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Streamlined Biodiversity Development Assessment Report

1 Crescent Street Holroyd

Report prepared by Narla Environmental Pty Ltd

For Tiberius (Holroyd) Pty Ltd

October 2025



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Report:	Streamlined Biodiversity Development Assessment Report – 1 Crescent Street Holroyd
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As the accredited assessor, I, Brodie Miller, certify that the information presented in this report is a true and accurate record of the study findings in the opinion of the authors.



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Glossary

Acronym/ Term	Definition
Accredited Biodiversity Assessor	Individuals accredited by the NSW Department of Climate Change, Energy, the Environment and Water (NDCCEEW) to apply the Biodiversity Assessment Method.
APZ	Asset Protection Zone
BAM	The NSW Biodiversity Assessment Method (2020)
BAMC	The NSW Biodiversity Assessment Method Calculator
BC Act	New South Wales Biodiversity Conservation Act 2016
Biodiversity credit report	The report produced by the Credit Calculator that sets out the number and class of biodiversity credits required to offset the remaining adverse impacts on biodiversity values at a development site, or on land to be biodiversity certified.
Biodiversity offsets	Management actions that are undertaken to achieve a gain in biodiversity values on areas of land in order to compensate for losses to biodiversity from the impacts of development.
Biodiversity values	The composition, structure and function of ecosystems, including threatened species, populations and ecological communities, and their habitats.
BOS	NSW Biodiversity Offset Scheme
CEEC	Critically Endangered Ecological Community
CPW	Cumberland Plain Woodland
DA	Development Application
DPE	Department of Planning and Environment (formerly DPIE; now NDCCEEW)
DPIE	NSW Department of Planning, Industry and Environment (formerly OEH)
Ecosystem credit	The class of biodiversity credit that relates to a vegetation type and the threatened species that are reliably predicted by that vegetation type (as a habitat surrogate).
EEC	Endangered Ecological Community
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ha	Hectares
HTE	High Threat Exotic
IPA	Inner Protection Area
km	Kilometres
LALC	Local Aboriginal Land Council
LGA	Local Government Area
Locality	A 1,500m buffer area surrounding the Subject Land
m	metres
Native Vegetation	Means any of the following types of plants native to New South Wales: (a) trees (including any sapling or shrub), (b) understorey plants, (c) groundcover (being any type of herbaceous vegetation), (d) plants occurring in a wetland.
NDCCEEW	NSW Department of Climate Change, Energy, the Environment and Water (was DPE)
NSW	The State of New South Wales
OEH	Office of Environment and Heritage (now DPE)
PCT	NSW Plant Community Type
Proposal	The development, activity or action proposed
SAII	Serious and Irreversible Impacts
SAII entity	Species and ecological communities that are likely to be the subject of serious and irreversible impacts (SAIIs)
SBDAR	Streamlined Biodiversity Development Assessment Report

Acronym/ Term	Definition
SEPP	State Environmental Planning Policy
Species credit	The class of biodiversity credit that relate to threatened species that cannot be reliably predicted to use an area of land based on habitat surrogates. Species that require species credits are listed in the Threatened Biodiversity Data Collection.
Subject Land	The footprint of the proposed development
Subject Property	1 Crescent Street Holroyd NSW (Lot 700/-/DP1241836)
TEC	Threatened Ecological Community
Threatened species, populations and ecological communities	Species, populations and ecological communities specified in Schedules 1 and 2 of the BC Act 2016
VI	Vegetation Integrity
VIS Plot	Vegetation Integrity Survey Plot

Executive Summary

This Streamlined Biodiversity Development Assessment Report (SBDAR) has been prepared by Narla Environmental Pty Ltd (Narla) to accompany a State Significant Development Application (SSDA) for a proposed mixed-use precinct located at 1 Crescent Street, Holroyd NSW (Lot 700/-/DP1241836; the Subject Property). The SBDAR is required as the proposed works will result in biodiversity impacts that cannot be granted a BDAR waiver. This report assesses the biodiversity impacts of the proposed development in accordance with the Biodiversity Conservation Act 2016, the Biodiversity Conservation Regulation 2017, and the Biodiversity Assessment Method (BAM) (DPIE 2020a).

Direct impacts include the complete clearing of 0.66 ha of vegetation, comprising 0.44 ha of Cumberland Shale Plains Woodland (PCT 3320) and 0.22 ha of planted native and exotic vegetation. The 0.44 ha of native vegetation conforms to the BC Act listed Critically Endangered Ecological Community (CEEC), Cumberland Plain Woodland in the Sydney Basin Bioregion. The clearing of this CEEC will require the purchase and retirement of biodiversity offset credits.

Cumberland Plain Woodland is listed as a serious and irreversible impact (SAIL) entity within the BioNet Threatened Biodiversity Data Collection. A determination of whether the impacts are serious and irreversible has been undertaken in accordance with Section 9.1 of the BAM (DPIE 2020a). The vegetation does not conform to any ecological community listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). No threatened species credit species were recorded, and no prescribed impacts will occur.

This report concludes that the proposed development may be considered suitable subject to the implementation of the following mitigation measures:

- A Construction Environmental Management Plan (CEMP) addressing soil, surface water, weeds, and pollutants.
- Appointment of a Project Ecologist to oversee vegetation clearing and implement fauna management protocols.
- Landscaping with locally appropriate native species.
- Installation of erosion and sediment controls to protect adjacent habitats.

1. Introduction

1.1 Overview

This Streamlined Biodiversity Development Assessment Report (SBDAR) has been prepared by Narla Environmental Pty Ltd (Narla) on behalf of Tiberius (Holroyd) Pty Ltd in association with a State Significant Development Application (SSDA) for a proposed mixed-use development at 1 Crescent Street, Holroyd (Lot 700/-/DP1241836; the Subject Property; **Figure 1**). This SBDAR is required as the proposed works will have biodiversity impacts that cannot be granted a BDAR waiver. This SBDAR will assess the biodiversity impacts of the proposed development in accordance with the requirements of the Biodiversity Conservation Act 2016, Biodiversity Conservation Regulation 2017 and BAM (DPIE 2020a). The assessment has been completed in accordance with Appendix L of the BAM (DPIE 2020a).

The report responds to matters raised by the Department of Planning, Housing and Infrastructure (DPHI), Cumberland City Council, other State government authorities /agencies, utility service providers and the community during public exhibition of SSD-70283710.

The report also assesses the proposed amendments to the original proposal, including changes to the following:

- Stage A – Mixed use podium, Buildings 1 to 3 and supporting infrastructure
- Stage B – Buildings 4 and 5 and supporting infrastructure
- Stage C – Buildings 6 and 7 and supporting infrastructure

The proposed changes extend beyond minor refinements which can be accommodated via a Submissions Report. As a result, a combined Submissions and Amendment Report has been prepared and consent sought from DPHI to amend the SSDA as per section 37 of the *Environmental Planning and Assessment Regulation 2021* (the Regulation).

To understand the cumulative impact of the above design refinements, the project description has been updated to reflect the proposed amendments to the scheme as originally lodged with DPHI for assessment.

Table 1 below identifies the relevant matters raised by DPHI (Compliance, Planning and Housing Regulation) and sets out the Applicant's response to these submissions.

Table 1. Applicant Response to Submissions.

No.	Issue Raised	Applicant Response	Refer to Section of Report
CPHR-1	BDAR & BAM-C Access CPHR has undertaken its review without access to the case in the Biodiversity Assessment Method Calculator (BAM-C) or to digital files that form part of the BDAR. Recommended action: Once the BDAR is updated (as per the additional information requested), the consultant should add 'Greater Sydney – Compliance & Regulation' as a case party in the Biodiversity Offset and Agreement Management System (BOAMS) and upload all required digital files (refer to Appendix L – Table 27 in BAM (2020)).	Narla has added 'Greater Sydney – Compliance & Regulation' within BOAMS and uploaded the required digital files following completion of the BDAR edits.	n/a

No.	Issue Raised	Applicant Response	Refer to Section of Report
CPHR2-1	The reported vegetation integrity (VI) score for Cumberland Plain Woodland (CPW) is 14.3, which is close to the 15 threshold that triggers biodiversity credit offsets. CPHR notes low tree cover (30%) and litter cover in some 1 x 1 m plots, which may not represent the condition of the PCT. The largest tree size class recorded (30–49 cm) is inconsistent with the Arboricultural Impact Assessment (AIA), which reports Tree #125 at 64 cm. Justification is requested for the aptness of the plot location and data, particularly the 20 x 20 m floristic plot. Aerial imagery shows a canopy gap where the plot is located.	The VI score was low due to the disturbed and altered nature of the vegetation, where such scores are expected. The closeness to the threshold is coincidental. The BDAR plot was located in the only area of the Subject Land suitable for a 20 x 50 m plot. Although there is a canopy gap, the vegetation still forms part of the same patch, consistent with BAM guidance, and provides a valid representation of condition. The tree identified in the AIA was outside the BDAR plot and therefore not recorded. An additional site assessment was subsequently undertaken using 10 x 100 m plots, which captured areas of regeneration and additional species, resulting in higher VI scores and credit requirements.	Appendix B
CPHR2-2	Update the BDAR to justify the validity of the vegetation plot location in line with BAM Operational Manual – Stage 1 (DPE 2022) subsections 3.3.1 and 3.4. Where a standard plot does not fit within a vegetation zone, alternative plot dimensions (e.g. 10 x 100 m, 25 x 40 m, or irregular shapes) may be used to ensure representativeness. Another plot survey should be undertaken to inform the updated BDAR.		
CPHR-3	Section 4.3 of the BDAR states that targeted surveys were undertaken for SAIL species credit species likely to have suitable habitat within the Subject Land, in accordance with BAM Section 5.3 and relevant DCCEEW guidelines. However, Tables 13 and 14 indicate no targeted surveys were undertaken.	The section heading was misinterpreted. Surveys targeted microhabitats suitable for SAIL threatened species and flora species predicted by the BAMC. Surveys confirmed that no suitable microhabitats were present, and therefore the predicted species were unlikely to occur. The report has now been revised to clearly describe the survey effort and reference the relevant DCCEEW guidelines.	Section 5
CPHR-4	The BDAR has not addressed how impacts are reasonably avoided or minimised on trees descriptive of the CEEC CPW, which is a SAIL entity.	Avoidance and minimisation measures have been addressed in consultation with the project design team and arborist. The BDAR has been updated to incorporate information on avoidance, minimisation and justification for any retained impacts. This update has drawn on input from all relevant consultants, with the BDAR compiling the outcomes.	Section 7

1.2 Assessment Method Applied

This BDAR will be prepared as a site-based 'Streamlined assessment module – small area development that requires consent' as the proposed works do not exceed the area clearing threshold for small area developments as outlined in the BAM (DPIE 2020a; **Table 2**). As there is no minimum lot size allocated to the Subject Property under the Cumberland LEP, the actual lot size (3.79ha) has been used.

This BDAR is also utilising the following additional 'Assessment Modules' (DPIE 2020a):

- 'Streamlined assessment module – planted native vegetation' (**Section 2**).

According to Appendix D of the BAM, the streamlined assessment module for planted native vegetation may be used to assess the biodiversity values of land if it meets the requirements of "D.1 – Decision-making Key" (**Section 2**).

Table 2. Area limits for application of small area development threshold. Dark border indicates clearing threshold relevant to this report.

Minimum lot size associated with the property	Maximum native vegetation clearing limit for application of the small area development module
Less than 1ha	≤1ha
Less than 40ha but not less than 1ha	≤2ha
Less than 1000ha but not less than 40ha	≤3ha
1000ha or more	≤5ha

1.3 Project Background

1.3.1 Planning Proposal PP-2020-1970

A Planning Proposal (reference number PP-2020-1970) was lodged with the State Planning Panel (following a Rezoning Review) which sought to amend the Holroyd Local Environmental Plan 2013 (now replaced by the Cumberland LEP 2021) to facilitate the redevelopment of 1 Crescent Street, Holroyd for a mixed-use development comprising residential uses with supporting retail, commercial and community land uses. Specifically, the proposal sought to:

- Amend the Land Zoning Map from B5 Business Development to part MU1 Mixed Use (now replaced with the MU1 zone), part R4 High Density Residential, RE1 Public Recreation and part SP2 Infrastructure.
- Amend the maximum height in the Height of Buildings Map from 15m to between 32m and 96m.
- Amend the maximum floor space ratio on the Floor Space Ratio Map from 1:1 to between 3.4:1 and 3.75:1.
- Introduce an additional Clause within Part 6 with Additional local provisions that specify:
 - A maximum Gross Floor Area (GFA) for 'retail premises' permitted on the site of 2,500m²,
 - A maximum GFA for 'commercial premises' permitted on the site of 5,000m², and
 - A ground and first floor levels of buildings located in the MU1 Zone with frontage to Woodville Road be restricted to non-residential uses.

On 29 April 2022, after several years of negotiation, the planning proposal was gazetted bringing to effect the amended zoning and controls now applying to the site. The LEP was updated and became active in November 2022. This established the framework under which this SSDA is being progressed.

1.3.2 Concept Development Application

On 31 March 2023, a Regionally Significant Concept Development Application (Concept DA) was submitted under s.4.22(1) of the Environmental Planning and Assessment Act 1979 (DA2023/0178). Broadly, the Concept DA sought approval for a mixed-use community including total site GFA, building envelopes, public open space and general site and building configurations.

On 5 August 2023, the applicant filed an appeal to the Land and Environment on a deemed refusal basis following delays in the progression and assessment of the development application. A mediation meeting was held on 12 February 2024.

The Concept DA was withdrawn on 18 March 2024 following the lodgement of a new Concept and Stage 1 in-fill affordable housing SSDA.

1.3.3 Concept and Detailed Stage 1 SSDA

A request for SEARs with an associated Scoping Report was lodged with DPHI for a Concept and Stage 1 in-fill affordable housing SSDA at the site under section 26A, Schedule 1 of the Planning Systems SEPP. Site-specific SEARs were issued on 7 February 2024 under application number SSD-66020958.

The project broadly comprised the staged development of the site under a Concept SSDA for the provision of a total of seven (7) residential flat buildings, as well as an eastern mixed-use podium and associated car parking structures. A detailed first stage development application is concurrently proposed to deliver the eastern mixed-use podium and three residential buildings, (classified as shop top housing).

The proposed new SSDA omits the concept aspect from SSD-66020958, pursuing approval for the staged construction of the mixed-use precinct.

SSD-66020958 was withdrawn following the receipts of the industry-specific SEARs for the current detailed SSDA.

1.4 Proposed Development

The amended description is provided as follows:

- Site establishment works, tree removal, site preparation, earthworks and excavation, services augmentation, and remediation works.
- Development of seven residential buildings comprising four shop top housing buildings and three residential flat buildings as outlined below:
 - Buildings 1-3 are integrated with an eastern mixed-use podium building, while Building 4 is situated above mixed residential / commercial space, offering shop-top housing.
 - Buildings 5-7 consist of residential flat buildings.
- Delivery of 15% of the total floor space as affordable housing to be distributed across each of the 7 residential buildings, or within a consolidated building proposed proportionately as buildings are developed.
- Approximately 134,208 m² total floor space comprising:
 - A total of 2,496 m² retail GFA and approximately 2,710 m² commercial GFA.
 - 1,374 residential apartments
 - Communal amenity facilities for residents.
 - Building services areas.
- Activation of Crescent Street through a mix of amenity areas and pockets of open space.
- Shared car parking for Buildings 1 to 3 and the commercial and retail tenancies within the podium.
- Shared car parking for Buildings 4 to 7 within the above ground parking structures adjoining Buildings 4 to 5 and 6 to 7.

- Landscaping and accompanying place making works including:
 - Public open space, hard and soft landscape works.
 - Ground and rooftop communal open space.
 - Publicly accessible through-site links.
 - At grade car parking for the park, forecourt and retail areas.
 - Vehicle access via a new internal publicly accessible road and vehicle accessway.
 - New pedestrian footpaths and access arrangements to the site.
 - Café tenancy within park-side structure.
- Staged completion of a public park.
- Associated works involving the widening of Crescent Street and upgrades to the Crescent Street and Woodville Road intersection.

The entirety of the impacted areas will henceforth be termed the 'Subject Land,' covering approximately 3.83ha (**Figure 1; Appendix A**).

1.5 Site Location and Description

The Subject Property is an unoccupied lot located at 1 Crescent Street, Holroyd, within the Cumberland City Council Local Government Area (LGA) and the boundaries of the Gandangara Local Aboriginal Land Council (Aboriginal Land Council 2025) (**Figure 2**). The legal description of the Subject Property is Lot 700 in Deposited Plan 1241836.

The Subject Property is irregularly shaped, with an area of 37,877 m². It has primary frontage to Crescent Street to the south and additional frontage to Woodville Road to the east. The northern boundary adjoins Holroyd Sportsground, with the M4 Motorway situated beyond. The eastern portion of the Subject Property fronting Woodville Road has been identified by Transport for NSW for potential future acquisition related to planned intersection upgrades at Woodville Road, Parramatta Road, and the M4 Motorway.

The Subject Property is currently vacant and cleared, following the cessation of WesTrac's industrial operations in early 2018. It contains scattered pockets of landscaped vegetation, predominantly located along the southern and eastern boundaries adjacent to Crescent Street and Woodville Road. The Subject Property is bordered to the south by Crescent Street, to the east by Woodville Road, and to the north by a stormwater culvert followed by Holroyd Sportsground. The Parramatta Road/Church Street/Woodville Road intersection is located to the northeast.



Figure 1. The components of the Subject Land.

