucalyptus sideroxylon	М	9	7	41	46	G	F	М	Medium	Yes	4.92	2.39
23	Mugga Ironbark - Eucalyptus sideroxylon	М	9	7	33	38	G	F	М	Medium	Yes	3.96	2.2
24	Leyland Cypress - Cupressocyparis leylandii	S	5	5	15 (9,9,8)	22	G	F	М	Low	No	2	1.75
25	River She-Oak - Casuarina cunninghamiana	s	9	4	27	33	F	F	М	Medium	Yes	3.24	2.08
26	Eucalyptus sp.	М	7	7	35	45	G	G	М	Medium	No	4.2	2.37

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Tree Id	Species	Age	Height [m]	Canopy [m]	DBH [cm]	D@Base [cm]	Health	Structure	ULE	Retention Value	Protection Status	TPZ [m]	SRZ [m]
27	Mugga Ironbark - Eucalyptus sideroxylon	М	9	8	33	40	G	F	М	Medium	Yes	3.96	2.25
28	Mugga Ironbark - Eucalyptus sideroxylon	s	6	4	25	29	F	F	М	Medium	No	3	1.97
29	Blakely's Red Gum - Eucalyptus blakelyi	s	6	5	25	32	Р	F	М	Low	No	3	2.05
30	Pin Oak - Quercus palustris	J	8	6	22	30	G	F	М	Medium	No	2.64	2
31	Chinese Elm - Ulmus parvifolia	S	4	4	16	20	G	G	М	Medium	No	2	1.68
32	Chinese Elm - Ulmus parvifolia	S	4	4	16	20	F	F	М	Medium	No	2	1.68
33	No tree.												
34	Chinese Elm - Ulmus parvifolia	М	6	6	28	33	G	G	М	Medium	No	3.36	2.08
35	Chinese Elm - Ulmus parvifolia	М	5	6	27	31	G	G	М	Medium	No	3.24	2.02
36	Chinese Elm - Ulmus parvifolia	S	4	4	15	19	G	G	М	Medium	No	2	1.65
37	Callery Pear - Pyrus calleryana	М	6	4	27	31	F	Р	М	Low	No	3.24	2.02
38	Callery Pear - Pyrus calleryana	М	5	3	22	26	F	F	М	Low	No	2.64	1.88
39	Callery Pear - Pyrus calleryana	М	4	4	15	19	F	Р	S	Low	No	2	1.65
40	Pin Oak - Quercus palustris	S	5	3	15	20	G	F	М	Medium	No	2	1.68
41	Pin Oak - Quercus palustris	S	6	5	21	27	G	F	М	Medium	No	2.52	1.91

Tree Id	Species	Age	Height [m]	Canopy [m]	DBH [cm]	D@Base [cm]	Health	Structure	ULE	Retention Value	Regulation Status	TPZ [m]	SRZ [m]	Comments
42	Atlas Cedar - Cedrus atlantica	J	5	3	14	19	G	G	L	Medium	No	2	1.65	
43	Atlas Cedar - Cedrus atlantica	SM	7	4	20	25	G	G	L	Medium	No	2.4	1.85	Edge of concrete footpath approx. 2m from base to N.
44	Chinese Elm - Ulmus parvifolia	J	4	5	14	17	G	F	L	Medium	No	2	1.57	Edge of concrete footpath approx. 2m from base to N.
45	Chinese Elm - Ulmus parvifolia	М	6	8	30	36	G	G	L	Medium	No	3.6	2.15	
46	Chinese Elm - Ulmus parvifolia	М	6	8	32	34	G	G	L	Medium	No	3.84	2.1	
47	Chinese Elm - Ulmus parvifolia	J	4	4	11	14	G	G	L	Medium	No	2	1.45	Edge of concrete footpath approx. 2m from base to N.
48	Chinese Elm - Ulmus parvifolia	М	7	8	26	27	G	G	L	Medium	No	3.15	1.91	Multi trunk.
49	Chinese Elm - Ulmus parvifolia	М	6	7	24	28	G	G	L	Medium	No	2.88	1.94	Edge of concrete footpath approx. 2m from base to N.
50	Chinese Elm - Ulmus parvifolia	М	6	7	19	21	G	G	L	Medium	No	2.31	1.72	Edge of concrete footpath approx. 2m from base to N. Multi trunk.
51	Chinese Elm - Ulmus parvifolia	М	6	7	19	25	G	G	L	Medium	No	2.31	1.85	Edge of concrete footpath approx. 2m from base to N. Multi trunk.

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Tree Id	Species	Age	Height [m]	Canopy [m]	DBH [cm]	D@Base [cm]	Health	Structure	ULE	Retention Value	Regulation Status	TPZ [m]	SRZ [m]	Comments
52	Chinese Elm - Ulmus parvifolia	М	6	6	19	25	G	G	L	Medium	No	2.31	1.85	Edge of concrete footpath approx. 2m from base to N. Multi trunk.
53	Chinese Elm - Ulmus parvifolia	М	5	6	21	25	G	G	L	Medium	No	2.52	1.85	Edge of concrete footpath approx. 2m from base to N.
54	Chinese Elm - Ulmus parvifolia	М	5	6	19	22	G	G	L	Medium	No	2.28	1.75	Edge of concrete footpath approx. 2m from base to N.
55	Chinese Elm - Ulmus parvifolia	SM	5	6	16	17	G	G	L	Medium	No	2	1.57	Edge of concrete footpath approx. 2m from base to N. Multi trunk.
56	Chinese Elm - Ulmus parvifolia	SM	5	6	16	22	G	G	L	Medium	No	2	1.75	Edge of concrete footpath approx. 1.2m from base to N. Multi trunk.
57	Pin Oak - Quercus palustris	SM	6	5	19	26	G	G	L	Medium	No	2.28	1.88	
58	Callery Pear - Pyrus calleryana	М	5	6	25	24	G	F	М	Medium	No	3.05	1.82	Concrete path 1m to north, 2.4m to W. Multi trunk.
59	Chinese Elm - Ulmus parvifolia	SM	3	3	20	22	G	Р	М	Low	No	2.4	1.75	Multi trunk from base
60	Callery Pear - Pyrus calleryana	М	4	2	13	14	G	F	М	Medium	No	2	1.45	
61	Callery Pear - Pyrus calleryana	М	3	5	17	21	G	Р	М	Low	No	2.04	1.72	Poor form and structure
62	Callery Pear - Pyrus calleryana	М	4	5	19	23	G	F	М	Low	No	2.28	1.79	
63	Callery Pear - Pyrus calleryana	М	4	5	19	21	G	F	М	Low	No	2.28	1.72	
64	Callery Pear - Pyrus calleryana	М	5	6	23	25	G	F	М	Low	No	2.76	1.85	Multi trunk whorl. Concert path 2m to E.
65	Callery Pear - Pyrus calleryana	М	5	6	23	25	G	F	М	Low	No	2.76	1.85	Multi trunk whorl. Concert path 1.5m to E.
66	Callery Pear - Pyrus calleryana	М	6	6	19	23	G	F	М	Low	No	2.28	1.79	Concert path 1m to E.
67	Atlas Cedar - Cedrus atlantica	SM	7	4	24	29	G	G	L	Low	No	2.88	1.97	Concrete path and road 1m to E and W. Tree in inappropriate location to achieve mature potential.
68	Callery Pear - Pyrus calleryana	М	7	6	29	30	G	F	М	Medium	No	3.44	2	Bitumen road 2m to SW. Multi trunk.
69	Callery Pear - Pyrus calleryana	М	7	6	23	29	G	F	М	Medium	No	2.81	1.97	Bitumen road 1.5m to NE. Multi trunk.
70	Black Locust - Robinia pseudoacacia	М	8	7	32	45	G	Р	S	Low	No	3.81	2.37	Cavity and included junction at base. Multi trunk. Poor quality tree.
71	Deodar - <i>Cedrus deodara</i>	М	15	14	106	122	G	G	L	Medium	Yes	12.72	3.6	Bitumen road 5.5m to E
72	Atlas Cedar - Cedrus atlantica	М	10	5	26	27	F	F	L	Low	Yes	3.12	1.91	Suppressed canopy, minor dieback. Narrow trunk to height ration.
73	Deodar - Cedrus deodara	М	16	15	98	109	G	G	L	Medium	Yes	11.76	3.43	
74	English Elm - Ulmus procera	М	11	8	57	68	G	F	L	Medium	Yes	6.82	2.81	1m heigh retaining wall 3.7m to N, unlikely to be substantial roots beyond. Multi trunk.
75	Kurrajong - Brachychiton populneus	SM	6	3	18	23	F	G	М	Low	No	2.16	1.79	Thin canopy, poor form.
76	Kurrajong - Brachychiton populneus	SM	7	4	22	29	F	F	М	Low	No	2.64	1.97	Thin canopy, dieback, poor form.
77	Yellow Box - Eucalyptus melliodora	SM	5	4	25	27	F	Р	М	Low	No	3	1.91	Poor branch structure, stunted growth.
78	Black Sally - Eucalyptus stellulata	М	8	8	75	85	G	F	L	Medium	No	9	3.09	DBH a measured at 1m