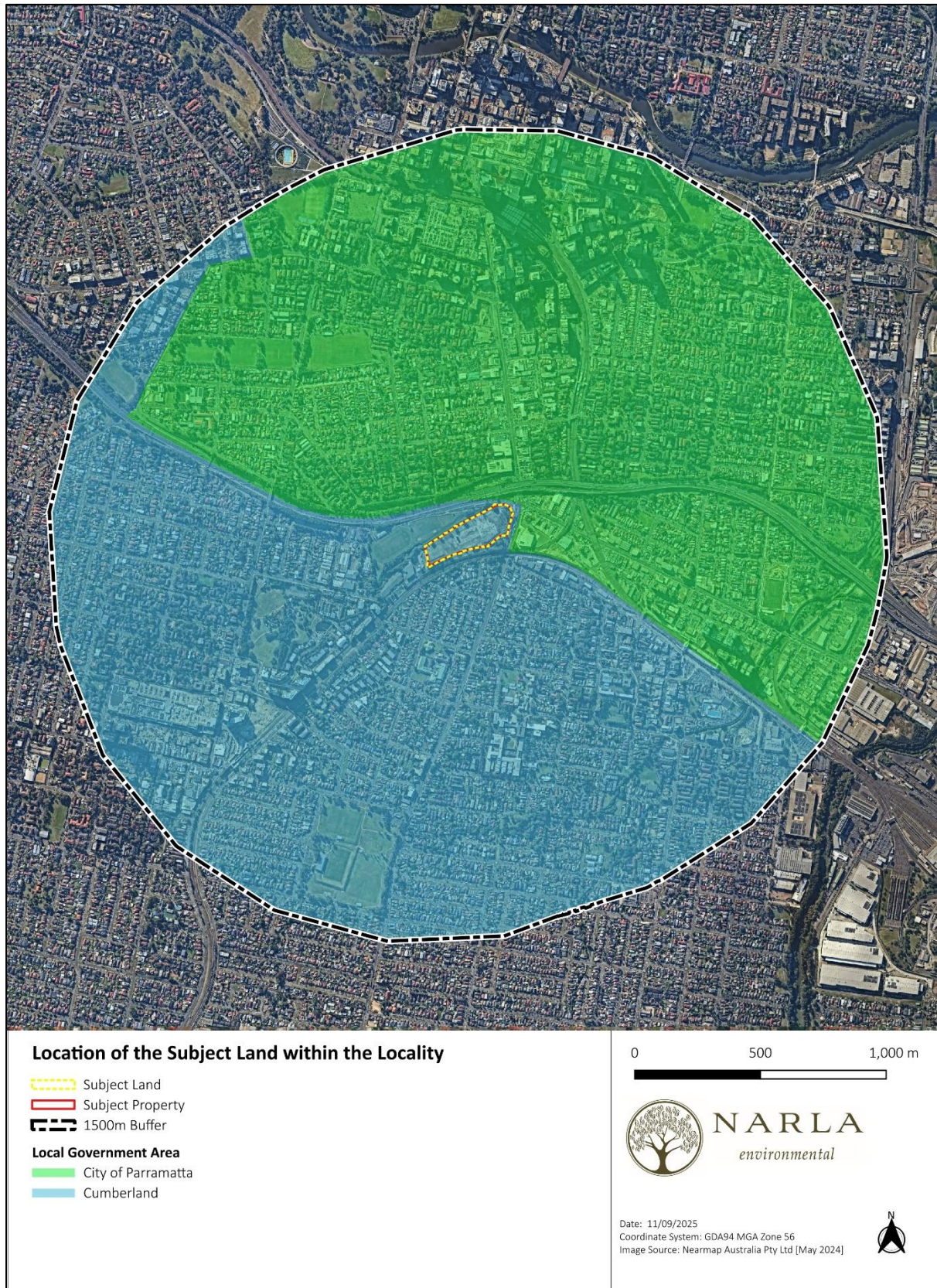


Figure 2. The location of the Subject Land within the locality.

1.6 Sources of Information Used

A thorough literature review was undertaken to gain an insight into the ecology and applicable legislation within the locality and the Cumberland Council LGA, including:

- Relevant State and Commonwealth Databases & Datasets:
 - NSW BioNet. The website of the Atlas of NSW Wildlife (NDCCEEW 2025d);
 - NSW BioNet. Threatened Biodiversity Data Collection (NDCCEEW 2025e);
 - NSW BioNet. Vegetation Classification System (NDCCEEW 2025f); and
 - Six Maps Clip & Ship (NSW Government Spatial Services 2025).
- Vegetation and Soil Mapping:
 - NSW State Vegetation Type Map (DPE 2022);
 - Soil Landscapes of Penrith 1:100,000 Sheet (Bannerman and Hazelton 2011)
- NSW State Guidelines:
 - Biodiversity Assessment Method (DPIE 2020a);
 - Guidance to assist a decision-maker to determine a serious and irreversible impact (DPIE 2019);
 - Biodiversity Assessment Method Calculator Version 1.5.0.00 (NDCCEEW 2025a);
 - Biodiversity Offsets and Agreement Management System (BOAMS);
 - Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method (DPIE 2020b); and
 - Threatened Species Survey and Assessment: Guidelines for developments and activities. Working Draft (DEC 2004).
- Council Documents:
 - Cumberland Local Environmental Plan (LEP) 2021;
 - Cumberland Development Control Plan (DCP) 2021.

Preparation of this SBDAR also involved the review of the following accompanying project documents:

- Arboricultural Impact Assessment – SSD-70283710: 1 Crescent Street, Holroyd (Eco Logical Australia, 2024).
- Landscape Package for 1 Crescent Street Holroyd (Arcadia, 2025)
- Planning Secretary's Environmental Assessment Requirements for SSD-70283710, Lot 700 DP1241836 within Cumberland (2024)
- Scoping Report for 1 Crescent Street Holroyd (Urbis, 2024);
- Site plans for 1 Crescent Street Holroyd (Woods Bagot, 2025)

These sources were used to gain an understanding of the natural environment and ecology of the Subject Land and its surrounds. Searches using NSW Wildlife Atlas (BioNet; NDCCEEW 2025d) were conducted to identify current threatened flora and fauna records within and surrounding the Subject Land. These data were used to assist in establishing the presence or likelihood of any biodiversity values as occurring on, or adjacent the Subject Land and helped inform our Ecologist on what to look for during the site assessment.

1.7 Aim and Approach

This report has been prepared in accordance with the BAM (DPIE 2020a) and aims to:

- Describe the biodiversity values present within the Subject Land, including the extent of native vegetation, vegetation integrity and the presence of Threatened Ecological Communities (TECs);

- Determine the habitat suitability within the Subject Land for candidate threatened species;
- Prepare an impact assessment in regard to potential impacts of the proposed development on biodiversity values, including potential prescribed impacts and SALLs within the Subject Land;
- Discuss and recommend efforts to avoid and minimise impacts on biodiversity values; and
- Calculate the biodiversity credits (i.e., ecosystem credits and species credits) that measure potential impacts of the development on biodiversity values. This calculation will inform the decision maker as to the number and class of offset credits required to be purchased and retired as a result of the proposed development.

2. Planted Native Vegetation

Following the ecological site assessment, as well as a review of the Arboricultural Impact Assessment and historical imagery (**Plate 1, Plate 2, Plate 3, Plate 4**), it has been confirmed that part of the vegetation on the Subject Land comprises planted native species and is not representative of remnant Cumberland Plain Woodland (PCT 3320) or any other locally occurring PCT (**Section 4.1**). These plantings include *Eucalyptus microcorys* (Tallowwood).

In accordance with the Streamlined Assessment Module – Planted Native Vegetation, these planted areas are excluded from ecosystem credit calculations. They are assessed only for potential habitat attributes (e.g. hollow-bearing trees, foraging or roosting opportunities). No biodiversity credits are generated for the removal of these plantings.

The decision-making key below provides a framework for the assessment of planted native vegetation using the BAM (DPIE 2020a). The Streamlined Assessment Module – Planted Native Vegetation has been applied to parts of the Subject Land that contain planted trees (Figure 8). The remaining vegetation within the Subject Land has been assessed using Appendix K of the BAM (DPIE 2020a).

2.1 Decision-making Key

2.1.1 Does the planted native vegetation occur within an area that contains a mosaic of planted and remnant native vegetation and which can be reasonably assigned to a PCT known to occur in the same IBRA subregion as the proposal?

No. *Eucalyptus microcorys* is not diagnostic of Cumberland Plain Woodland or other PCTs known to occur in the area.

2.1.2 Was the planted native vegetation established under a conservation obligation (BAM s.11.9(2)) with the primary objective of replacing or regenerating a PCT or threatened species habitat?

No. The planted vegetation has been installed for landscaping and amenity purposes within the former industrial use, not for ecological restoration.

2.1.3 Was the planted vegetation established under a threatened species recovery project, Saving our Species project, government-funded restoration project, or as a condition of consent requiring habitat planting?

The planted native vegetation has been planted for the purposes of landscaping and aesthetics within the distribution centre grounds using species that are commonly planted as street trees and other urban uses. This was not undertaken voluntarily for revegetation, environmental rehabilitation or restoration without a legal obligation to secure or provide for management of the native vegetation.

2.1.4 Was the planting undertaken voluntarily for revegetation, environmental rehabilitation or restoration without a legal obligation?

The planted native vegetation has been planted for the purposes of landscaping and aesthetics within the distribution centre grounds using species that are commonly planted as street trees and other urban uses. This was not undertaken voluntarily for revegetation, environmental rehabilitation or restoration without a legal obligation to secure or provide for management of the native vegetation.

2.1.5 Was the planting undertaken for functional, aesthetic, horticultural or plantation forestry purposes (e.g. landscaping, street trees, amenity planting)?

Yes. The vegetation was planted for landscaping and amenity purposes associated with the former industrial use of the Subject Land. Historic aerial imagery shows the establishment of plantings following site clearance, and several individuals occur in raised planting beds, further confirming their artificial origin (Plate 1, Plate 2, Plate 3, Plate 4). Species composition supports this conclusion, with non-local native species such as *Eucalyptus microcorys*. These species are widely used in urban landscaping but are not diagnostic of any PCT in the locality. The plantings are therefore considered aesthetic/functional under the Module.

2.1.6 Is the planted native vegetation a species listed as a widely cultivated native species on a list approved by the Secretary of the department (or an officer authorised by the Secretary)?

No. *Eucalyptus microcorys* is not included on the published ‘widely cultivated native species’ list. However, the species is widely planted in urban landscaping across NSW, particularly as a street and parkland tree, and can be considered a cultivated species in this context. The arborist survey confirms multiple individuals of *E. microcorys* within the Subject Land, which occur outside the natural range of the species (coastal forests of northern NSW and southern Queensland) and within an artificial planting context, including raised garden beds and post-clearing plantings evident in historic aerial imagery. These factors demonstrate the planted origin of the species and satisfy the Module’s criteria for ‘widely cultivated native species not on the published list’.

2.2 Assessment of Planted Native Vegetation for Threatened Species Habitat

The planted vegetation is excluded from PCT mapping, vegetation integrity scoring and ecosystem credit calculations. It is only considered for potential habitat attributes. The Subject Land did not contain evidence of threatened species credit species (flora or fauna), nor were any observed during survey. There are no historical records of threatened species within the Subject Land (NDCCEEW, 2025). Some planted canopy trees may provide intermittent foraging habitat for species such as *Pteropus poliocephalus* (Grey-headed Flying-fox). Management measures for potential fauna use are addressed in Section 7 of this BDAR.



Plate 1. Aerial imagery of the Subject Land, 1943 (NSW Spatial Services, 2025).



Plate 2. Aerial imagery of the Subject Land, 1979 (NSW Spatial Services, 2025).



Plate 3. Aerial imagery of the Subject Land showing raised concrete planter beds (Nearmaps Australia, 2019).

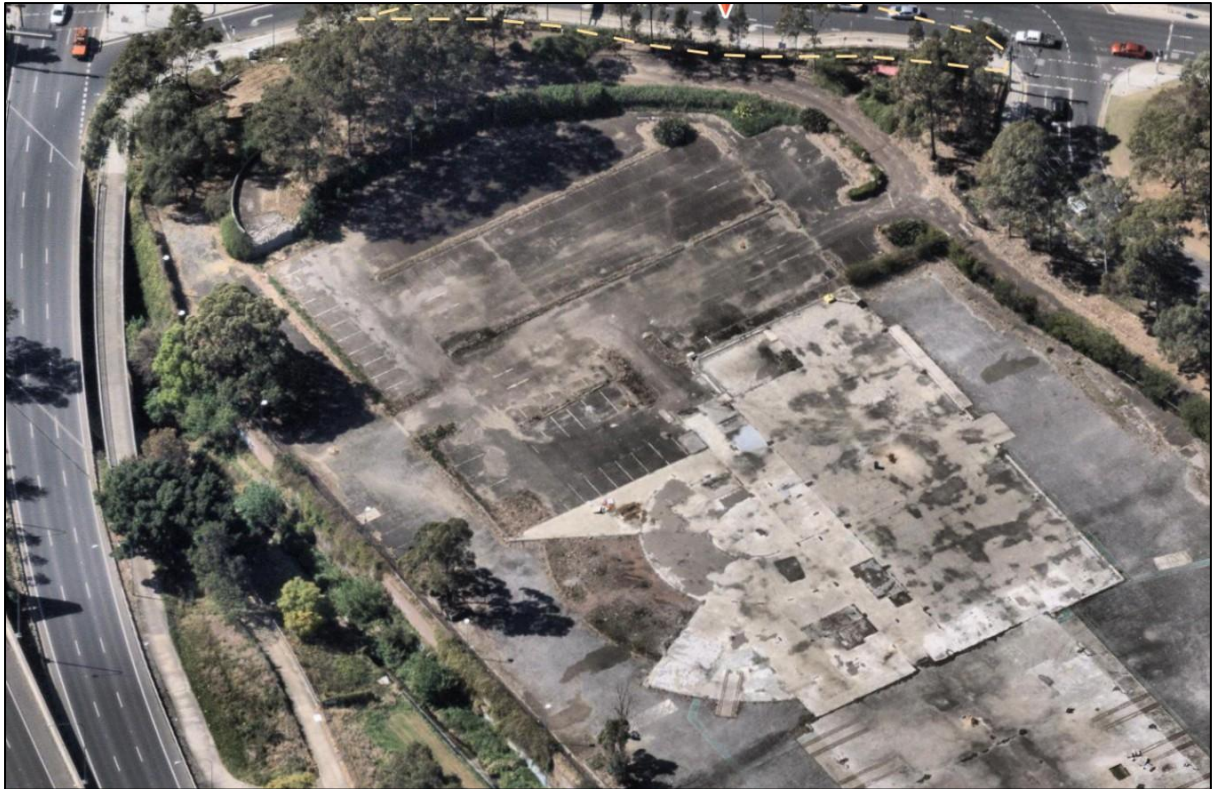


Plate 4. Aerial imagery of the Subject Land showing raised concrete planter beds (Nearmaps Australia, 2024).

3. Landscape

3.1 IBRA Bioregion and Subregion

The Subject Land occurs within the 'Cumberland' Interim Biogeographic Regionalisation for Australia 7 (IBRA7) Subregion, which is part of the 'Sydney Basin' IBRA7 Bioregion (**Figure 3**).

3.2 Mitchell Landscapes

Mitchell Landscapes (Mitchell 2002) groups ecosystems into meso-ecosystems representing larger natural entities based on topography and geology. The naming of ecosystems and meso-ecosystems was standardised so that each name provided information on location and a meaningful descriptive landscape term.

The Subject Land occurs within the 'Ashfield Plains' Mitchell Landscape Ecosystem (**Figure 4**). This landscape is characterized by undulating hills and valleys on horizontal Triassic shale and siltstone, with occasional quartz sandstones, especially near the margin of the Port Jackson landscape. The general elevation ranges from 0 to 45 meters, with local relief less than 20 meters. It is a coastal extension of the Cumberland Plain landscape. The soils on crests are red and brown texture-contrast, grading to yellow harsh texture-contrast soils in valleys. The vegetation includes open forest of Broad-Leaved Ironbark (*Eucalyptus fibrosa* ssp. *fibrosa*), Grey Box (*Eucalyptus moluccana*), and Tea-Tree (*Leptospermum* sp.) along creeks. Forests of Turpentine (*Syncarpia glomulifera*), red Mahogany (*Eucalyptus resinifera*), Grey Gum (*Eucalyptus punctata*), Sydney Blue Gum (*Eucalyptus saligna*), and Blackbutt (*Eucalyptus pilularis*) are present on moister sites, with a grassy understorey of Kangaroo Grass (*Themeda triandra*).

3.3 Topography, Geology and Soils

The Subject Land occurs on a flat terrain ranging from 11 to 14m above sea level (asl; Google Earth 2025). The Subject Land is mapped as occurring on the Blacktown soil landscape as per the soil landscape of the Penrith 1:100,000 sheet (Bannerman and Hazelton 2011). The Blacktown soil landscape is characterized by gently undulating rises on Wianamatta Group shales, with local relief up to 30 meters and slopes usually greater than 5%. It features broad, rounded crests and ridges with gently inclined slopes. The area predominantly consists of cleared Eucalypt woodland and tall open forest (dry sclerophyll forest). The soils are shallow to moderately deep (greater than 100 cm) hardsetting mottled texture contrast soils, including Red and Brown Podzolic Soils (Dr3.21, Dr3.31, Db2.11, Db2.21) on the crests, grading to Yellow Podzolic Soils (Dy2.11, Dy3.11) on the lower slopes and in drainage lines. Limitations of this landscape include localized seasonal waterlogging, a localized water erosion hazard, moderately reactive highly plastic subsoil, and localized surface movement potential. (Bannerman and Hazelton 2011).

The Subject Land did not contain any areas of geological significance, such as karsts, caves, cliffs or crevices nor are any believed to occur within the broader locality owing to the generally flat landscape. In addition, no areas within the Subject Land or wider locality (1,500m buffer) are mapped as occurring on acid sulfate soils.

3.4 Hydrology

No mapped watercourses occur within the Subject Land, however a 10m riparian buffer associated with a 1st order concrete-lined watercourse intersects the Subject Land. Several watercourses ranging from 1st – 2nd order occur within the 1,500m buffer surrounding the Subject Land (**Figure 5**).

Under Part 2.28 of the Water Management (General) Regulation 2018—'Activities on waterfront land if river is concrete lined or in pipe'—activities carried out on waterfront land related to a river with a fully concrete-lined

channel or a fully enclosed pipe channel are exempt from requiring a controlled activity application. Accordingly, the 10 m riparian buffer intersecting the Subject Land does not trigger the requirement for a controlled activity, as the channel is fully concrete lined.

3.5 State Environmental Planning Policy (Resilience and Hazards) 2021: Chapter 2 – Coastal Management

No areas identified as 'Coastal Wetlands' or 'Littoral Rainforest' as per Chapter 2 of the State Environmental Planning Policy (Resilience and Hazards) 2021 are mapped within the Subject Land or within the broader locality (1500m buffer).

3.6 Native Vegetation Cover and Connectivity

Native vegetation cover and connectivity have been assessed in accordance with Section 3.1.3 and 3.2 of the BAM (DPIE 2020a). The native vegetation cover will be used to assess the habitat suitability of the Subject Land for threatened species. Areas of connectivity will determine the extent of habitat that may facilitate the movement of threatened species across their range. A 1,500m buffer around the boundary of the Subject Land was calculated to determine the extent of native vegetation and habitat connectivity.

As areas within the 1500m buffer were not assessed to officially determine whether native vegetation was present, the precautionary principle was used, and all areas of grassland and canopy vegetation was assumed to have native vegetation present. Native vegetation was therefore found to cover approximately 36.93ha within the buffer circle (total area = 836.92ha) and was assigned to the 0-10% class.

Minor areas of connectivity that may facilitate the movement of threatened species to and from the Subject Property were evident within the 1,500m to the south of the Subject Land (**Figure 7**).

3.7 Areas of Outstanding Biodiversity Value

No Areas of Outstanding Biodiversity Value occur on the Subject Land or surrounding area.

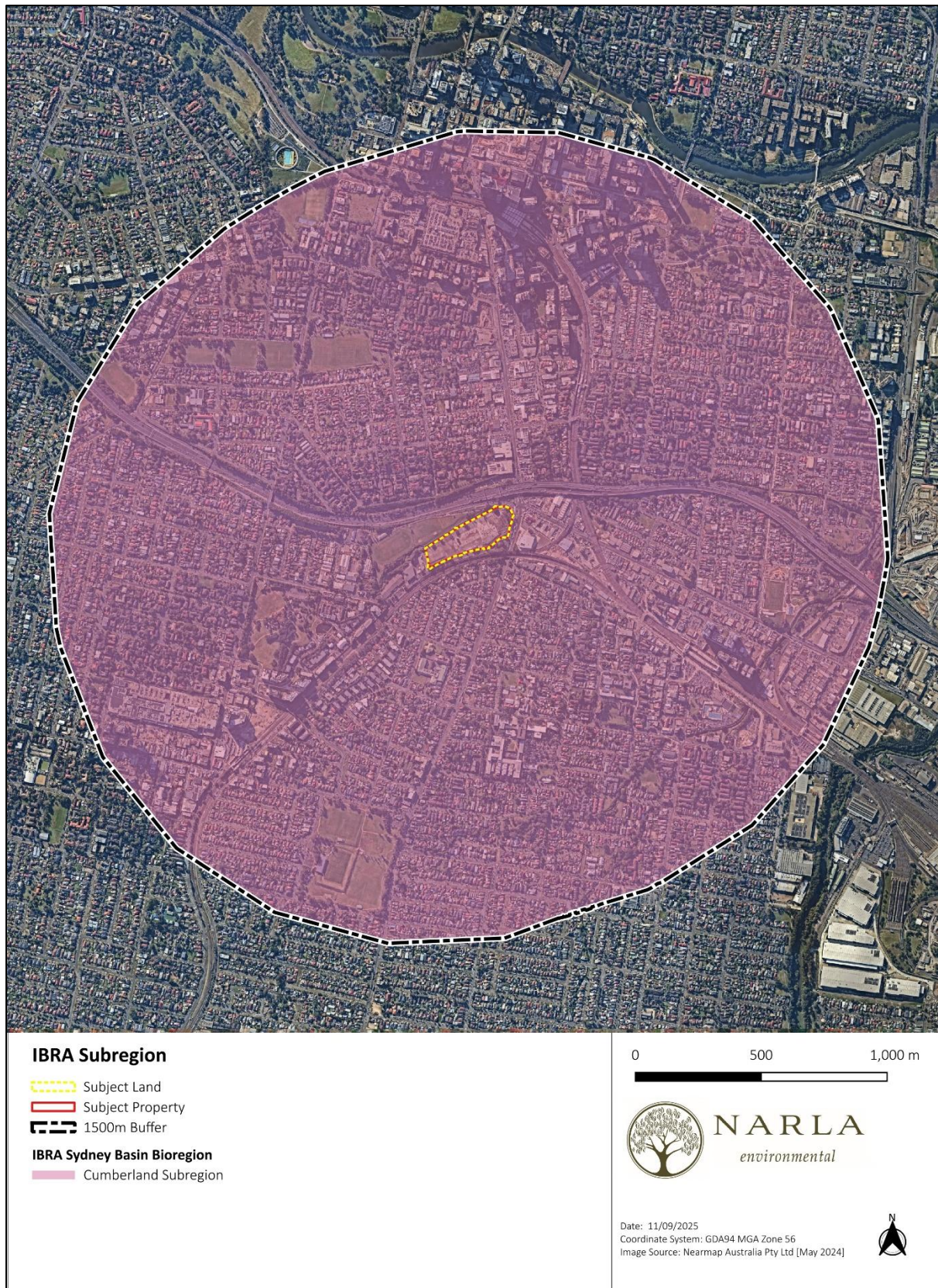


Figure 3. IBRA Bioregion and Subregion of the Subject Property and Subject Land, and within a 1,500m buffer.

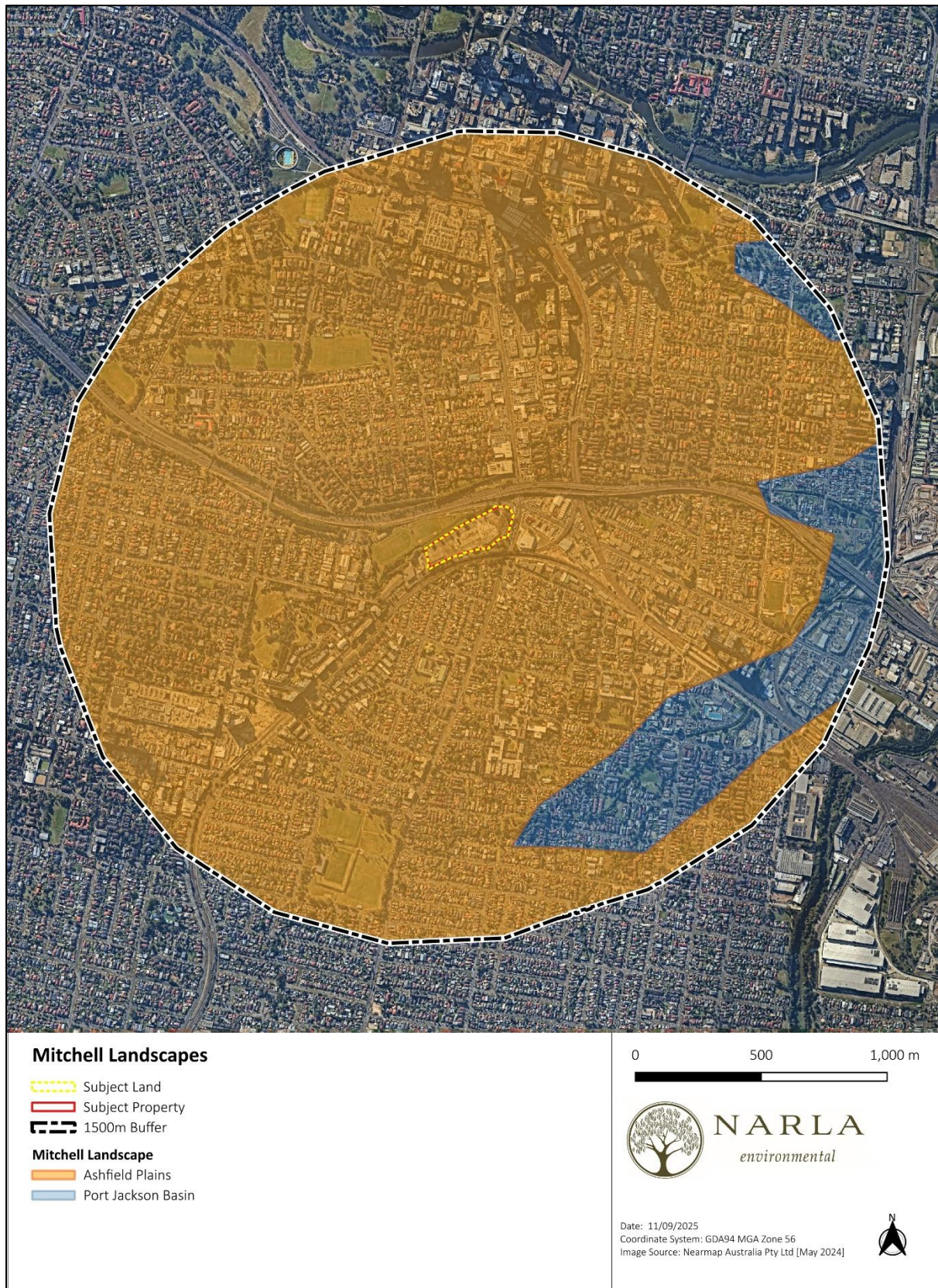


Figure 4. Mitchell Landscapes of the Subject Property and Subject Land, and within a 1,500m buffer.



Figure 5. Rivers and streams (with associated riparian buffers) occurring within the 1,500m buffer.



Figure 6. Watercourses within the Subject Land.

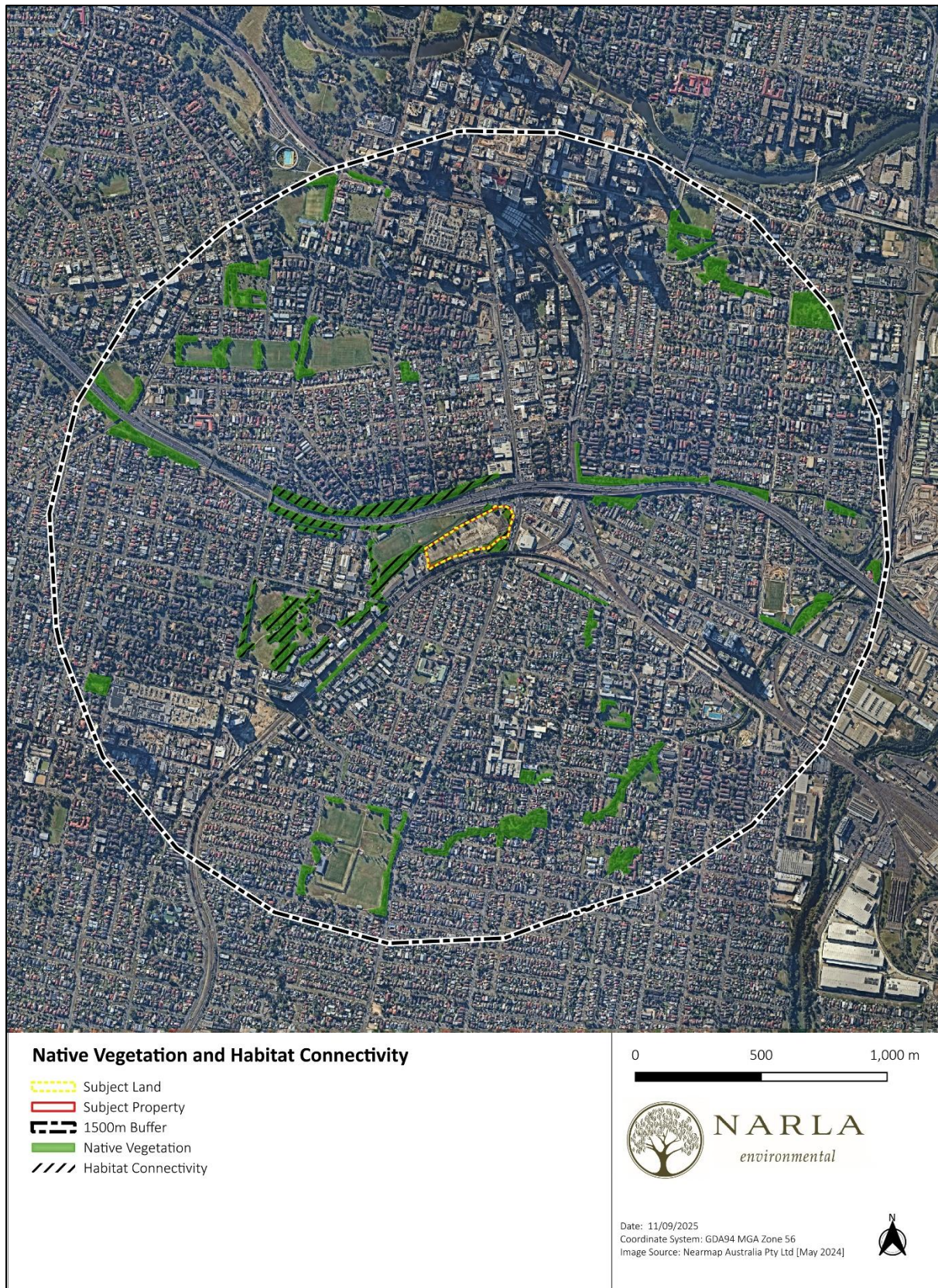


Figure 7. The extent of native vegetation within the 1,500m buffer.

4. Native Vegetation

4.1 Dominant Plant Community Type (PCT) Identified within the Subject Land

4.1.1 Historically Mapped Vegetation

No native vegetation has been historically mapped by the State Vegetation Type Map (DPE 2022) within the Subject Land or within a 1500m buffer.

4.1.2 Plant Community Type Selection Process

Plant Community Type (PCT) selection for the vegetation community occurring on the Subject Land was undertaken using information and databases provided in the BioNet Vegetation Classification System (NDCCEEW 2025f). The following selection criteria were used in the PCT Filter Tool to develop the PCT shortlist:

- IBRA Bioregion: Sydney Basin
- IBRA Subregion: Cumberland
- Dominant Species: *Corymbia maculata*, *Eucalyptus tereticornis*, *Lomandra longifolia*.

This process delivered a selection of ten (10) PCT's that occur within the Cumberland IBRA Subregion (and Sydney Basin Bioregion) that had all three (3) observed dominant species (i.e., the highest potential of occurring within the Subject Land).

The geographical distribution and landscape position characterised by each shortlisted PCT was then compared against the location and landscape of the Subject Land. It was found that the Subject Land was located in the right distribution and contained the appropriate landscape and geological attributes for three (3) of the candidate PCTs (**Table 3**). The steps taken to justify the presence/absence of the candidate PCTs within the Subject Land are detailed in **Table 4**.

Table 3. Output from the PCT Filter Tool (NDCCEE 2025f) and subsequent shortlisting of dominant PCTs. Green shading indicates the selected best fit dominant PCT.