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Tree Id	Species	Age	Height [m]	Canopy [m]	DBH [cm]	D@Base [cm]	Health	Structure	ULE	Retention Value	Regulation Status	TPZ [m]	SRZ [m]	Comments
79	Chinese Elm - Ulmus parvifolia	М	6	6	21	25	G	F	L	Medium	No	2.52	1.85	Possible street tree, if so regulated.
80	Chinese Elm - Ulmus parvifolia	SM	5	5	21	21	G	F	L	Medium	No	2.52	1.72	Possible street tree, if so regulated.
81	Chinese Elm - Ulmus parvifolia	М	5	6	25	29	G	F	L	Medium	No	3	1.97	Possible street tree, if so regulated. Multi trunk whorl.
82	Chinese Elm - Ulmus parvifolia	М	6	6	25	32	G	G	L	Medium	No	3	2.05	Possible street tree, if so regulated.
83	Mugga Ironbark - Eucalyptus sideroxylon	М	7	7	40	46	G	G	L	Medium	No	4.8	2.39	
84	Red Box - Eucalyptus polyanthemos	М	7	6	34	40	G	G	L	Medium	No	4.08	2.25	
85	Red Box - Eucalyptus polyanthemos	М	8	7	39	44	G	G	L	Medium	No	4.68	2.34	
86	Mixed species	J	3	2	8	10	F	F	L	Low	No	2	1.26	Group of 4 juvenile trees. 3x Acer sp., 1 x Chinese Pistachio
87	Maple - Acer sp.	J	3	2	8	9	F	F	М	Low	No	2	1.2	
88	Maple - Acer sp.	J	4	3	10	12	F	F	М	Low	No	2	1.36	
89	Maple - Acer sp.	J	4	3	10	12	F	F	М	Low	No	2	1.36	
90	Maple - Acer sp.	J	6	4	12	17	F	F	М	Medium	No	2	1.57	
91	Maple - Acer sp.	SM	6	4	12	17	F	Р	М	Low	No	2	1.57	Wound in trunk.
92	Maple - Acer sp.	SM	6	4	12	17	F	Р	М	Medium	No	2	1.57	
93	Maple - Acer sp.	SM	5	4	10	12	Р	Р	S	Low	No	2	1.36	Included branch junction.
94	Maple - Acer sp.	SM	5	4	12	14	F	Р	М	Medium	No	2	1.45	
95	Kurrajong - Brachychiton populneus	М	8	6	42	57	G	G	L	Medium	No	5.04	2.61	
96	Bhutan Cypress - Cupressus torulosa	М	8	6	37	41	G	G	L	Medium	No	4.44	2.28	
97	Deodar - Cedrus deodara	М	13	8	50	58	G	G	L	Medium	Yes	6	2.63	
98	Bhutan Cypress - Cupressus torulosa	М	8	5	37	40	G	G	М	Medium	No	4.44	2.25	
99	Black Locust - Robinia pseudoacacia	М	7	7	29	40	G	Р	S	Low	No	3.49	2.25	Numerous weak included bark branch unions. Multi trunk.
100	Golden Ash - <i>Fraxinus</i> excelsior 'Aurea'	SM	4	5	19	23	F	F	М	Medium	No	2.28	1.79	
101	Unknown		11	6		60					Yes			Data collected by surveyor Usher & Company
102	Unknown		9	7		30					No			Data collected by surveyor Usher & Company
103	Unknown		8	8		40					No			Data collected by surveyor Usher & Company
109	Callery Pear - Pyrus calleryana	М	5	5	23	28	G	F	М	Medium	No	2.8	1.98	
110	Callery Pear - Pyrus calleryana	М	5	5	25	28	G	F	М	Medium	No	3	1.98	
114	Pin Oak - Quercus palustris	J	3	3	8	13	G	G	L	Low	No	2	1.4	

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Tree Id	Species	Age	Height [m]	Canopy [m]	DBH [cm]	D@Base [cm]	Health	Structure	ULE	Retention Value	Regulation Status	TPZ [m]	SRZ [m]	Comments
164	Cedrus sp.	J	3	3	7	10	G	G	L	Low	No	2	1.26	
165	Cedrus sp.	J	3	3	10	13	G	G	L	Low	No	2	1.4	

Notes on Tree Schedule

Tree No.: Tree identification number used to identify each tree or tree group.

Species: Botanical name and common name of the tree species. Where the species is unknown, "sp." Is indicated after genus.

Age: J – Juvenile that is yet to establish. S – Semi-mature - established tree that has not reached its genetic potential of form and/or size. M – Mature – tree that has attained its genetic potential for form and size. OM – Over-mature – tree that shows symptoms of irreversible decline.

Height: Tree height in metres.

Canopy: Average estimated canopy spread in metres. Where the canopy is significantly asymmetrical all directions of canopy radius are estimated.

DBH: Diameter at Breast Height measured at 1.4m above ground unless otherwise noted. Multiple measurements indicate multiple trunks.

DAB: Diameter at Base measured above the root buttress.

Health: G - Good – In good health with no significant health issues noted. F - Fair – Some health issues that could be addressed by intervention. P - Poor – Significant health issues that could be addressed by intervention. VP – Very Poor – Significant health issues unlikely to be addressed by intervention.

Structure: G - Good - No defects noted within the tree. F - Fair - Minor defects noted within tree. P - Poor - Major defects noted within tree. VP - Very Poor - Significant defects have caused tree structure to fail.

ULE: Useful Life Expectancy – The estimated length of time the tree will live with an acceptable level of risk and provide a positive amenity value to the site. L - Long – 40 yrs. or more. M – Medium – 16 -39 yrs. S – Short – 5 -15 yrs. R – Remove – tree requires removal.

Retention Values: See STARS below.

Regulation Status: as outlined under Bathurst LEP.

TPZ: Tree Protection Zone – A defined radial area around a tree within which certain activities are prohibited or restricted to prevent or minimise the potential negative impact on the tree. Calculated as per AS4790.

SRZ: Structural Root Zone – A defined radial area around a tree that is required for structural stability within which activities are prohibited or restricted. Calculated as per AS4970.

IACA Significance of a Tree, Assessment Rating System (STARS)© (IACA 2010)©

In the development of this document IACA acknowledges the contribution and original concept of the Footprint Green Tree Significance & Retention Value Matrix, developed by Footprint Green Pty Ltd in June 2001.

The landscape significance of a tree is an essential criterion to establish the importance that a particular tree may have on a site. However, rating the significance of a tree becomes subjective and difficult to ascertain in a consistent and repetitive fashion due to assessor bias. It is therefore necessary to have a rating system utilising structured qualitative criteria to assist in determining the retention value for a tree. To assist this process all definitions for terms used in the *Tree Significance - Assessment Criteria* and *Tree Retention Value - Priority Matrix*, are taken from the IACA Dictionary for Managing Trees in Urban Environments 2009.

This rating system will assist in the planning processes for proposed works, above and below ground where trees are to be retained on or adjacent a development site. The system uses a scale of *High, Medium* and *Low* significance in the landscape. Once the landscape significance of an individual tree has been defined, the retention value can be determined. An example of its use in an Arboricultural report is shown as Appendix A.

Tree Significance - Assessment Criteria

1. High Significance in landscape



- The tree is in good condition and good vigour;
- The tree has a form typical for the species;
- The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age;
- The tree is listed as a Heritage Item, Threatened Species or part of an Endangered ecological community or listed on Councils significant Tree Register;
- The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity;
 The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community
- The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group or has commemorative values;
- The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa in situ - tree is appropriate to the site conditions.

2. Medium Significance in landscape

- The tree is in fair-good condition and good or low vigour;
- The tree has form typical or atypical of the species;
- The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area
- The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street,
- The tree provides a fair contribution to the visual character and amenity of the local area,
- The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa *in situ*.

3. Low Significance in landscape

- The tree is in fair-poor condition and good or low vigour;
- The tree has form atypical of the species;
- The tree is not visible or is partly visible from surrounding properties as obstructed by other vegetation or buildings,
- The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area,
- The tree is a young specimen which may or may not have reached dimension to be protected by local Tree Preservation orders or similar protection mechanisms and can easily be replaced with a suitable specimen,
- The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa in situ tree is inappropriate to the site conditions,
- The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms,
 The tree has a wound or defect that has potential to become structurally unsound.
- Environmental Pest / Noxious Weed Species
- The tree is an Environmental Pest Species due to its invasiveness or poisonous/ allergenic properties,
- The tree is a declared noxious weed by legislation.
- Hazardous/Irreversible Decline
- The tree is structurally unsound and/or unstable and is considered potentially dangerous,
- The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term.

The tree is to have a minimum of three (3) criteria in a category to be classified in that group.

Note: The assessment criteria are for individual trees only, however, can be applied to a monocultural stand in its entirety e.g. hedge.

Table 1.0 Tree Retention Value - Priority Matrix.



USE OF THIS DOCUMENT AND REFERENCING

The IACA Significance of a Tree, Assessment Rating System (STARS) is free to use, but only in its entirety and must be cited as follows:

IACA, 2010, IACA Significance of a Tree, Assessment Rating System (STARS), Institute of Australian Consulting Arboriculturists, Australia, www.iaca.org.au

REFERENCES

Australia ICOMOS Inc. 1999, The Burra Charter – The Australian ICOMOS Charter for Places of Cultural Significance, International Council of Monuments and Sites, www.icomos.org/australia

Draper BD and Richards PA 2009, Dictionary for Managing Trees in Urban Environments, Institute of Australian Consulting Arboriculturists (IACA), CSIRO Publishing, Collingwood, Victoria, Australia.

Footprint Green Pty Ltd 2001, Footprint Green Tree Significance & Retention Value Matrix, Avalon, NSW Australia, www.footprintgreen.com.au

IACA 2010, IACA Significance of a Tree, Assessment Rating System (STARS), Institute of Australian Consulting Arboriculturists, www.iaca.org.au

APPENDIX 2 – TREE LOCATION PLAN



Figure 1 Pink circles indicate TPZ, Blue circle indicate SRZ

Douglas Arbor ABN 937 997 468 42 P| 0421 480 750 E| mark@douglasarbor.com.au



Figure 2 Pink circles indicate TPZ, Blue circle indicate SRZDouglas Arbor ABN 937 997 468 42P| 0421 480 750E| mark@douglasarbor.com.au

APPENDIX 3 - SITE CONTEXT PLAN - EXISTING



APPENDIX 4 - SITE CONTEXT PLAN - PROPOSED



APPENDIX 5 - SITE CONTEXT PLAN - DEMOLITION



EXISTING WALL/DOOR/LINE MARKING TO BE DEMOLISHED/REMOVED EXISTING SLAB ON GROUND/KERB/ LANDSCAPE TO BE DEMOLISHED EXISTING ROOF/AWNING TO BE DEMOLISHED EXTENT OF demolition for future Masterplan