Plant Community Type (PCT)	Subject Land within known geographic distribution/ landscape position	No. of Floristic Matches	<i>Eucalyptus tereticornis</i>	<i>Corymbia maculata</i>	<i>Lomandra longifolia</i>
3039: Sydney Coastal Lilly Pilly-Palm Gallery Rainforest	No. This PCT is a mid-high to very tall, dense rainforest, or occasionally sparse to mid-dense, very tall sclerophyll open forest with rainforest understorey, which occurs mainly in coastal gullies, between Seal Rocks near Forster, and Bundeena. This PCT occurs in gullies and occasionally on sheltered slopes, either in coastal locations within one kilometre of the sea or around the fringes of estuaries, or rarely on slightly more inland alluvial or estuarine flats. It occurs in moderately warm, moderately wet locations receiving 1180-1350 mm mean annual rainfall, at low elevations of up to 70 metres asl. The Subject Land does not occur within the correct geographic position or topography to match this PCT.	3	✓	✓	✓
3040: Sydney Coastal Foreshores Gully Rainforest	No. This PCT occurs in sandstone gullies and sheltered escarpments fringing Sydney and Central Coast saltwater lakes and harbors. It occurs on low-lying Hawkesbury and occasionally Narrabeen sandstones, mainly at elevations of less than 60 meters asl, within the densely populated and urbanized parts of greater metropolitan Sydney. It is common on slopes above harbor foreshores, and less frequently near lakes and estuaries, with northern outliers occurring on the fringes of Lake Macquarie. The proximity to these maritime influences leads to some floristic characteristics shared with rainforests within the littoral zone elsewhere in the Sydney region. The Subject Land does not occur within the correct geographic position, geology or topography to match this PCT.	3	✓	✓	✓
3110: Greater Sydney Enriched Grey Myrtle Dry Rainforest	No. This PCT is a mid-high to very tall, mid-dense to dense rainforest, sometimes with eucalypt emergent, or rarely a very tall to extremely tall sclerophyll open forest with a dense rainforest sub-canopy or mid-stratum. This PCT occurs most extensively in the Sydney Basin hinterland, in ranges and hills between the Hunter valley near Singleton and the Ettrema catchment west of Nowra. This PCT occurs mainly in mild, relatively dry locations receiving 720-900 mm mean annual rainfall, at mid-elevations of 140-510 metres asl. It occurs mainly on sandstone lithology, occasionally on shale or ignimbrite, along creeks, in gullies or on steep rocky slopes, where there is a degree of protection from fire. The Subject Land does not occur within the correct geographic position, elevation, geology or topography to match this PCT.	3	✓	✓	✓
3262: Sydney Turpentine Ironbark Forest	No. This PCT is a tall to very tall sclerophyll open forest with a mid-stratum of mixed sclerophyll and mesophyll shrubs, along with a ground layer of grasses and forbs. It is typically found on shale or sheltered shale-sandstone soils, mainly in the northern suburbs of Sydney and the lower Blue Mountains. These forests occur as small remnants	3	✓	✓	✓

Plant Community Type (PCT)	Subject Land within known geographic distribution/ landscape position	No. of Floristic Matches	<i>Eucalyptus tereticornis</i>	<i>Corymbia maculata</i>	<i>Lomandra longifolia</i>
	within mosaics of urban land use in the shale-dominated landscapes of higher rainfall zones in the Sydney Metropolitan area. The highest number of remnants is found in the northern suburbs between Baulkham Hills and Ku-ring-gai, although small areas remain in Sutherland, Heathcote, Menai, the lower Blue Mountains, and the Oakdale plateau west of Picton. Only a few remnants remain on the Wianamatta Group shales of the eastern Cumberland Plain between Villawood and Bankstown. The Subject Land does not occur within the correct geographic position to match this PCT.				
3321: Cumberland Shale-Sandstone Ironbark Forest	Yes. This PCT occurs on the fringes of the Cumberland Plain in the Sydney Basin. It is one of a suite of forests that are associated with the subtle intergrade between clay-rich shale soil and the coarse sandy substrates of the sandstone plateau. This PCT occurs in a warm, moist climate on the western edge of the Woronora Plateau, on the rim of the Nepean and Georges rivers, along the edge of the Lapstone Monocline and in Hawkesbury and The Hills local government areas. The Subject Land occurs within the correct geographic position and geology to match this PCT.	3	✓	✓	✓
3594: Sydney Coastal Sandstone Foreshores Forest	No. This PCT is found along the foreshores of major waterways and coastal escarpments of Sydney. The low elevations adjoining major waterways expose the vegetation to a maritime influence brought by salt-laden southerly winds. It is mainly distributed between the Hacking River and Pittwater. The Subject Land does not occur within the correct geographic position to match this PCT.	3	✓	✓	✓
4023: Coastal Valleys Riparian Forest	Yes. This PCT occurs as a Casuarina open forest with a dense grassy ground layer that is found adjacent to streams or on river flats, primarily in the South Creek catchment of the Cumberland Plain to the west of Sydney and from Ellalong to north of Rothbury in the central Hunter valley. It is possible that this PCT represents a successional state in a community that is re-establishing following clearing. This PCT typically occurs at elevations below 70 metres asl in a hot, dry climate. The Subject Land occurs within the correct geographic position and geology to match this PCT.	3	✓	✓	✓
4025: Cumberland Red Gum Riverflat Forest	No. This PCT occurs on alluvial flats alongside streams that drain the Cumberland Plain or more rarely the broad alluvial flats of the Hawkesbury and Nepean river systems to the west of Sydney. It typically occurs in a warm, moist climate at low elevation with a mean of 60 metres asl, however may occur up to 320 metres in southern parts of the Cumberland Plain. The Subject Land does not occur on the correct geology to match this PCT.	3	✓	✓	✓

Plant Community Type (PCT)	Subject Land within known geographic distribution/ landscape position	No. of Floristic Matches	<i>Eucalyptus tereticornis</i>	<i>Corymbia maculata</i>	<i>Lomandra longifolia</i>
PCT 3319: Cumberland Shale Hills Woodland	No. This PCT occurs on rises and upper slopes of hills south from Cecil Hills, in the south-western part of the Cumberland Plain to the west of Sydney. It is most extensive in Campbelltown, Camden, and Wollondilly local government areas. This PCT typically occurs in a warm, moist climate between 90-300 metres asl. The Subject Land does not occur at the correct elevations to match this PCT.	3	✓	✓	✓
PCT 3320: Cumberland Shale Plains Woodland	Yes. This PCT occurs on the undulating shale plains of Western Sydney, occupying much of the plain between Bankstown and the Hawkesbury and Nepean rivers. It typically occurs in a warm, moist climate below 120 metres asl however can occur up to 200 metres asl on the undulating terrain between Douglas Park and Campbelltown to the east of the Nepean River. Although this PCT typically occurs on shale substrates derived from Wianamatta Group geology, it is known to occur on alluvial substrates. The Subject Land occurs within the correct geographic position and geology to match this PCT.	3	✓	✓	✓

Table 4. PCT selection criteria. Green indicates the selected PCT.

Candidate PCT	Characteristics (NDCCEEW 2025f)	Justification
3320: Cumberland Shale Plains Woodland	A tall sclerophyll open forest or woodland with a sparse mid-stratum of soft-leaved shrubs and small trees with a grassy ground cover on the undulating Wianamatta Group shale plains of western Sydney. The canopy very frequently includes <i>Eucalyptus tereticornis</i> and <i>Eucalyptus moluccana</i>, with ironbarks (<i>Eucalyptus crebra</i> and <i>Eucalyptus fibrosa</i>) occasionally present and sometimes prominent in localised areas. The sparse shrub to small tree layer very frequently includes <i>Bursaria spinosa</i> and one or more species of <i>Acacia</i>, of which <i>Acacia parramattensis</i>, <i>Acacia decurrens</i> and <i>Acacia falcata</i> are the most frequent and abundant. Presence of these <i>Acacia</i> species helps to distinguish this PCT from the related PCT 3319 on rises of the southern Cumberland Plain which typically includes <i>Acacia implexa</i>. The mid-dense ground layer typically includes grasses, forbs, twiners and hardy small ferns. <i>Microlaena stipoides</i> is almost always present and <i>Themeda triandra</i>, <i>Dichondra repens</i>, <i>Brunoniella australis</i>, <i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>, <i>Desmodium varians</i>, <i>Aristida vagans</i> and <i>Glycine tabacina</i> are very frequent. This is the most widespread PCT on the Cumberland Plain, occupying much of the plain between Bankstown and the Hawkesbury and Nepean rivers. It typically occurs in a warm, moist climate below 120 metres asl however can occur up to 200 metres asl on the undulating terrain between Douglas Park and Campbelltown to the east of the Nepean River. A northern outlier occurs near Maroota on a small remnant on a narrow shale ridge. While widespread on the main part of the plain, this PCT primarily occurs in small, often disturbed patches within a rural or urban matrix. In the hilly country to the west of the Nepean River, this PCT is replaced by PCT 3319. On thinner shales above sandstone around the periphery of the Cumberland Plain, it grades into PCT 3321. Ironbarks are very frequent and <i>Eucalyptus punctata</i> is common in the canopy of PCT 3321, and <i>Eucalyptus moluccana</i> and <i>Eucalyptus tereticornis</i> are both rare.	Narla has designated this PCT due to the presence of <i>Eucalyptus tereticornis</i> on an elevation below 120m asl and a shale-dominated geology. While this PCT shares similarities with PCT 4025, <i>Corymbia maculata</i> dominates on the Subject Land. PCT 3320 exhibits a higher typical frequency for this species (11 occurrences for PCT 3320 versus 5 for PCT 4025).
3321: Cumberland Shale-Sandstone Ironbark Forest	A tall sclerophyll open forest with a mid-stratum of dry and soft-leaved shrubs or small trees and a ground cover of grasses and graminoids found on the fringes of the Cumberland Plain in the Sydney Basin. It is one of a suite of forests that are associated with the subtle intergrade between clay-rich shale soil and the coarse sandy substrates of the sandstone plateau. The canopy almost always includes ironbark eucalypts (<i>Eucalyptus crebra</i>, <i>Eucalyptus</i>	Narla has not allocated this PCT due to the absence of key diagnostic ironbark and stringybark species, as well as the lack of occurrence on a shale/sandstone intergrade at the site.

Candidate PCT	Characteristics (NDCCEEW 2025f)	Justification
	<i>fibrosa</i>) and commonly <i>Eucalyptus punctata</i> and stringybark eucalypts (<i>Eucalyptus globoidea</i> or <i>Eucalyptus eugenoides</i>). A sparse small tree layer almost always includes one or more <i>Acacia</i> species, of which <i>Acacia parramattensis</i> and <i>Acacia decurrens</i> are the most frequent and abundant, commonly with <i>Allocasuarina littoralis</i> or <i>Allocasuarina torulosa</i>. The shrub layer includes a mix of species that typically occur on sandstone soils and shale substrates. The sandstone shrubs very frequently include <i>Persoonia linearis</i> and shale species commonly include <i>Bursaria spinosa</i> and <i>Leucopogon juniperinus</i>. The mid-dense ground layer typically consists of graminoids, forbs and hardy ferns, and very frequently includes <i>Microlaena stipoides</i>, <i>Lobelia purpurascens</i>, <i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>, <i>Entolasia stricta</i>, <i>Aristida vagans</i>, <i>Lepidosperma laterale</i>, <i>Themeda triandra</i> and <i>Lomandra multiflora</i> subsp. <i>multiflora</i>. This PCT occurs in a warm, moist climate on the western edge of the Woronora Plateau, on the rim of the Nepean and Georges rivers, along the edge of the Lapstone Monocline and in Hawkesbury and The Hills local government areas. It is floristically related to PCT 3448 which differs in that <i>Eucalyptus fibrosa</i> and melaleucas (<i>Melaleuca decora</i> or <i>Melaleuca nodosa</i>) are almost always present, and it is primarily found on Tertiary alluvium or shale-gravel soils. There is much gradation between these PCTs, especially in the northern Holsworthy. On soil where shale has a lesser influence on the vegetation composition, this PCT grades into either PCT 3616 or 3619, in which ironbarks, <i>Bursaria spinosa</i> and soft ground covers such as <i>Lobelia purpurascens</i>, <i>Cheilanthes sieberi</i> subsp. <i>sieberi</i> and <i>Dichondra repens</i> are less frequent than in this PCT. Trees, shrubs and hardier groundcovers that are more frequent in PCT 3616 include <i>Eucalyptus punctata</i>, <i>Corymbia gummifera</i>, <i>Leptospermum trinervium</i> and <i>Acacia linifolia</i>, <i>Lomandra obliqua</i> and <i>Cyathochaeta diandra</i>. <i>Corymbia gummifera</i> is very frequent in PCT 3619 which also includes sandstone heath species and hardier groundcovers such as <i>Banksia spinulosa</i>, <i>Persoonia levis</i>, <i>Lambertia formosa</i>, <i>Lomandra obliqua</i> and <i>Cyathochaeta diandra</i>. With a greater shale influence, this PCT grades into PCT 3320 which includes <i>Eucalyptus tereticornis</i> and <i>Eucalyptus moluccana</i> in its canopy.	
4023: Coastal Valleys Riparian Forest	A tall <i>Casuarina</i> open forest with a dense grassy ground layer that is found adjacent to streams or on river flats, primarily in the South Creek catchment of the Cumberland Plain to the west of Sydney and from Ellalong to north of	Narla has not allocated this PCT due to the absence of any <i>Casuarina</i> species on the site.

Candidate PCT	Characteristics (NDCCEEW 2025f)	Justification
	Rothbury in the central Hunter valley. The canopy is one of the distinguishing features of this PCT, very frequently including a high cover of relatively young <i>Casuarina glauca</i> amongst a mix of old and young eucalypts, commonly red gums (<i>Eucalyptus amplifolia</i> and <i>Eucalyptus tereticornis</i>) or occasionally <i>Eucalyptus moluccana</i>. The only common species in the sparse shrub layer is <i>Bursaria spinosa</i>. There is a dense ground cover, typical of river flat forests, that is typically comprised of grasses, forbs, twiners and ferns. A high cover of <i>Microlaena stipoides</i> is almost always present, with more scattered <i>Brunoniella australis</i> and <i>Dichondra repens</i> being very frequent. Common ground covers include <i>Solanum prinophyllum</i>, <i>Glycine tabacina</i>, <i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>, <i>Oplismenus aemulus</i> and <i>Lobelia purpurascens</i>. It is possible that this PCT represents a successional state in a community that is re-establishing following clearing. In addition, the dominance of the salt-tolerant <i>Casuarina glauca</i> may indicate saline conditions. This PCT typically occurs at elevations below 70 metres asl in a hot, dry climate. On broader floodplains of the Cumberland Plain, it grades into PCT 4025, which rarely includes <i>Casuarina glauca</i> however nevertheless has considerable floristic overlap with this PCT. Near the edge of the floodplain, it adjoins the grassy forests of either the Cumberland Plain (PCT 3320) or the Hunter valley (PCT 3315). Again, <i>Casuarina glauca</i> is rare in these PCTs.	

4.1.3 Final PCT and Vegetation Zone Selection

The field survey confirmed that one (1) PCT was identified within the Subject Land:

- PCT 3320: Cumberland Shale Plains Woodland.

In addition to this PCT, there was areas of exotic vegetation within the Subject Land.

Overall, three (3) vegetation zones were identified within the Subject Land that consisted of the differing vegetation types, in addition to areas of exotic vegetation (**Figure 8**):

- Zone 1: PCT 3320 (Canopy)
- Zone 2: PCT 3320 (Regenerating Stems)
- Zone 3: Planted Native Vegetation

These vegetation zones are detailed in **Table 5**, Table 6, and Table 7.

Table 5. Native vegetation identified within the Subject Land.

PCT 3320: Cumberland Shale Plains Woodland

			
Vegetation class	Coastal Valley Grassy Woodlands		
Vegetation Zone	Zone 1: PCT 3320 (Canopy)		Zone 2: PCT 3320 (Regenerating Stems)
Extent within Subject Land (approximate)	0.35		0.09
Field survey effort	One (1) 50x20m and one (1) 10x100m BAM plot was established. The VIS plot was situated in vegetation that was most likely to represent the composition, structure, and function of the PCT in the Subject Land (Appendix B).		One (1) 10x100m BAM plot was established. The VIS plot was situated in vegetation that was most likely to represent the composition, structure, and function of the PCT in the Subject Land (Appendix B).

PCT 3320: Cumberland Shale Plains Woodland

Description of vegetation	The canopy comprises <i>Corymbia maculata</i> and <i>Eucalyptus tereticornis</i> . The mid-storey includes plantings of <i>Schinus</i> spp., <i>Strelitzia reginae</i> and <i>Bougainvillea</i> spp. Exotic climbing or scrambling taxa such as <i>Jasminum polyanthum</i> are also present within this stratum. The ground layer is dominated by exotic taxa including <i>Ehrharta erecta</i> , <i>Bidens pilosa</i> , <i>Sonchus oleraceus</i> , <i>Sonchus arvensis</i> , <i>Senecio madagascariensis</i> , <i>Conyza bonariensis</i> , <i>Modiola caroliniana</i> , <i>Medicago polymorpha</i> , <i>Cirsium vulgare</i> , <i>Melinis repens</i> , <i>Fumaria capreolata</i> , <i>Lactuca floridiana</i> , <i>Taraxacum officinale</i> and <i>Hypochaeris glabra</i> . Occasional native forbs such as <i>Daucus glochidiatus</i> are also present but are less common, as well as <i>Lomandra longifolia</i> .	The canopy is formed by a mixture of native and exotic tree species with some regenerating stems. Native species recorded include <i>Eucalyptus tereticornis</i> , <i>Corymbia maculata</i> and <i>Acacia parramattensis</i> . Exotic tree species present include <i>Phoenix canariensis</i> . The mid-storey is limited, with scattered individuals of the native <i>Pittosporum undulatum</i> . The ground layer is dominated by exotic graminoids and forbs. Exotic grasses recorded include <i>Ehrharta erecta</i> , <i>Setaria distans</i> and <i>Melinis repens</i> . Exotic forbs include <i>Sonchus oleraceus</i> , <i>Brassica fruticulosa</i> , <i>Cirsium vulgare</i> , <i>Modiola caroliniana</i> , <i>Chenopodium robertianum</i> and <i>Bidens pilosa</i> . In addition, several exotic climbing species are present, including <i>Ipomoea</i> spp., <i>Passiflora edulis</i> and <i>Araujia sericifera</i> .
Structure of vegetation	The average of the two plots is used for this section. Tree cover was 37.5%, shrub 0%, grass & grass like 3.5%, forb 0.6%, fern 0% and other 0%. No regenerating stems were present, with stem classes present in the 10-19, 20-29, 30-49 DBH classes. 2 large tree (>50cm DBH) was also recorded. No hollow bearing trees were present. Litter cover 35.5%. No fallen logs recorded. High threat exotic (HTE) cover 27.25%.	Tree cover was 60%, shrub 3%, grass & grass like 0%, forb 0%, fern 0% and other 0%. Regenerating stems were present, with stem classes present in the 10-19, 20-29, 30-49 DBH classes. 1 large tree (>50cm DBH) was recorded. No hollow bearing trees were present. Litter cover 51%. No fallen logs recorded. High threat exotic (HTE) cover 14%.
TEC Status (BC Act 2016)	Conforms to the BC Act listed CEEC, Cumberland Plain Woodland in the Sydney Basin Bioregion (see Section 4.2.1).	Conforms to the BC Act listed CEEC, Cumberland Plain Woodland in the Sydney Basin Bioregion (see Section 4.2.1).
TEC Status (EPBC Act 1999)	Does not conform to the EPBC Act listed CEEC, Cumberland Shale Plains Woodland and Shale-Gravel Transition Forest (see Section 3.2.2).	Does not conform to the EPBC Act listed CEEC, Cumberland Shale Plains Woodland and Shale-Gravel Transition Forest (see Section 3.2.2).
Scientific Reference from VIS (NDCCEW 2025f)	Connolly, D., Binns, D., Turner, K., Hager, T., Lyons, M., Magarey, E. (in prep.) A revised classification of Plant Community Types for eastern New South Wales. NSW DPE, Parramatta	

Table 6. Planted Native Vegetation identified within the Subject Land.

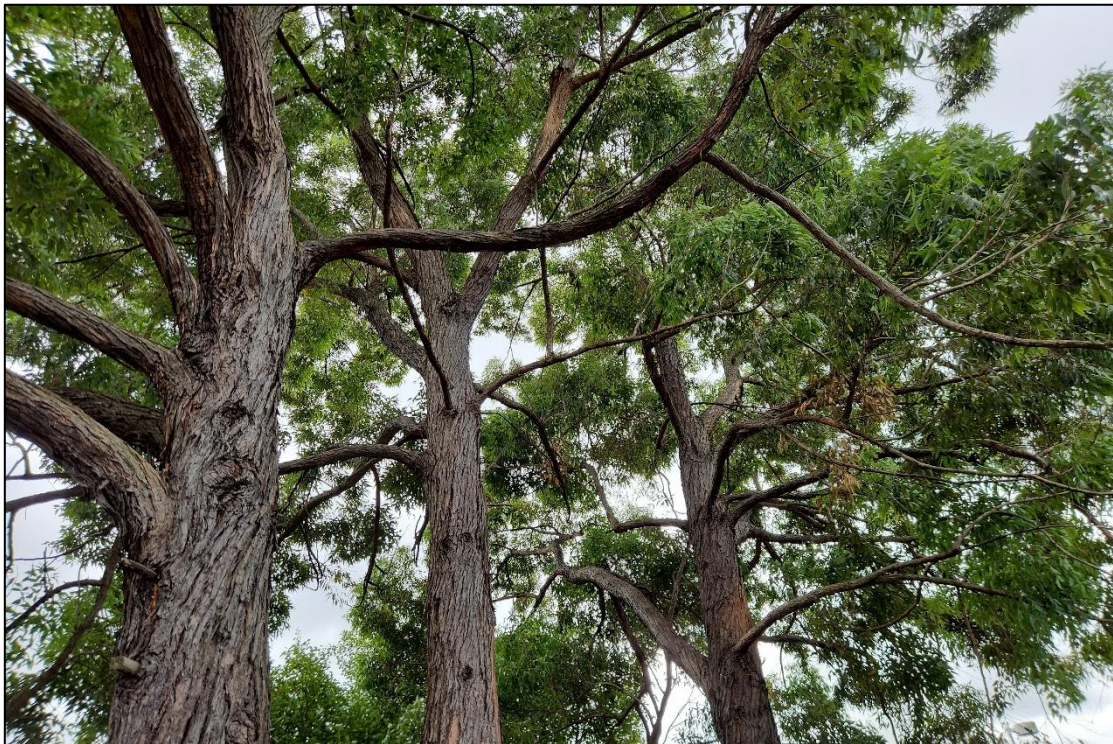
Zone 3: Planted Native Vegetation	
	
Vegetation class	N/A
Total area within the Subject Land	0.14ha
Description of vegetation	Planted natives in this zone include <i>Eucalyptus microcorys</i> which is naturally restricted to coastal forests. These are commonly used in landscaping and amenity plantings but are not diagnostic of Cumberland Plain Woodland or any other locally occurring PCTs. Several specimens occur in raised planting beds and historic aerial imagery shows their establishment post-clearing, confirming their planted origin (Plate 1, Plate 2, Plate 3, Plate 4). The ground layer across this zone comprises exotic grasses and weeds with large areas of hardstand.
TEC Status	N/A

Table 7. Exotic Vegetation identified within the Subject Land.

Zone 3: Exotic Vegetation	
	
Vegetation class	N/A
Total area within the Subject Land	0.14ha
Description of vegetation	Exotic vegetation cover was present in landscaped areas and in locations where plants had established opportunistically within cracks and gaps in concrete. In landscaped areas, a range of horticultural canopy trees and shrub species commonly used for amenity planting and hedging were recorded, including <i>Cinnamomum camphora</i> , <i>Jacaranda mimosifolia</i> , <i>Murraya</i> spp. and <i>Strelitzia</i> spp. Additional ornamental plantings such as <i>Bougainvillea</i> spp. were also observed. In disturbed hardstand areas, exotic grasses were dominant, with <i>Ehrharta erecta</i> and <i>Chloris gayana</i> forming the main ground cover.
TEC Status	N/A



Figure 8. Narla field validated vegetation mapping and location of BAM VIS plot within and surrounding the Subject Land.

4.2 Threatened Ecological Communities

4.2.1 Listing under the Biodiversity Conservation Act 2016 Cumberland Plain Woodland in the Sydney Basin Bioregion - Critically Endangered Ecological Community

Cumberland Plain Woodland (CPW) is the name given to the ecological community in the Sydney Basin bioregion associated with clay soils derived from Wianamatta Group geology, or more rarely alluvial substrates, on the Cumberland Plain, a rainshadow area to the west of Sydney's Central Business District. The mean annual rainfall of this area is typically in the range of 700-900 mm and is generally lower than that received on more elevated terrain that partially surrounds the Plain. The community typically occurs on flat to undulating or hilly terrain up to about 350 m elevation but may also occur on locally steep sites and at slightly higher elevations. CPW is characterised by a diverse assemblage of species and typically comprises an open tree canopy, a near-continuous groundcover dominated by grasses and herbs, sometimes with layers of shrubs and/or small trees. Shrubs may sometimes occur in locally dense stands. Less disturbed stands of the community may have a woodland or forest structure. Small trees or saplings may dominate the community in relatively high densities after partial or total clearing, and the groundcover may be relatively sparse, especially where densities of trees or shrubs are high. The community also includes 'derived' native grasslands which result from removal of the woody strata from the woodlands and forests.

Vegetation Zone 1 and 2 occurs on clay soils derived from shale substrates on flat terrain less than 350m in elevation. Furthermore, the vegetation comprises an open tree canopy with *Corymbia maculata* and *Eucalyptus tereticornis* present, which are species listed in the Final Determination for CPW in the Sydney Basin Bioregion (NSW Scientific Committee 2009). As such, Vegetation Zone 1 and 2 conforms to the BC Act listed CEEC, CPW in the Sydney Basin Bioregion (CPW).

4.2.2 Listing under the Environment Protection and Biodiversity Conservation Act 1999 Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest - Critically Endangered

The vegetation within Zone 1 and 2 does not meet the EPBC listing for Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest as it does not meet the minimum requirements for listing (Table 8, Table 9).

Table 8. Key diagnostics characteristics required to meet the EPBC listing status for Cumberland Plain Shale Woodlands or Shale-Gravel Transition Forest (Threatened Species Scientific Committee 2009).

Key Diagnostic Characteristic	Criteria met?	
	Zone 1	Zone 2
Distribution is limited to the Sydney Basin Bioregion with most occurrences in the Cumberland Sub-region. This covers a geographic area commonly known as the Cumberland Plain, a rain shadow coastal valley in western Sydney.	Yes	Yes
Most occurrences are on clay soils derived from Wianamatta Group geology, with limited to rare occurrences on soils derived from Tertiary Alluvium, Holocene Alluvium, the Mittagong Formation, Aeolian Deposits and Hawkesbury Sandstone	Yes	Yes
Upper tree layer species must be present with these features: The minimum projected foliage cover of canopy trees is 10% or more; and The tree canopy is typically dominated by <i>Eucalyptus moluccana</i> (Grey Box), <i>E. tereticornis</i> (Forest Red Gum) and/or <i>E. fibrosa</i> (Red Ironbark). Other canopy species may occur in association with the typical dominants and may be locally dominant at some sites.	Yes – <i>Eucalyptus tereticornis</i> present.	Yes – <i>Eucalyptus tereticornis</i> present.

Key Diagnostic Characteristic	Criteria met?	
	Zone 1	Zone 2
A sparse lower tree layer may be present, typically with young eucalypts of upper tree canopy species and species of <i>Acacia</i> , <i>Exocarpos</i> and <i>Melaleuca</i> .	N/A	N/A
The understorey typically is dominated by the ground layer and shows these features: The ground layer typically comprises a variety of perennial native graminoids and forbs; - Native graminoid species that are often present include: the grasses <i>Aristida ramosa</i> (Purple Wiregrass), <i>A. vagans</i> (Threeawn Speargrass), <i>Cymbopogon refractus</i> (Barbed Wire Grass), <i>Dichelachne micrantha</i> (Plumegrass), <i>Echinopogon caespitosus</i> var. <i>caespitosus</i> (Tufted Hedgehog Grass), <i>Eragrostis leptostachya</i> (Paddock Lovegrass), <i>Microlaena stipoides</i> subsp. <i>stipoides</i> (Weeping Grass), <i>Paspalidium distans</i> and <i>Themeda triandra</i> (Kangaroo Grass), and other graminoids <i>Carex inversa</i> (Knob Sedge), <i>Cyperus gracilis</i> (Slender Sedge), <i>Lomandra filiformis</i> subsp. <i>filiformis</i> (Wattle Mat-rush) and <i>L. multiflora</i> subsp. <i>multiflora</i> (Manyflowered Mat-rush); - Native forb and other herb species present include: <i>Asperula conferta</i> (Common Woodruff), <i>Brunoniella australis</i> (Blue Trumpet), <i>Cheilanthes sieberi</i> (Poison Rock-Fern), <i>Desmodium varians</i> (Slender Tick-trefoil), <i>Dianella longifolia</i> (Blue Flax-Lily), <i>Dichondra repens</i> (Kidney Weed), <i>Glycine</i> spp., <i>Hardenbergia violacea</i> (Native Sarsparilla), <i>Opercularia diphylla</i> (Stinkweed), <i>Oxalis perennans</i>, <i>Pratia purpurascens</i> (Whiteroot) and <i>Wahlenbergia gracilis</i> (Australian Bluebell); and - A shrub layer may be present, to variable extent, and is often dominated by <i>Bursaria spinosa</i> (Blackthorn) while other species include: <i>Daviesia ulicifolia</i> (Gorse Bitter Pea), <i>Dillwynia sieberi</i>, <i>Dodonaea viscosa</i> subsp. <i>cuneata</i> (Wedge-leaf Hop-bush), <i>Indigofera australis</i> (Native Indigo) and <i>Lissanthe strigosa</i> (Peach Heath).	No mid storey present, minimal occurrences of ground layer species such as <i>Dichondra repens</i> .	No mid storey present, minimal occurrences of ground layer species such as <i>Dichondra repens</i> .

Table 9. Condition thresholds for patches that meet the description for Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest ecological community.

Category and Rationale	Threshold	Threshold Met?	
		Zone 1	Zone 2
A. Core thresholds that apply under most circumstances: patches with an understorey dominated by natives and a minimum size that is functional and consistent with the minimum mapping unit size applied in NSW.	Minimum patch size is ≥ 0.5 ha; AND $\geq 50\%$ of the perennial understorey vegetation cover is made up of native species.	Yes	Yes
		No	No
OR			
B. Larger patches which are inherently valuable due to their rarity.	The patch size is ≥ 5 ha; AND $\geq 30\%$ of the perennial understorey vegetation is made up of native species.	No	No
		No	No
OR			
C. Patches with connectivity to other large native vegetation remnant in the landscape	The patch size is ≥ 0.5 ha; AND $\geq 30\%$ of the perennial understorey vegetation is made up of native species. AND The patch is contiguous with a native vegetation remnant (any native vegetation where cover in each layer present is dominated by native species) that is ≥ 5 ha in area.	Yes	Yes
		No	No
		No	No
OR			
D. Patches that have large mature trees or trees with hollows (habitat) that are very scarce on the Cumberland Plain	The patch size is ≥ 0.5 ha AND $\geq 30\%$ of the perennial understorey vegetation is made up of native species. AND The patch has at least one tree with hollows per hectare or at least one large tree (≥ 80 cm dbh) per hectare from the upper tree layer species	Yes	Yes
		No	No
		No	No
The vegetation within Vegetation Zone 1 and 2 does not conform to the EPBC listed Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest ecological community.			

4.3 Assessing Patch Size

As defined by the BAM, a patch is an area of native vegetation that occurs on the Subject Land and includes native vegetation that has a gap of less than 100m from the next area of native vegetation (or $\leq 30\text{m}$ for non-woody ecosystems). A patch may extend onto adjoining land. For each vegetation zone, the assessor must determine the patch size in hectares and assign it to one of the following classes:

- $<5\text{ha}$;
- $5 - <25\text{ha}$;
- $25 - <100\text{ha}$; or
- $\geq 100\text{ha}$.

The patch size class is used to assess habitat suitability on the Subject Land for threatened species. The assessor may assign more than one patch size class to the vegetation zone if both of the following apply:

- A vegetation zone comprises two or more discontinuous areas of native vegetation, and
- The areas of discontinuous native vegetation have more than one patch size class.

As areas outside of the Subject Property were not assessed as part of the scope of this assessment, the native vegetation zone identified within the Subject Land was assigned to the following category to allow for aerial mapping of patch size within the broader area (**Table 10; Figure 9**):

- Woody Ecosystems:
 - Zone 1: PCT 3320 Cumberland Shale Plains Woodland (Canopy).

Patch size is only required for native vegetation communities; therefore, no patch size has been assigned for Vegetation Zone 3 or areas of exotic vegetation.

Table 10. Patch size classes of each PCT and associated vegetation zone identified within the Subject Land.

Plant Community Type	Category	Vegetation Zone	Patch Size Class
PCT 3320	Woody Ecosystems	Zone 1 and 2	5-<25ha

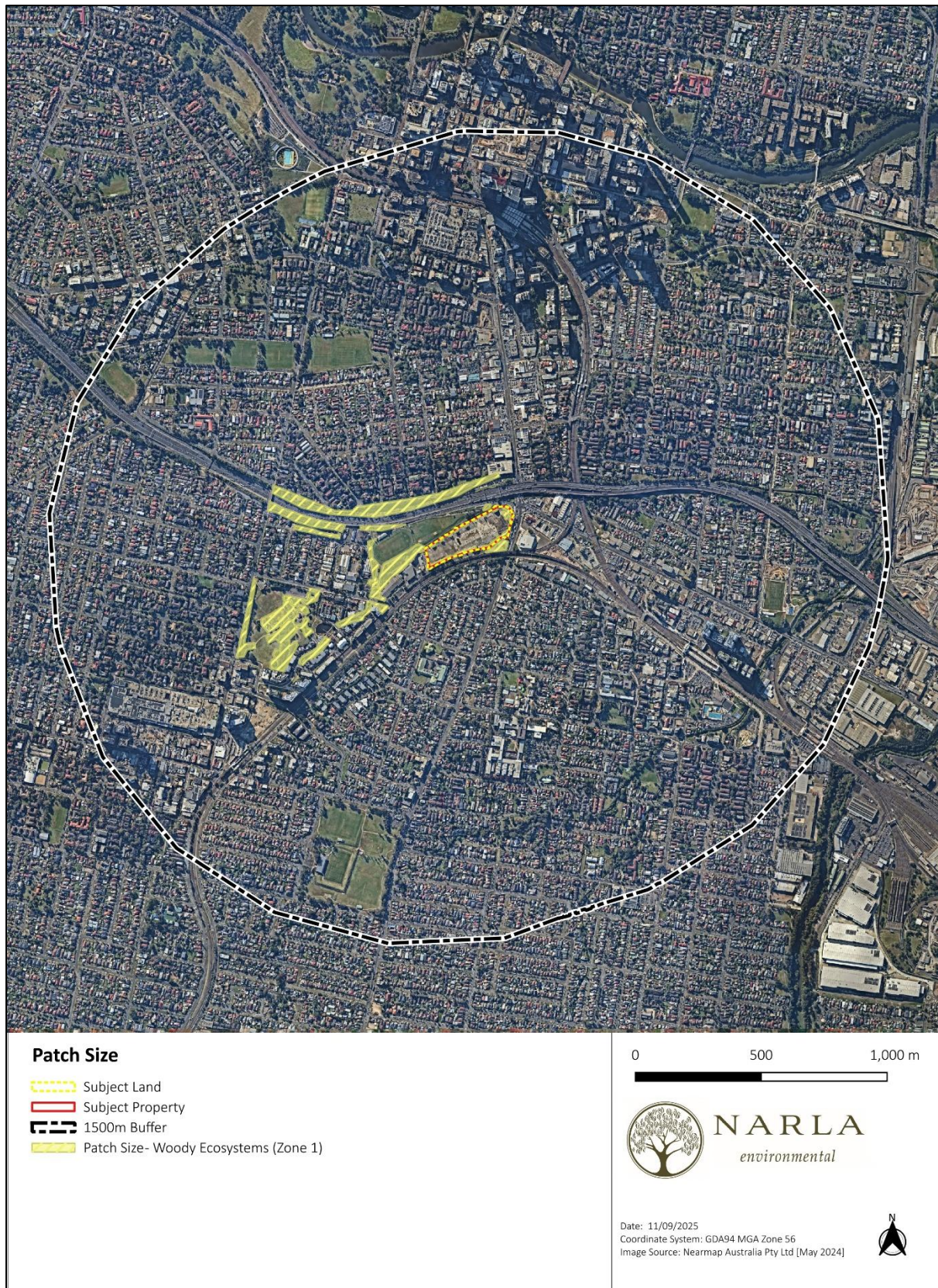


Figure 9. Patch size within the 1,500m buffer for the native Vegetation Zone within the Subject Land.