APPENDIX 6 - TREE PROTECTION FENCING PLAN



- Tree protection fencing is to installed and encompass the TPZ of each retained tree within the development area, unless specified. See Appendix 1 Tree Schedule for TPZ data.
- Where new or existing paths, roads, car parks or public access areas exist within retained trees TPZ the fencing is to be located on the immediate edge of the area to encompass as much of the TPZ as possible.
- For the work required for the removal of the existing road accessway off the Howick St carpark and the construction of the footpath running through the TPZ of Trees 68, 69, minimal sections of the fencing are to be removed immediately before the work is started and are to be reinstated immediately after completion.

APPENDIX 7 – STANDARD TREE PROTECTION ZONE MEASURES

The following tree protection measures must be followed to ensure that the TPZ is isolated, the impact of the development on the tree's health is kept to a minimum, and that the site complies with AS4970-2009.

-The TPZ is a restricted area to be delineated by a protective fence installed prior to site establishment and must remain intact until completion of the works.

The fence must not be altered or removed without the approval of the project arborist. If access is required or minor activities are to be undertaken within the TPZ, it must be approved by the project arborist.
No routing of services, parking of vehicles, stacking of builder's materials/ equipment, or disposing of fuels, paints, chemicals or any other liquids is to occur within the TPZ.

- The protective fence should be constructed from ridged chain wire mess panels (or similar), 1.8m in height, and securely anchored without penetrating the ground. An example from AS4970-2009 is shown below.



FIGURE 3 PROTECTIVE FENCING

- Signs identifying the TPZ should be placed on the fencing and be visible from within the development site from all angles. An example from AS4970-2009 is shown below.



APPENDIX 8 – MITIGATION MEASURES

Project Stage	Mitigation Measures	Relevant Section of Report
Design (D) Construction (C) Operation (O)		
С	The following trees are to be retained with tree protection measures implemented to ensure they remain healthy and viable post construction:	Recommendation
	Trees 30, 34, 35, 36, 41, 42 - 55, 61, 62, 68, 69, 75 - 76, 79 - 82, 87 - 90, 110.	
с	Removal of the existing road accessway off the Howick Street carpark.	Recommendations
	 To ensure minimal impact and the viability of Trees 68 and 69, the existing asphalt road and concrete edging must be removed in a tree sensitive manner that minimises root disturbance and under the supervision of the Project Arborist. The asphalt roadway shall be removed by hand or using light machinery (tracked aligned as a classifier approximation of the project Arborist. 	
	 skid-steer loader or alternative approved method). The machinery should operate from beyond the TPZs if possible or be restricted to the road's footprint. Care shall be taken to avoid damage to significant woody roots and the tree canopy above. The soil fill material should be a courser material (sandy loam) than the natural soil beneath. 	
С	New Pedestrian access path leading to the hospital entrance from Howick Street.	Recommendations
	 The footpath within the TPZs of the retained Tree 69 and should be installed above grade, with minimal topsoil removed by hand of <50mm, with no woody roots of >30mm diameter to be damaged. A course sub-base material with minimal fines using low compaction methods is permitted to a depth of 100mm. 	
	Arboricultural Method Statement	Arboricultural
	• Prior to any work commencing at the site, a Project Arborist shall be appointed to supervise all tree protection procedures detailed in this report. The Project Arborist shall have a minimum Level 5 AQF qualification in Arboriculture.	Method Statement
	• A pre-commencement site meeting shall take place between the Project Arborist and Project Manager, the meeting is to take place before any development activity to determine specific arboricultural inspections and required tree protection measures.	
	• The Project Arborist shall conduct site monitoring at intervals as agreed at the pre- commencement site meeting. These visits are to ensure that the protection measures are followed and that the works within the TPZ meet with this Arboricultural Method Statement, the recommendation outlined in this report, and <i>AS4970</i> .	
	• The Project Manager is responsible for providing sufficient notice to the Project Arborist when attendance is required.	
	 Should the proposed design change from that reviewed, additional arboricultural assessment will be required. 	
	• The following pre-determined stages are hold points and will require the attendance of the Project Arborist to document the works, provide certification and advice if needed and demonstrate an inspection has taken place.	