4.4 Vegetation Integrity Survey (VIS) Plots

Two (2) VIS plots were undertaken within and surrounding the Subject Land. Plot data gathered for each attribute used to assess the function of the Subject Land vegetation is detailed in **Appendix B**.

Vegetation Integrity (VI) Scores represented by existing vegetation within the vegetation zone is detailed in **Table 11**.

4.4.1 Determining Future Vegetation Integrity Scores

Most projects will result in complete clearing of vegetation and threatened species habitat within the Subject Land. In this scenario, the assessor must assess the proposed future value of each of the VI attributes as zero in the BAMC. However, in circumstances where partial clearing of vegetation is proposed and remaining vegetation will be maintained, the assessor may determine that the future value of the relevant VI attributes is greater than zero (DPIE 2020a).

All vegetation within the Subject Land will experience complete removal, as a result, Vegetation Zone 1 has been allocated the following management zones (**Figure 10**):

- Vegetation Zone 1: PCT 3320 (Canopy)
 - Management Zone 1: PCT 3320 (Canopy) – Complete Removal
- Vegetation Zone 2: PCT 3320 (Regenerating Stems)
 - Management Zone 2: PCT 3320 (Regenerating Stems) – Complete Removal

The attributes influencing future vegetation scores within each of these management zones are detailed in **Table 12**.

Areas containing Planted Native Vegetation and Exotic Vegetation (Vegetation Zone 2 and 2) have not been allocated to a management zone.



Figure 10. Management zones within the Subject Land.

Table 11. Vegetation integrity scores for each identified zone.

PCT 3320 Cumberland Shale Plains Woodland											
Vegetation Zone	Management Zone	Area (ha)	Survey Effort	Composition Condition Score	Structure Condition Score	Function Condition Score	VI Score	Future VI Score	Change in VI Score	Total VI Loss	Hollow bearing trees
Zone 1: PCT 3320 (Canopy)	Zone 1: PCT 3320 (Canopy) – Complete Removal	0.35	2 x 1000m ² VIS Plot	4.9	33.5	29.7	17	0	-17	17	Absent
Zone 2: PCT 3320 (Regenerating Stems)	Zone 2: PCT 3320 (Regenerating Stems) – Complete Removal	0.09	1 x 1000m ² VIS Plot	8.9	38.1	53.4	26.3	0	-26.3	26.3	Absent

Table 12. Management zones within the Subject Land and relevant vegetation attributes (composition, structure and function) affecting future VI scores.

Vegetation Zone	Management Zone	Changes in Current Vegetation Attributes	Vegetation Attributes Not Changed	Future Vegetation Scores and Justification
Zone 1: PCT 3320 (Canopy)	Zone 1: PCT 3320 (Canopy) – Complete Removal	All vegetation will be removed.	N/A	- All vegetation within this zone is required for removal to allow for the proposed development; and - Future composition, structure and function score is 0.
Zone 2: PCT 3320 (Regenerating Stems)	Zone 2: PCT 3320 (Regenerating Stems) – Complete Removal	All vegetation will be removed.	N/A	- All vegetation within this zone is required for removal to allow for the proposed development; and - Future composition, structure and function score is 0.

5. Threatened Species

5.1 Candidate Ecosystem Credit Species

Ecosystem credit species associated with the Subject Land are listed below in **Table 13**. No species predicted by the BAM calculator as potential ecosystem credits were excluded from the assessment due to habitat constraints.

Table 13. Candidate ecosystem credits predicted to occur within the Subject Land.

Scientific Name	BC Act Status	Sensitivity to Gain	Excluded from Assessment	Reason for Exclusion from Assessment
<i>Anthochaera phrygia</i> Regent Honeyeater (Foraging)	Critically Endangered	High	No	-
<i>Artamus cyanopterus</i> Dusky Woodswallow	Vulnerable	Moderate	No	-
<i>Calyptrorhynchus lathami</i> South-eastern Glossy Black-Cockatoo (Foraging)	Vulnerable	High	No	-
<i>Chthonicola sagittata</i> Speckled Warbler	Vulnerable	High	No	-
<i>Climacteris picumnus victoriae</i> Brown Treecreeper (eastern subspecies)	Vulnerable	High	No	-
<i>Dasyurus maculatus</i> Spotted-tailed Quoll	Vulnerable	High	No	-
<i>Ephippiorhynchus asiaticus</i> Black-necked Stork	Endangered	Moderate	No	-
<i>Falco subniger</i> Black Falcon	Vulnerable	Moderate		
<i>Glossopsitta pusilla</i> Little Lorikeet	Vulnerable	High	No	-
<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle (Foraging)	Vulnerable	High	No	-
<i>Hirundapus caudacutus</i> White-throated Needletail	Vulnerable	High	No	-
<i>Lathamus discolor</i> Swift Parrot (Foraging)	Endangered	Moderate	No	-
<i>Micronomus norfolkensis</i> Eastern Coastal Free-tailed Bat	Vulnerable	High	No	-
<i>Miniopterus australis</i> Little Bent-winged Bat (Foraging)	Vulnerable	High	No	-
<i>Miniopterus orianae oceanensis</i> Large Bent-winged bat (Foraging)	Vulnerable	High	No	-
<i>Pandion cristatus</i> Eastern Osprey (Foraging)	Vulnerable	Moderate	No	-

Scientific Name	BC Act Status	Sensitivity to Gain	Excluded from Assessment	Reason for Exclusion from Assessment
<i>Petroica boodang</i> Scarlet Robin	Vulnerable	Moderate	No	-
<i>Petroica phoenicea</i> Flame Robin	Vulnerable	Moderate	No	-
<i>Pteropus poliocephalus</i> Grey-headed Flying-fox (Foraging)	Vulnerable	High	No	-
<i>Stagonopleura guttata</i> Diamond Firetail	Vulnerable	Moderate	No	-

5.2 Candidate Species Credit Species Summary

This section provides a summary of the candidate species credit fauna and flora species for the Subject Land derived from BAMC (NDCCEEW 2025a). A summary of the targeted survey effort applied to each species is provided along with the results of the survey effort, specifically whether or not the species credit needs to be offset through retiring of Biodiversity Offset Credits (Table 14, Table 15).

Table 14. Candidate Fauna Credit Species predicted to occur within the Subject Land.

Scientific Name	Included in Assessment?	Targeted Survey conducted?	Present within Subject Land?	Biodiversity Risk Weighting	Biodiversity Offset Credits Required?
<i>Anthochaera phrygia</i> Regent Honeyeater (Breeding)	No, the Subject Land is not included on the map of important areas for Regent Honeyeaters.	No	N/A	Very High – 3	No
<i>Lathamus discolour</i> Swift Parrot (Breeding)	No, the Subject Land is not included on the map of important areas for Swift Parrots.	No	N/A	Very High – 3	No
<i>Miniopterus australis</i> Little Bent-winged Bat (Breeding)	No. This species is known to breed in caves, tunnels, mines and culverts. As such habitat constraints are not present within the Subject Land, this species was excluded from the assessment.	No	N/A	Very High - 3	No
<i>Miniopterus orianae oceanensis</i> Large Bent-winged Bat (Breeding)	No. This species is known to breed in caves, tunnels, mines and culverts. As such habitat constraints are not present within the Subject Land, this species was excluded from the assessment.	No	N/A	Very High - 3	No

Table 15. Candidate Flora Credit Species predicted to occur within the Subject Land.

Scientific Name	Included in Assessment?	Targeted Survey conducted?	Present within Subject Land?	Biodiversity Risk Weighting	Biodiversity Offset Credits Required?
<i>Deyeuxia appressa</i>	No. The species is believed to be extinct and therefore unlikely to be present within the Subject Land.	N/A	No	Very High - 3	No
<i>Eucalyptus benthamii</i> Camden White Gum	No. The Subject Land does not contain deep alluvial sands and a flooding regime that permits seedling establishment. As such habitat is not present within the Subject Land, this species was excluded from the assessment.	N/A	No	Very High - 3	No
<i>Micromyrtus minutiflora</i>	No. This species is restricted to the area between Richmond and Penrith, Western Sydney. As the Subject Land is not in this region, this species was excluded from the assessment. A targeted survey was undertaken during the NDCCEEW approved survey period as a precaution and no individuals were found.	N/A	No	Very High - 3	No
<i>Pterostylis saxicola</i> (Sydney Plains Greenhood)	No. This species is restricted to western Sydney between Freemans Reach in the north and Picton in the south. There are very few known populations, and they are all very small and isolated. Two populations occur within a conservation reserve (Georges River National Park; Scheyville NP). As the Subject Land is not in this region, this species was excluded from the assessment.	N/A	No	Very High - 3	No

5.3 Surveys for Threatened Species and their Habitats

Targeted surveys were undertaken for any SAI species credit species considered likely to have suitable habitat within the Subject Land (**Figure 11**). These surveys were implemented in accordance with Section 5.3 of the BAM and all relevant NDCCEEW threatened species survey guidelines.

Surveys were undertaken on the following dates, within and surrounding the Subject Land:

- 13th May 2024 by Narla ecologist Brodie Miller
- 27th May 2024 by Narla ecologist Brodie Miller
- 15th August 2025 by Narla ecologist Kayla Spithoven

Weather conditions taken from the nearest weather station (Parramatta, station no. 066124) in the lead up and during the field survey are outlined in **Table 16**. The May 2024 surveys followed moderate rainfall and mild temperatures, providing suitable conditions for identifying perennial and seasonal flora. The August 2025 survey occurred after several days of rainfall and cool, mild weather, which supported the detectability of ephemeral species and habitat features.

Table 16. Weather conditions taken from the nearest weather stations (Station number 067119) in the lead up and during the field survey (BOM 2024, 2025). Survey date is in bold.

Timing/Activities	Date	Min Temp (°C)	Max Temp (°C)	Rainfall (mm)
Lead up to survey	6/05/2024	14.8	20.5	49.6
	7/05/2024	13	19.6	0.8
	8/05/2024	12.8	19.4	2.2
	9/05/2024	12.5	19.8	6.4
	10/05/2024	14.2	20	0.4
	11/05/2024	15	17.2	7.8
	12/05/2024	14.2	20	20
Site Assessment & Habitat Survey	13/05/2024	15	21.2	0.6
Lead up to survey	20/05/2024	7.5	17.8	0
	21/05/2024	10.8	18.8	0
	22/05/2024	7.8	18.5	0
	23/05/2024	7	20.5	0
	24/05/2024	7.8	20.4	0
	25/05/2024	9.2	18	0
	26/05/2024	8.8	21.2	0
Site Assessment & Habitat Survey	27/05/2024	8	20	0
Lead up to survey	8/08/2025	7.5	17	0
	9/08/2025	10.5	16.2	21
	10/08/2025	9.2	15.2	17
	11/08/2025	8	16	8.4
	12/08/2025	5.5	17.2	1.4
	13/08/2025	6	18.8	0
	14/08/2025	9.8	14.2	2.4
Site Assessment & Habitat Survey	15/08/2025	9.2	19	11.6

5.3.1 Fauna Species Credit Survey

A total of four (4) SAI threatened fauna species were identified within the BAMC (NDCCEEW 2025a) as having the potential to occur within the Subject Land. Targeted habitat searches were undertaken in accordance with relevant DCCEEW threatened fauna survey guidelines. No species-specific habitat features or microhabitats (e.g. breeding, roosting or foraging structures) were identified during survey.

All four (4) species were excluded from assessment due to the following:

- Species are considered unlikely to occur and no further assessment is required for that species if it is determined that no habitat constraints are present on the entire Subject Land for the threatened species (as per Section 5.2.2 of the BAM, DPIE 2020a).

5.3.2 Flora Species Credit Survey

Four (4) SAIL threatened flora species were identified within the BAMC (DCCEEW 2025a) as having the potential to occur within the Subject Land. Targeted flora surveys were undertaken in accordance with relevant DCCEEW threatened flora survey guidelines. Systematic searches were conducted for diagnostic microhabitats known to support the candidate species. No suitable microhabitats were identified during survey.

All four (4) species were not identified as having the potential to occur within the Subject Land due to the following (BAM Section 5.2.2, DPIE 2020a):

- The assessor determines that microhabitats required by a species are absent from the Subject Land (or specific vegetation zone) [(Section 5.2.3(2ai) of the BAM (DPIE 2020a)].

5.4 Species Polygons

5.4.1 Confirmed Present

No SAIL species were confirmed to be present within the Subject Land.

5.4.2 Assumed Present

No SAIL species were assumed to be present within the Subject Land.

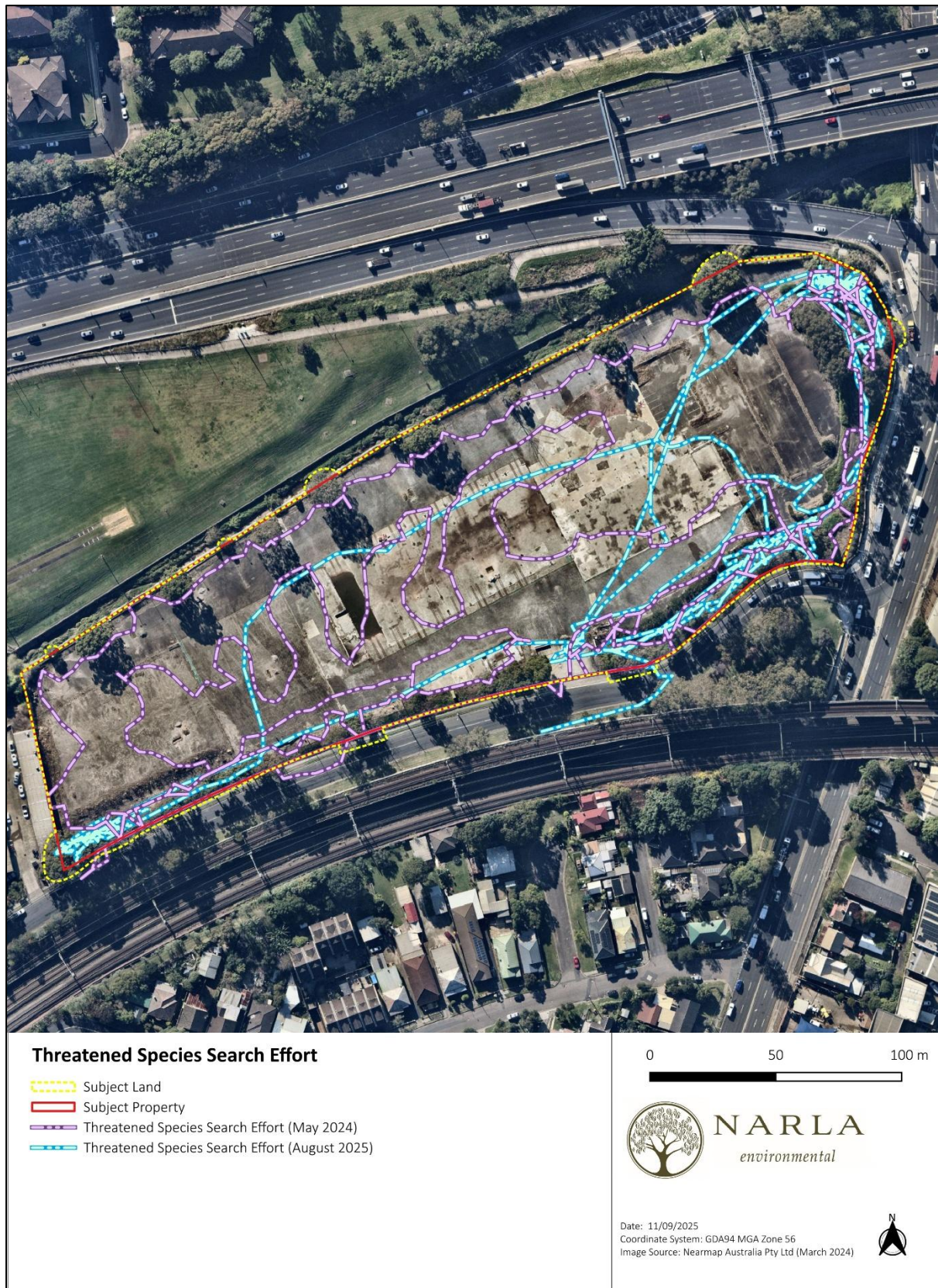


Figure 11. Targeted survey effort for species credit species within and surrounding the Subject Land.

6. Prescribed Impacts

Certain projects may have impacts on biodiversity values in addition to, or instead of, impacts from clearing vegetation and/or loss of habitat. For many of these impacts, the biodiversity values may be difficult to quantify, replace or offset, making avoiding and minimising impacts critical. Prescribed biodiversity impacts require an assessment of the impacts of the development on the habitat of threatened species or ecological communities. This is discussed in **Table 17**.

Table 17. Prescribed and uncertain impacts associated with the proposed development.

Will there be impacts on any of the following?	Yes/No	If Yes, Address all of the assessment questions from section 6 of the BAM
Habitat of threatened entities including: - karst, caves, crevices, cliffs, rocks and other geological features of significance, or - human-made structures, or - non-native vegetation.	No	There are no karsts, caves, crevices, cliffs, rocks and other features of geological significance on or near the Subject Land. No human-made structure were present within the Subject Land that could provide habitat for threatened entities. Non-native vegetation was present within the Subject Land; however, it only exists in the form of common herbaceous and woody weeds and exotic grasses, the removal of which is not expected to impact any threatened species.
On areas connecting threatened species habitat, such as movement corridors.	No	It is unlikely the proposed development will interrupt connectivity for any threatened species, owing to the areas of habitat connectivity that will continue to exist in vegetated areas surrounding the Subject Land.
That affect water quality, water bodies and hydrological processes that sustain threatened entities (including from subsidence or upsidence from underground mining).	No	It is not expected that the removal of vegetation within the Subject Land will impact upon any groundwater processes within the surrounding landscape.
On threatened and protected animals from turbine strikes from a wind farm.	No	No wind farms are associated with the proposed development.
On threatened species or fauna that are part of a TEC from vehicle strikes.	No	Due to the nature of the proposed development, it is highly unlikely that vehicle strikes will be an issue given the slow speed requirements of vehicles within development grounds.

7. Avoid, Minimise and Mitigate Impacts

7.1 Impact Mitigation and Minimisation Measures

This section details the measures to be implemented before, during and post construction to avoid and minimise the impacts of the project (Table 18).

Table 18. Mitigation and management of impacts associated with the proposed development.

Action	Outcome	Timing	Responsibility
Project Design	The proposed development is situated on land currently dominated by concrete hardstand and other highly urbanised land uses. Native vegetation within the Subject Land is minimal and in low condition, reflecting the site's long history of clearing and ongoing disturbance. The existing canopy extent is largely comprised of planted vegetation, established either as screening along the site boundaries or as intermittent plantings within carparking areas. These plantings do not constitute remnant native vegetation and provide limited ecological function. The removal of the majority of existing trees is unavoidable due to the combined regulatory, engineering, and contamination constraints of the site. In particular: • Road widening requirements: As part of the development consent, Crescent Street will be required to be widened to accommodate traffic movements associated with the project. This necessitates removal of trees along the street frontage to enable road expansion and construction works. • Access for construction vehicles: Access to Building 1 must be provided for large construction vehicles, including trucks. The geometry of the site dictates that this access can only be achieved via land to be transferred to Transport for NSW (TfNSW). TfNSW has formally rejected proposals to provide access from Woodville Road, leaving no viable alternative access arrangement that would allow trees in this area to be retained. • Alternative design considerations: Options were investigated to reduce tree loss, including designing for trucks to enter and turn around within the building footprint. This was ultimately not feasible due to the positioning of new structural columns, which prevent vehicles from circulating through the building safely. • Asbestos contamination constraints: All soils within the Subject Land contain asbestos containing material (ACM). Remediation requirements stipulate that landscaped areas must be capped with a minimum of 500 mm of clean fill, or 200 mm where hardstand is	Pre-construction phase	Proponent

Action	Outcome	Timing	Responsibility
	installed. These requirements preclude retention of existing trees, as the necessary fill and capping works would either bury tree trunks or destabilise root zones, making retention unviable. Taken together, these constraints mean that the majority of existing trees will be removed as part of site remediation, roadworks, and construction. While this loss is unavoidable, the current trees are of low ecological value and largely comprise planted specimens with limited biodiversity function. To address this loss, the landscape plan (Appendix A) demonstrates that over the medium to long term, replacement tree planting will restore and improve canopy cover across the site. New plantings will be undertaken with locally appropriate native species, providing habitat values consistent with regional ecological communities, while also delivering enhanced visual amenity and shading benefits compared with the current sparse and fragmented tree cover.		
Preparation of a Construction Environmental Management Plan (CEMP)	A CEMP may be required for the construction phase of the project and will be prepared prior to issue of the Construction Certificate. The CEMP would include, as a minimum, industry-standard measures for the management of soil, surface water, weeds and pollutants, as well as site-specific measures, including the procedures outlined below. The proposed mitigation measures would include environmental safeguards for protection of neighbouring properties and nearby waterways in accordance with relevant policy documentation and Government guidelines. In order to address the potential impacts of the proposal on biodiversity, the mitigation and management measures outlined within this table would be implemented as part of the CEMP for the site.	Pre-construction phase	Proponent Construction Contractor
Assigning a Project Ecologist for Vegetation Clearing	Prior to construction, the applicant should commission the services of a qualified and experienced Ecologist Consultant (minimum 3 years' experience) with a minimum tertiary degree in Science, Conservation, Biology, Ecology, Natural Resource Management, Environmental Science or Environmental Management. The Ecologist must be licensed with a current Department of Primary Industries Animal Research Authority permit and New South Wales Scientific License issued under the BC Act. The Ecologist will be commissioned to: ▪ Undertake an extensive pre-clearing survey, delineating habitat-bearing trees and shrubs to be retained/removed; and ▪ Supervise the clearance of trees and shrubs (native and exotic) in order to capture, treat and/or relocate any displaced fauna.	Prior to and during vegetation clearance works	Proponent Project Ecologist
Future Landscaping, tree and habitat Replacement	Future landscape plans prepared for the Subject Property should consist of species representative of the Cumberland Plain Woodland CEEC. All native trees proposed for removal should be replaced at a minimum ratio of 2:1 with mature aged, locally sourced individuals' representative of the Cumberland Plain Woodland CEEC, elsewhere in the Subject Property. If clearing of trees reveals	Pre-construction phase, construction phase; Post-construction phase	Proponent Project Ecologist

Action	Outcome	Timing	Responsibility
	any hollows, all hollows are to be replaced with artificial nestboxes of a similar size at a 1:1 ratio elsewhere in the Subject Property.		
Erosion Sedimentation and	Appropriate erosion and sediment control must be erected and maintained at all times during construction in order to avoid the potential of incurring indirect impacts on biodiversity values. As a minimum, such measures should comply with the relevant industry guidelines such as 'the Blue Book' (Landcom 2004).	Construction phase	Proponent Construction Contractor

8. Assessment of Impacts

8.1 Direct Impacts

8.1.1 Full Clearing

The proposed development will require the complete clearing of 0.66 ha of vegetation, comprising areas of native vegetation, planted native vegetation and exotic vegetation. The breakdown of native vegetation impacts is as follows:

- 0.35 ha of Vegetation Zone 1: PCT 3320 (Canopy)
- 0.09 ha of Vegetation Zone 2: PCT 3320 (Regenerating Stems)

In total, the proposed works will require the removal of 0.44 ha of vegetation that conforms to the BC Act listed Critically Endangered Ecological Community (CEEC), Cumberland Plain Woodland in the Sydney Basin Bioregion (Vegetation Zones 1 and 2).

This represents a reduction compared with the original assessment (Final v2.0, December 2024), which identified 0.54 ha of CEEC removal. The change does not reflect any modification to the development footprint but arises from the application of the Planted Native Vegetation module within the BAM, which more accurately distinguishes between remnant CEEC and planted or exotic vegetation. As a result of this refined assessment, areas previously attributed to Cumberland Plain Woodland have been reclassified as planted native vegetation and are therefore not included in the CEEC impact area.

Accordingly, the revised assessment demonstrates that the proposed development will result in the removal of 0.10 ha less CEEC than originally reported. This refinement provides a more accurate representation of site conditions

8.2 Prescribed Impacts

There will be no prescribed impacts on threatened entities associated with the proposed development.

8.3 Indirect Impacts

Indirect impacts occur when the proposal or activities relating to the construction of the proposal affect native vegetation, threatened ecological communities and threatened species habitat beyond the Subject Land. Impacts may also result from changes to land-use patterns, such as an increase in vehicular access and human activity on native vegetation, threatened ecological communities and threatened species habitat. The indirect impacts of the proposed development are outlined in **Table 19**.

Table 19. Indirect impacts associated with the proposed development.

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
(a) inadvertent impacts on adjacent habitat or vegetation	Vegetation and habitat directly adjacent to the Subject Land has the potential to experience ongoing indirect impacts as a result of the proposed development, although this is unlikely to be significant owing to the altered nature of the Subject Land. The disturbance caused during construction may increase weed infestations within adjacent vegetation, which in turn may decrease its habitat value.	One (1) TEC (Cumberland Plain Woodland) is known to occur within and surrounding the Subject Land. There is also the potential that threatened species occur in areas adjacent to the Subject Land that may be impacted by a decrease in habitat condition.	While changes to vegetation condition may have a localised impact to threatened species, threatened ecological communities and their habitats, this is not expected to impact on their bioregional persistence.
(b) reduced viability of adjacent habitat due to edge effects	The proposed construction works and on-going utilisation of the Subject Land. may lead to an increase in weed infiltration into adjacent habitat due to enhanced edge effects. However, due to the altered nature of vegetation within and surrounding the Subject Land, it is unlikely that this will significantly impact on such areas. Any impacts are expected to be restricted to a couple of metres into adjacent vegetation. Areas surrounding the Subject Land have already been heavily impacted by edge effects.	One (1) TEC (Cumberland Plain Woodland) is known to occur within and surrounding the Subject Land. There is also the potential that threatened species occur in areas adjacent to the Subject Land. The TEC and threatened species may be impacted by edge effects leading to a reduced viability in habitat.	While edge effects may have a localised impact to TECs and threatened species, this is not expected to impact on their bioregional persistence, given the already heavily fragmented nature of the habitat in the locality.
(c) reduced viability of adjacent habitat due to noise, dust or light spill	An increase in noise is to be expected during and following construction. This may have an impact on any species roosting adjacent to the site during the day that are not adapted to such noises. It is not expected that	One (1) TEC (Cumberland Plain Woodland) is known to occur within and surrounding the Subject Land. There is also potential that threatened species use habitat adjacent to the	While the construction and ongoing utilisation of the Subject Land may have a localised impact to the TEC and threatened species, this is not expected to

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
	construction would occur throughout the night, and as such would not impact on nocturnal species that may utilise adjacent habitat, or diurnal species that roost in adjacent habitat. The construction may increase dust in adjacent habitat. Dust can impact on a plant's ability to photosynthesise and may increase plant mortality in the adjacent vegetation. It is however not expected that this would have such an impact to decrease the viability of adjacent habitat. It is expected that the utilisation of the area following construction may result in a decrease in the viability of the adjacent habitat due to increases in noise and light associated with the works.	Subject Land. Threatened species may be impacted by an increase in noise, dust or light spill into adjacent habitats.	impact on their bioregional persistence, given the already heavily fragmented nature of the habitat in the locality.
(d) transport of weeds and pathogens from the site to adjacent vegetation	As previously discussed, the proposed construction and ongoing utilisation of the Subject Land may lead to an increase in weed infiltration into adjacent habitat due to enhanced edge effects. It is however not expected that weeds will be transported via human or vehicular traffic into surrounding areas during construction. Temporary fencing will be erected around retained native vegetation to avoid such indirect impacts occurring during construction.	One (1) TEC (Cumberland Plain Woodland) is known to occur within and surrounding the Subject Land. There is also potential that threatened species use habitat adjacent to the Subject Land. The TEC and threatened species may be impacted by weed and pathogen transportation leading to a reduced viability in habitat.	While weeds and pathogens may have a localised impact to TECs and threatened species, this is not expected to impact on their bioregional persistence given the already heavily fragmented nature of the habitat in the locality.
(e) increased risk of starvation, exposure and loss of shade or shelter	It is highly unlikely that any threatened fauna would be exposed to increased risks from starvation, exposure, and loss of shade and shelter as a result of the proposed works. No habitat is to be removed beyond the Subject Land, although disturbances from noise during construction may deem such habitats unsuitable for	N/A	N/A

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
	certain species. However, due to the large areas of habitat connectivity adjoining the Subject Land, it is unlikely that this impact will be significant as such habitats will continue to provide food resources and shelter for fauna species.		
(f) loss of breeding habitats	An increase in noise is to be expected during and post-construction. As such, there is potential for disturbance to breeding habitats directly adjacent to the Subject Land. However, due to the large areas of habitat connectivity adjoining the Subject Land, it is not expected for this to significantly impact on species inhabiting such areas.	There is potential that threatened fauna species use habitat adjacent to the Subject Land for breeding. Such species may be impacted by an increase in noise into adjacent habitats, which may in turn impact on their breeding habitat.	This impact is expected to be localised and will not have an overall impact on the bioregional persistence of threatened species.
(g) trampling of threatened flora species	No threatened flora species were identified within or surrounding the Subject Land. The lack of proximal records shows no threatened flora located within or immediately adjacent to the Subject Land. Therefore, it is not expected that trampling of threatened species will be associated with this project.	N/A	N/A
(h) inhibition of nitrogen fixation and increased soil salinity	It is unlikely that the inhibition of nitrogen fixation will affect vegetation adjacent to the Subject Land. Increased soil salinity may result due to clearing of vegetation leading to the rising of the water table. However, clearing will be limited to the Subject Land and as such is not expected to affect vegetation directly adjacent to the Subject Land.	N/A	N/A
(i) fertiliser drift	It is unlikely that the proposed development will result in an increase in fertiliser drift into the vegetation surrounding the Subject Land.	N/A	N/A

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
(j) rubbish dumping	There is the possibility that rubbish dumping (including littering) in adjacent vegetation increases during construction and through the intensified utilisation of the area. The dumping/littering of food resources may provide a food source for fauna. However, this may also encourage invasive species into such habitats. This impact can be mitigated by the appropriate disposal of rubbish.	There is potential that threatened fauna species use habitat adjacent to the Subject Land. Such species may be impacted by the dumping of rubbish, particularly food resources. This may result in both positive (food source) and negative impacts (increase in predators) to such species.	This impact is expected to be localised and will not have an overall impact on the bioregional persistence of the TECs or threatened species.
(k) wood collection	It is unlikely that the proposed development will increase wood collection in the vegetation surrounding the Subject Land.	N/A	N/A
(l) bush rock removal and disturbance	This issue is not likely to affect the vegetation surrounding the Subject Land. No bush rock was observed within or adjacent to the Subject Land.	N/A	N/A
(m) increase in predatory species populations	There is potential that predatory species, such as foxes and cats, already inhabit areas within and surrounding the Subject Land. There is the possibility that other indirect impacts, such as an increase in rubbish dumping, may encourage predatory species into the area.	There is potential that threatened fauna species use habitat adjacent to the Subject Land. Such species may be impacted by an increase in predatory species populations.	An increase in predatory species adjacent to the Subject Land may have widespread ramifications for any locally occurring threatened species. However, given the already heavily fragmented nature of the habitat in the locality these impacts are anticipated to be minimal.
(n) increase in pest animal populations	There is potential that pest animal populations already inhabit areas within and surrounding the Subject Land. There is the possibility that other indirect impacts, such as an increase in rubbish dumping, may encourage an increase in pest animal populations.	There is potential that threatened fauna species use habitat adjacent to the Subject Land. Such species may be impacted by an increase in pest animal populations.	An increase in pest species adjacent to the Subject Land may have widespread ramifications for any locally occurring threatened species. However, given the already heavily fragmented nature of the habitat in the locality these impacts are anticipated to be minimal.

Indirect Impact	Nature, Extent and Duration	TEC's/PCTs and/or Threatened Species and Their Habitat Likely to be Impacted	Consequences of the Impacts for the Bioregional Persistence of the Threatened Species, Threatened Ecological Communities and Their Habitats.
(o) increased risk of fire	The Subject Land is not identified as occurring within bushfire prone land. It is not expected that the proposed works will significantly alter the bushfire risk of vegetation surrounding the Subject Land as vegetation is proposed to be removed which will minimise this risk.	N/A	N/A
(p) disturbance to specialist breeding and foraging habitat, e.g., beach nesting for shorebirds.	No specialist breeding and foraging habitat was identified within or adjacent to the Subject Land. Therefore, it is not expected that the proposed development will disturb any specialist breeding and foraging habitat.	N/A	N/A

9. Threshold for Assessing and Offsetting

9.1 Impacts on Native Vegetation

In addition to areas of planted native vegetation and exotic vegetation, the following native vegetation within the Subject Land is proposed to be impacted as a result of the proposed development:

- 0.44ha representative of PCT 3320: Cumberland Shale Plains Woodland.

The purchase and retirement of Biodiversity Offset Credits will be required for the following native vegetation within the Subject Land (**Figure 12**):

- 0.44ha within Vegetation Zone 1: PCT 3320 Cumberland Shale Plains Woodland.

No offsets are required for areas identified as planted native vegetation and exotic vegetation.

The current assessment identifies a reduced extent of impact to native vegetation compared with the previous version of the BDAR. The original assessment (Final v2.0, December 2024) identified 0.54 ha of Cumberland Shale Plains Woodland proposed for removal. The updated assessment identifies 0.44 ha, representing a reduction of 0.10 ha of CEEC impact.

This reduction is not the result of any change to the development footprint. Rather, it reflects the application of the Planted Native Vegetation module within the BAM, which allows planted areas that do not meet the criteria for remnant vegetation to be assessed separately from CEEC. As a result, areas previously mapped as native vegetation have now been more accurately classified as planted native vegetation, which is not subject to offset requirements.

This refinement provides a more accurate representation of site conditions and is considered a positive outcome, as the proposal will now result in the removal of less CEEC than previously assessed.

9.2 Impacts on Threatened Species

No threatened species will require the purchase and retirement of Biodiversity Offset Credits.



Figure 12. Impacts on native vegetation and offset requirements.

9.3 Serious and Irreversible Impacts (SAIL's)

An impact is to be regarded as serious and irreversible if it is likely to contribute significantly to the risk of a threatened species (including endangered populations) or an ecological community becoming extinct based on the following 4 principles set out in clause 6.7 of the Biodiversity Conservation Regulation 2017 (NSW):

1. The impact will cause a further decline of a species or ecological community that is currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline.
2. The impact 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.
3. The impact is made on the habitat of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very limited geographic distribution.
4. The impacted species or ecological community is unlikely to respond to measures to improve its habitat and vegetation integrity and therefore its members are not replaceable.

One (1) threatened ecological community within the Subject Land has been identified as an entity at risk of an SAIL in the Threatened Biodiversity Data Collection (NDCCEEW 2025e);

- Cumberland Plain Woodland in the Sydney Basin (Principles 1 and 2).

9.3.1 Cumberland Plain Woodland in the Sydney Basin

The threshold for consideration of SAIL for Cumberland Plain Woodland in the Sydney Basin Bioregion is currently under development. This means that any impact on the potential habitat for this ecological community could be considered 'serious and irreversible.' Due to the potential sensitivity of this ecological community to any impact, a determination of whether or not the impacts are serious and irreversible is to be undertaken in accordance with Section 9.1 of the BAM (DPIE 2020a). This is outlined in **Table 20**.