Project Mitigation Measures Stage

Design (D) Construction (C) Operation (O)

Arboricultural Hold Points

Hold Points	Stage	Responsibility to organise visit.	Certification
A pre-commencement site meeting shall take place between the Project Arborist and Project Manager, the meeting is to take place before any development activity to determine specific arboricultural inspections and required tree protection measures.	Prior to work commencing	Project Manager	Project Arborist
Project Arborist to assess and certify that tree protection has been installed in accordance with this report and <i>AS4970</i> prior to works commencing at site.	Prior to development work commencing	Project Manager	Project Arborist
Project Arborist to supervise the removal of the existing roadway off Howick St carpark through the TPZ of Trees 68 and 69.	Removal of existing roadway of Howick St carpark.	Project Manager	Project Arborist
After all construction works are completed, the Project Arborist should assess that the retained trees are in the same condition and vigor and authorise the removal of the tree fencing. If changes to conditions are identified, the Project Arborist should provide recommendations for remediation.	At completion of construction	Project Manager	Project Arborist

Design (D) Construction (C) Operation (O)

C Tree Protection Measures

- Unless otherwise specified, all retained on-site trees must be protected from development impact by tree protection fencing installed at the extent of their TPZs in accordance with *AS4970*. Refer to Appendix 1 for TPZ measurements.
- Tree protection fencing shall be installed at the beginning of the job before any groundwork or construction is started.
- Where the design has an approved TPZ incursion (e.g. Trees 42 55, 68, 69), the tree protection fencing shall be located at the immediate edge of the construction excavation line.
- Where new or existing paths, roads, car parks or public access areas exist within retained trees TPZ, the fencing is to be located on the immediate edge of the area to encompass as much of the TPZ as possible.
- For the work required for the removal of the existing road accessway off the Howick St carpark and for the construction of the footpath running through the TPZs of Trees 68 and 69 minimal sections of the fencing are to be removed immediately before the work is started and are to be reinstated immediately after completion. No unapproved machinery access is permitted within the tree protection fencing.
- Refer to Appendix 6 for the Tree Protection Fencing Plan, showing the approximate fencing location.
- Refer to Appendix 7 for Standard Tree Protection Zone Measures.
- No significant landscaping is to occur within the TPZs that will cause substantial root loss or impact the tree. Any landscaping plan within the TPZ shall be established with the consultation of the Project Arborist.
- No underground services will be routed through the TPZs without consulting the Project Arborist.

Arboricultural Method Statement





Australian Government

Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 21-Oct-2024

Summary Details Matters of NES Other Matters Protected by the EPBC Act Extra Information Caveat Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	40
Listed Migratory Species:	8

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A <u>permit</u> may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	11
Commonwealth Heritage Places:	None
Listed Marine Species:	19
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	3
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)		[Resource Information]
Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	800 - 900km upstream from Ramsar site	In feature area
Riverland	700 - 800km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	900 - 1000km upstream from Ramsar site	In feature area
The macquarie marshes	300 - 400km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities

[Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	Community likely to occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species	6		[Resource Information]
Status of Conservation Deper Number is the current name I	ndent and Extinct are not MNES und D.	er the EPBC Act.	
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			

Anthochaera phrygia Regent Honeyeater [82338]

Critically Endangered Breeding known to In feature area occur within area

Aphelocephala leucopsis Southern Whiteface [529]

Vulnerable

Species or species In feature area habitat known to occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Botaurus poiciloptilus			
Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In buffer area only
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Callocephalon fimbriatum			
Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area	In feature area
Calyptorhynchus lathami lathami			
South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area	
Climacteris picumnus victoriae			
Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to occur within area	In feature area
Falco hypoleucos			
Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
<u>Gallinago hardwickii</u>			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Grantiella picta			
Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area	In feature area

Hirundapus caudacutus

White-throated Needletail [682]

Vulnerable

Species or species habitat known to occur within area

In feature area

Lathamus discolor Swift Parrot [744]

Critically Endangered Species or species In feature area habitat may occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
<u>Leipoa ocellata</u> Malleefowl [934]	Vulnerable	Species or species habitat may occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
<u>Stagonopleura guttata</u> Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
FISH			
<u>Bidyanus bidyanus</u> Silver Perch, Bidyan [76155]	Endangered	Species or species habitat may occur within area	In feature area
Maccullochella macquariensis Trout Cod [26171]	Endangered	Species or species habitat may occur within area	In feature area
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area	In feature area

Macquaria australasica Macquarie Perch [66632]

Endangered

Species or species In feature area habitat may occur within area

FROG

Litoria booroolongensis Booroolong Frog [1844]

Endangered

Species or species In feature area habitat known to occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Litoria castanea Yellow-spotted Tree Frog, Yellow- spotted Bell Frog [1848]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
MAMMAL			
<u>Chalinolobus dwyeri</u> Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat known to occur within area	In feature area
Dasyurus maculatus maculatus (SE main	nland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat may occur within area	In feature area
Phascolarctos cinereus (combined popul	ations of Qld. NSW and th	ne ACT)	
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour ma occur within area	
PLANT Dichanthium setosum			
bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Eucalyptus pulverulenta Silver-leaved Mountain Gum, Silver- leaved Gum [21537]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Euphrasia arguta



Species or species habitat may occur Critically Endangered In feature area within area

Lepidium aschersonii Spiny Peppercress [10976]

Vulnerable

In feature area Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lepidium hyssopifolium			
Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat may occur within area	In buffer area only
Leucochrysum albicans subsp. tricolor		0	
Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat may occur within area	In feature area
Thesium australe			
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area
Zieria obcordata			
Granite Zieria [3240]	Endangered	Species or species habitat may occur within area	In buffer area only
REPTILE			
Aprasia parapulchella			
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Tympanocryptis mccartneyi			
Bathurst Grassland Earless Dragon [90478]	Critically Endangered	Species or species habitat may occur within area	In feature area
Listed Migratory Species			source Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus		o · · · ·	
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area

occur within area

Motacilla flava Yellow Wagtail [644]

Species or species habitat may occur In feature area within area

Migratory Wetlands Species Actitis hypoleucos Common Sandpiper [59309]

Species or species habitat may occur In feature area within area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands	[<u>R</u>	esource Information]				
The Commonwealth area listed below may indicate the presence of Commonwealth land in this the unreliability of the data source, all proposals should be checked as to whether it impacts on Commonwealth area, before making a definitive decision. Contact the State or Territory governr department for further information.						
Commonwealth Land Name	State	Buffer Status				
Communications, Information Technology and the Arts - Australian Postal	Corporation					
Commonwealth Land - Australian Postal Commission [12373]	NSW	In buffer area only				
Commonwealth Land - Australian Postal Commission [12374]	NSW	In buffer area only				
Communications, Information Technology and the Arts - Telstra Corporati	on Limited					
Commonwealth Land - Australian Telecommunications Commission [123]	71]NSW	In buffer area only				
Commonwealth Land - Australian Telecommunications Commission [123	91]NSW	In buffer area only				
Commonwealth Land - Telstra Corporation Limited [12375]	NSW	In buffer area only				

DefenceCommonwealth Land - Defence Service Homes Corporation [12376]NSWIn buffer area onlyDefence - KELSO ORDINANCE DEPOT [10087]NSWIn buffer area onlyDefence - KELSO ORDINANCE DEPOT [10086]NSWIn buffer area onlyDefence - KELSO ORDINANCE DEPOT [10085]NSWIn buffer area only

Defence - RACECOURSE DEPOT (BATHURST TRAINING/STORES NSW In buffer area only DEPOT) [10088]

Commonwealth Land Name	State	Buffer Status
Defence - Defence Housing Authority		
Commonwealth Land - Defence Housing Authority [12372]	NSW	In buffer area only

Listed Marine Species		[Res	source Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
<u>Actitis hypoleucos</u> Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osc	ulane		
Black-eared Cuckoo [83425]		Species or species habitat likely to occur	In feature area

within area overfly marine area

Gallinago hardwickii Latham's Snipe, Japanese Snipe [863] Vulnerable

Species or species In feature area habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area	In buffer area only
<u>Motacilla flava</u> Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly	In feature area

Pterodroma cervicalis

White-necked Petrel [59642]

marine area

Species or species In feature area habitat may occur within area

Species or species In feature area habitat may occur within area overfly marine area

<u>Rhipidura rufifrons</u> Rufous Fantail [592]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis as Rostratula bengha	<u>alensis (sensu lato)</u>		
Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area

Extra Information

EPBC Act Referrals			[Resou	rce Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Mount Panorama Second Circuit, Bathurst, NSW	2019/8474	Controlled Action	Assessment Approach	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Not controlled action (particular manne	er)			
Aerial baiting for wild dog control	2006/2713	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales -Department of Environment and Primary Industries, Victoria -Department of Primary Industries, Parks, Water and Environment, Tasmania -Department of Environment, Water and Natural Resources, South Australia -Department of Land and Resource Management, Northern Territory -Department of Environmental and Heritage Protection, Queensland -Department of Parks and Wildlife, Western Australia -Environment and Planning Directorate, ACT -Birdlife Australia -Australian Bird and Bat Banding Scheme -Australian National Wildlife Collection -Natural history museums of Australia -Museum Victoria -Australian Museum -South Australian Museum -Queensland Museum -Online Zoological Collections of Australian Museums -Queensland Herbarium -National Herbarium of NSW -Royal Botanic Gardens and National Herbarium of Victoria -Tasmanian Herbarium -State Herbarium of South Australia -Northern Territory Herbarium -Western Australian Herbarium -Australian National Herbarium, Canberra -University of New England -Ocean Biogeographic Information System -Australian Government, Department of Defence Forestry Corporation, NSW -Geoscience Australia -CSIRO -Australian Tropical Herbarium, Cairns -eBird Australia -Australian Government – Australian Antarctic Data Centre -Museum and Art Gallery of the Northern Territory -Australian Government National Environmental Science Program

-Australian Institute of Marine Science

-Reef Life Survey Australia

-American Museum of Natural History

-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania

-Tasmanian Museum and Art Gallery, Hobart, Tasmania

-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Proposal Details

Assessment Id	Proposal Name	BAM data last updated *	
00044821/BAAS23036/23/00044822	Bathurst Hospital Redevelopment	28/10/2024	
Assessor Name	Assessor Number	BAM Data version *	
Jessie Bear	BAAS23036	Current classification (live - default) (80)	
Proponent Names	Report Created	BAM Case Status	
	23/01/2025	Open	
Assessment Revision		Assessment Type	
1		Major Projects	
	* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.		

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla	, ,	3376-Southern Tableland Grassy Box Woodland

Assessment Id

Proposal Name

00044821/BAAS23036/23/00044822



Species
Nil
Additional Information for Approval
PCT Outside Ibra Added
None added
PCTs With Customized Benchmarks
PCT
No Changes
Predicted Threatened Species Not On Site
Name
Botaurus poiciloptilus / Australasian Bittern
Calyptorhynchus lathami lathami / South-eastern Glossy Black-Cockatoo

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

Assessment Id

Proposal Name

00044821/BAAS23036/23/00044822



Name of Plant Community Typ	pe/ID	Name of threatene	ed ecological commu	nity	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3376-Southern Tableland Gras	irassy Box Woodland Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla		e Jew ow Belt		0	0	C	
3376-Southern Tableland	Like-for-like credit retir	ement options						
Grassy Box Woodland	Name of offset trading group	Trading group	Zone	НВТ	Credits	IBRA reg	ion	
	 White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highla This includes PCT's: 74, 75, 83, 250, 266, 267, 268, 270, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 286, 298, 302, 312, 341, 342, 347, 		3376_Degrade d	No		Kanangr Wollemi Any IBRA	a, Oberon, or A subregior ers of the o	ng, Hill End, Orange and n that is within 100 uter edge of the

Assessment Id

00044821/BAAS23036/23/00044822

Bathurst Hospital Redevelopment



350, 352, 356, 367, 38	1,
382, 395, 401, 403, 42	1,
433, 434, 435, 436, 43	7,
451, 483, 484, 488, 49	2,
496, 508, 509, 510, 51	1,
516, 528, 538, 544, 56	3,
567, 571, 589, 590, 59	7,
599, 618, 619, 622, 63	3,
654, 702, 703, 704, 70	5,
710, 711, 796, 797, 79	9,
847, 851, 921, 1099,	
1303, 1304, 1307, 132	4,
1329, 1330, 1332, 138	3,
1606, 1608, 1611, 169	1,
1693, 1695, 1698, 331	4,
3359, 3363, 3373, 337	6,
3387, 3388, 3394, 339	
3396, 3397, 3398, 339	
3406, 3415, 3533, 414	
4149, 4150	

Species Credit Summary

No Species Credit Data

Credit Retirement Options

Like-for-like credit retirement options

Assessment Id

Proposal Name

00044821/BAAS23036/23/00044822

Bathurst Hospital Redevelopment

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Jessie Bear	23/01/2025	Current classification (live - default) (80)
Assessor Number	BAM Case Status	Date Finalised
BAAS23036	Open	To be finalised
Assessment Revision		Assessment Type
1		Major Projects

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

Zone	Vegetatio	TEC name	Current	Change in	Are	Sensitivity to	Species	BC Act Listing	EPBC Act	Biodiversit	Potenti	Ecosyste
	n		Vegetatio	Vegetatio	а	loss	sensitivity to	status	listing status	y risk	al SAII	m credits
	zone		n	n integrity	(ha)	(Justification)	gain class			weighting		
	name		integrity	(loss /								
			score	gain)								



BAM Credit Summary Report

aded	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt	9.9	9.9	0.21	Population size	High Sensitivity to Gain	Critically Endangered Ecological Community	Not Listed	2.50	True	
	South, Sydney Basin, South Eastern Highla										
	_									Subtot al	
										Total	

Species credits for threatened species

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

Assessment Id





CONSULTANT DECLARATION

PROJECT DETAILS							
Project name	Bathurst Hospital Redevelopment project						
Application number	SSD- 64733959						
Address of subject land	361-365 Howick Street, Bathurst						
Lot / DP	Lot 100 in DP 1126063						
APPLICANT DETAILS							
Applicant name	Health Administration Corporation						
Applicant address	1 Reserve Road, St Leonards, NSW 2065						
REPORT DETAILS							
Name of report this declaration relates	Bathurst Hospital redevelopment – Biodiversity Development Assessment Report						
Report reference no.	23462/R01						
Report date	October 2024						
Company name (inc. ABN / ACN)	Umwelt Australia						
Author name	Adam Cavallaro						
Author qualifications	Bachelor Environmental Science (Conservation Ecology)						
Author address	75 York St Teralba						
DECLARATION BY CO	NSULTANT						
Name	Adam Cavallaro						
Registration no.	BAAS18056						
Organisation registered with	NSW Department of Climate Change Energy Environment and Water						
Declaration	The undersigned declares that the Biodiversity Developent Assessment Report (BDAR) :						
	 has been prepared in accordance with the following policy, guidelines, or legislative requirements: 						
	- Biodiversity Conservation Act						
	 Biodiversity Conservation Regulation Biodiversity Assessment Method (2020) 						
	• contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the BDAR relates;						
	 does not contain information that is false or misleading; identifies and addresses the relevant Planning Secretary's environmental assessment requirements (SEARs) for the project; 						
	 identifies and addresses the relevant statutory requirements for the project, including any relevant matters for consideration in environmental planning instruments to which the BDAR relates; 						
	 contains a consolidated summary of the proposed or necessary mitigation measures. 						
Signature							





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