Table 20. Additional impact assessment provisions for ecological communities that are associated with a serious and irreversible impact.

Serious and Irreversible Impact (SAIL) Impact assessment provisions for ecological communities: Cumberland Plain Woodland in the Sydney Basin (CPW)	
BC Act Status: Critically Endangered	
The action and measures taken to avoid the direct and indirect impact on the potential entity for a SAIL	The proposed development is situated on land dominated by concrete hardstand. The native vegetation removal is minimal in nature and is in low condition. Indirect impacts will be mitigated using the measures outlined in Section 7.1 .
Current total geographic extent (ha) of the TEC in NSW	The current estimated total geographic extent of CPW as per the State Vegetation Type Mapping in NSW is 55,545ha (DPE 2022).
Estimated reduction in geographic extent of the TEC since 1970	No data is available for the estimated reduction in this TEC since 1970 however it is estimated that there has been a 93% reduction of its extent since European settlement (NSW Threatened Species Scientific Committee, 2009).
Extent of reduction in ecological function, describing the degree of environmental degradation or disruption to biotic processes such as: • Change in community structure;	The structure of the CPW community has been significantly altered primarily due to land clearing for urban development, agriculture, and infrastructure. This has led to a loss of native vegetation cover, resulting in reduced habitat complexity. The fragmentation of habitat has further disrupted the structural connectivity of this ecosystem, making it difficult for species to move across the landscape for foraging, breeding, and dispersal. Land clearing and the introduction of invasive species have significantly altered the species composition of CPW. Native flora

Serious and Irreversible Impact (SII) Impact assessment provisions for ecological communities: Cumberland Plain Woodland in the Sydney Basin (CPW)	
BC Act Status: Critically Endangered	
- Change in species composition; - Disruption of ecological processes; - Invasion and establishment of exotic species; - Degradation of habitat; and - Fragmentation of habitat.	and fauna species have declined due to habitat loss and competition from invasive species. Exotic grasses, shrubs, and trees outcompete native species, leading to a homogenisation of the landscape and a loss of biodiversity. The fragmentation of habitat disrupts ecological processes such as pollination, seed dispersal, and nutrient cycling. The isolation of remnant patches impedes the movement of fauna, affecting their ability to contribute to these processes. Additionally, changes in fire regimes due to urban development and suppression efforts have altered the natural cycle of regeneration, further impacting the ecological dynamics of the woodland. The introduction and establishment of exotic plant and animal species are significant threats to CPW. Invasive species such as African Olive (<i>Olea europaea subsp. cuspidata</i>) and Coolatai Grass (<i>Hyparrhenia hirta</i>) dominate over native species, altering the ecosystem's structure and function. These species not only compete for resources but can also introduce diseases and alter soil chemistry. CPW habitat has been degraded by urban expansion, pollution, and altered hydrology. The removal of vegetation for development not only reduces available habitat but also leads to soil erosion, increased runoff, and reduced water quality. These factors collectively degrade the habitat, making it less suitable for native species. Habitat fragmentation is one of the most significant impacts of urbanisation and land use change on CPW. The division of the landscape into smaller, isolated patches by roads, buildings, and other infrastructure reduces the area of suitable habitat for species and separates populations, limiting genetic exchange and increasing vulnerability to local extinctions (NSW Threatened Species Scientific Committee, 2009).
Evidence of restricted geographic distribution (Principle 3) based on the TEC's geographic range in NSW: - Extent of occurrence (ha); - Area of occupancy (ha); - Number of threat-defined locations	CPW is found exclusively within the Sydney Basin Bioregion of New South Wales, as delineated by version 7 of the Interim Biogeographic Regionalisation for Australia. This ecological community is characterised by its association with clay soils, which are derived from the geology of the Wianamatta Group, and, less frequently, with alluvial substrates on the Cumberland Plain. This area, located to the west of Sydney's Central Business District, falls within a rainshadow region. According to the State Vegetation Type Mapping NSW, CPW occupies an estimated total area of 55,545.2 ha (DPE 2022). In line with Clause 4.21 of the Biodiversity Conservation Regulation (BC Reg.), the NSW Scientific Committee has published guidelines to interpret listing criteria for species, populations, and ecological communities under the Biodiversity Conservation Act (BC Act). Specifically, Subclause 4.10f of the BC Reg. mandates an estimation of the number of threat-defined locations that are occupied, in relation to the extent of serious and plausible threats. For the interpretation of Clause 4.10f, the Committee advises the use of thresholds established by the International Union for Conservation of Nature (IUCN). According to the IUCN Red List criteria for ecosystems, the threshold for Critically Endangered entities is defined as one location. Consequently, as CPW is categorised as critically endangered, the criterion of one threat-defined location is applicable.
Area of TEC to be impacted by the proposal (ha)	0.44ha of vegetation confirming to CPW will be impacted by the proposed works.
Area of TEC to be impacted by the proposal as a % of the current geographic extent in NSW (%)	Current extent is estimated at 55,545ha (DPE 2022). The proposed development will impact less than 0.001% of the current geographic extent in NSW.

Serious and Irreversible Impact (SII) Impact assessment provisions for ecological communities: Cumberland Plain Woodland in the Sydney Basin (CPW)	
BC Act Status: Critically Endangered	
Direct/indirect impacts likely as a result of the proposal to contribute to loss of flora/fauna species characteristic of the TEC	The proposed development will result in impacts to approximately 0.44ha of CPW. The CPW within the Subject Land was found to be in low condition, with a VI score of 18.4 and 26.3. It is possible for the vegetation surrounding the Subject Land to be indirectly impacted by the proposal, however as discussed in Section 8 these potential impacts are not expected to be significant.
Remaining extent of isolated areas of TEC (ha)	The impacts to this TEC are restricted to the edges of a disturbed patch in a highly urbanised locality, therefore no isolation is likely to occur as a result of the proposed development.
Average distance between remaining remnants – remnant is retained (m) vs remnant is removed.	As previously mentioned, the area of TEC to be removed is located on the edge of a disturbed patch, which is not likely to result in any isolation of remaining areas of the TEC as it will continue, as it currently does, to exist around the Subject Land in the broader Subject Property. The removal of vegetation within the Subject Land will increase the separation distance between patches to the west by approximately 25m. Distance between remnants in other directions will be maintained.
Estimated maximum dispersal distance of species associated with the TEC (km)	It is assumed that native species within the TEC have a estimated maximum dispersal distance of 100m for the exchange of genetic material, based on the definition of a “patch” of vegetation within the BAM 2020.
Area to perimeter ratio of remaining remnants (ratio)	State Vegetation Mapping (DPE 2022) indicates the presence of approximately 0ha of CPW within an area of 1,000ha surrounding the Subject Land, and 43.87ha of CPW within an area of 10,000ha surrounding the Subject Land.
Vegetation Integrity Analysis: - Composition Score; - Structure Score; - Function Score	- Vegetation Zone 1 - Composition Score: 4.9 - Structure Score: 33.4 - Function Score: 29.7 - Total VIS: 17 - Vegetation Zone 2 - Composition Score: 8.9 - Structure Score: 38.1 - Function Score: 53.4 - Total VIS: 26.3

10. Biodiversity Offset Credit Requirements

10.1 Offset Requirement for Ecosystem Credits

A total of four (4) ecosystem credits are required to offset the biodiversity impacts of the proposed development (Table 21).

The requirement for ecosystem credits has changed since the previous assessment (Final v2.0, December 2024), which identified 0.54 ha of Cumberland Shale Plains Woodland removal but no offset requirement. In the original assessment, a single Vegetation Integrity (VI) plot was established within the Subject Land and returned a score below the BAM offset threshold of 15. In the updated assessment, two additional plots were undertaken, providing a more representative measure of vegetation condition. When combined with the reclassification of planted areas under the Planted Native Vegetation module, the recalculated VI scores for the remnant CEEC were above the threshold, thereby triggering an offset requirement.

Although the extent of CEEC removal has been reduced (0.44 ha compared with 0.54 ha previously), the vegetation is now assessed as being of higher condition. This has resulted in a requirement for ecosystem credits to ensure that biodiversity values are appropriately compensated.

This outcome reflects a refinement in assessment methodology rather than any increase in development impact and provides a more accurate representation of on-ground conditions in accordance with the Biodiversity Conservation Act 2016.

Table 21. Ecosystem credits required to offset the proposed development

Plant Community Type (PCT)	BC Act Status	Vegetation Zone	Total Area (ha)	Ecosystem Credits Required
3320 - Cumberland Shale Plains Woodland	Critically Endangered	Zone 1	0.35	4
		Zone 2	0.09	1
Total Ecosystem Credits				5

10.2 Offset Requirement for Species Credits

No species credit species require offsetting as a result of the proposed development.

11. Other Relevant Legislation and Planning Policies

11.1 State Environmental Planning Policy (Biodiversity and Conservation) 2021 – Chapter 4 Koala Habitat Protection 2021

This Policy aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline. This chapter of the SEPP applies to LGAs that are listed in Schedule 2 'Local government areas' of the SEPP. As the Cumberland LGA is not included in Schedule 2, this chapter of the SEPP does not apply to the Subject Land.

11.2 State Environmental Planning Policy (Resilience and Hazards) 2021

State Environmental Planning Policy (Resilience and Hazards) 2021: Chapter 2 – Coastal Management applies to land within the coastal zone. The coastal zone means the area of land comprised of the following coastal management areas:

- The coastal wetlands and littoral rainforests area.
- The coastal vulnerability area.
- The coastal environment area.
- The coastal use area.

As the Subject Land does not occur within any of these listed areas, this chapter of the SEPP does not apply.

12. Conclusion

This Streamlined Biodiversity Development Assessment Report (SBDAR) for the proposed mixed-use development at 1 Crescent Street, Holroyd, demonstrates that while the proposed works will result in unavoidable biodiversity impacts, these impacts are limited in extent given the small area of remnant vegetation present within the Subject Land.

The amended assessment identifies that the proposed development will require the removal of 0.44 ha of Cumberland Shale Plains Woodland (PCT 3320), listed as a Critically Endangered Ecological Community (CEEC) under the Biodiversity Conservation Act 2016 (BC Act). This is a reduction from the 0.54 ha of CEEC removal reported in the original assessment (Final v2.0, December 2024). The difference arises from the application of the Planted Native Vegetation (PNV) module under the BAM and the inclusion of additional survey plots. These refinements allowed more accurate delineation of remnant CEEC compared with planted vegetation, resulting in 0.10 ha less CEEC being attributed to direct removal.

Although the area of CEEC removal has decreased, the additional survey effort and recalculation of Vegetation Integrity (VI) scores found that the remnant vegetation is of higher ecological condition than originally assessed. Under the BAM, this higher score triggered a requirement for biodiversity offset credits, whereas the original assessment identified no offset requirement. A total of five (5) ecosystem credits are now required to account for the loss of CEEC.

No threatened species or species credit species were recorded, and there are no prescribed impacts requiring additional mitigation. While indirect impacts such as edge effects and weed encroachment may occur, these are expected to be localised and manageable through the mitigation measures outlined in this report. Importantly, the same mitigation measures proposed in the original assessment will be maintained in the amended proposal, including preparation of a Construction Environmental Management Plan (CEMP), appointment of a Project Ecologist, and landscaping with locally appropriate native species.

13. References

- Aboriginal Land Council (2025) Land Council Interactive Map. <https://alc.org.au/land-council-map/>
- Arcadia (2025) Landscape Package for 1 Crescent Street Holroyd
- Australian Bureau of Meteorology (BOM) (2024, 2025) Parramatta, New South Wales. May 2024 Daily Weather Observations.
- Australian Government Department of the Environment and Energy (2018) Interim Biogeographic Regionalisation for Australia (IBRA), Version 7 (Subregions).
- Australian Standard 4970 (2009) Protection of Trees on Development Sites.
- Bannerman, S.M. and Hazelton, P.A. (2011) Soil Landscapes of the Penrith 1:100,000 Sheet report, digital reprint, Office of Environment and Heritage, Sydney.
- Biodiversity Conservation Act (2016) <https://legislation.nsw.gov.au/#/view/act/2016/63/full>
- Biodiversity Conservation Regulation (2017) <https://www.legislation.nsw.gov.au/#/view/regulation/2017/432>
- Commonwealth Threatened Species Scientific Committee (2009) Commonwealth Listing Advice on Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest. Department of the Environment, Water, Heritage and the Arts. <http://www.environment.gov.au/biodiversity/threatened/communities/pubs/112-listing-advice.pdf>
- Cumberland Council (2021) Development Control Plan.
- Cumberland Council (2021) Local Environmental Plan.
- Department of Agriculture, Water and the Environment (DAWE) (2025) Species Profile and Threats Database (SPRAT), Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest. <https://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=112&status=Critically+Endangered>
- Department of Environmental Conservation (DEC) (2004) Threatened Species Survey and Assessment: Guidelines for developments and activities (working draft), New South Wales Department of Environment and Conservation, Hurstville, NSW.
- Department of Planning and Environment (DPE) (2022) State Vegetation Type Map.
- Department of Planning, Industry and Environment (DPIE) (2019) Guidance to assist a decision-maker to determine a serious and irreversible impact. <https://www.environment.nsw.gov.au/-media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/guidance-decision-makers-determine-serious-irreversible-impact-190511.pdf>
- Department of Planning, Industry and Environment (DPIE) (2020a) Biodiversity Assessment Methodology.
- Department of Planning, Industry and Environment (DPIE) (2020b) Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method.
- Eco Logical Australia (2023a) Concept Development Application: 1 Crescent Street, Holroyd – Arboricultural Impact Assessment.

Eco Logical Australia (2023b) Concept Development Application: 1 Crescent Street, Holroyd – Flora and Fauna Assessment.

Eco Logical Australia (2024) Arboricultural Impact Assessment – SSD-70283710: 1 Crescent Street, Holroyd

Google Earth (2025) 1 Crescent Street Holroyd.

Landcom (2004) Managing Urban Stormwater: Soils and Construction ‘The Blue Book’, Volume 1, Fourth Edition, New South Wales Government, ISBN 0-9752030-3-7.

Mitchell, P.B. (2002) NSW Ecosystems Study: Background and Methodology (Unpublished).

Naylor, S.D. (1995) Acid Sulfate Soil Risk Map Sheet, Department of Land and Water Conservation, Sydney.

Nearmap Australia Pty Ltd (2025) 1 Crescent Street Holroyd.

NSW Department of Climate Change, Energy, the Environment and Water (NDCCEEW) (2024a) Biodiversity Assessment Method Calculator Version 1.4.0.00.

NSW Department of Climate Change, Energy, the Environment and Water (NDCCEEW) (2025b) Biodiversity Values Map and Threshold Tool.

NSW Department of Climate Change, Energy, the Environment and Water (NDCCEEW) (2025c) eSPADE v2.1. <https://www.environment.nsw.gov.au/eSpade2Webapp#>

NSW Department of Climate Change, Energy, the Environment and Water (NDCCEEW) (2025d) NSW BioNet. The website of the Atlas of NSW Wildlife. <http://www.bionet.nsw.gov.au/>

NSW Department of Climate Change, Energy, the Environment and Water (NDCCEEW) (2025e) NSW BioNet. Threatened Biodiversity Data Collection.

NSW Department of Climate Change, Energy, the Environment and Water (NDCCEEW) (2025f) NSW BioNet. Vegetation Classification System.

NSW Government Spatial Services (2025) Six Maps Clip & Ship. <https://maps.six.nsw.gov.au/clipnship.html>

NSW Legislation (2025) State Environmental Planning Policy (Biodiversity and Conservation) 2021.

NSW Legislation (2025) State Environmental Planning Policy (Koala Habitat Protection) 2021.

NSW Scientific Committee (2009) Cumberland Plain Woodland in the Sydney Basin Bioregion – critically endangered ecological community listing, final determination.

Office of Environment and Heritage (OEH) (2009) Saving our Species Program – Cumberland Plain Woodland in the Sydney Basin Bioregion.

Planning Secretary’s Environmental Assessment Requirements for SSD-70283710, Lot 700 DP1241836 within Cumberland (2024).

PlantNET (2025) The NSW Plant Information Network System, Royal Botanic Gardens and Domain Trust, Sydney. <http://plantnet.rbgsyd.nsw.gov.au>

Robinson, L. (2003) ‘Field Guide to the Native Plants of Sydney’, Third Edition, Kangaroo Press.

Threatened Species Scientific Committee (2009) Commonwealth Listing Advice on Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest. Department of the Environment, Water, Heritage and the Arts. <http://www.environment.gov.au/biodiversity/threatened/communities/pubs/112-listing-advice.pdf>

Urbis (2024) Scoping Report for 1 Crescent Street Holroyd.

Woods Bagot (2025) Site Plans for Crescent Parklands, 1 Crescent Street Holroyd.

14. Appendices

Appendix A. Landscape Masterplan (Arcadia, 2025).

Appendix B. BAM Site- Field Survey Forma (copied directly from Electronic Data Sheet).

Appendix C. BAMC Biodiversity Credit Report – to be updated.

[illegible]

Appendix B. BAM Site- Field Survey Form (copied directly from Electronic Data Sheet).

BAM Site – Field Survey Form					
Date:	15.08.2025	Plot ID:	1	Photo #:	n/a
Zone:	56	Plot Dimensions:	50x20m	Easting:	315314
Datum:	GDA94	Middle bearing from 0m:	166	Northing:	6255156
PCT:	Zone 1: PCT 3320 (Canopy)				
Growth Form	Scientific Name	Cover	Abundance		
Tree (TG)	<i>Corymbia maculata</i>	20	4		
Tree (TG)	<i>Eucalyptus microcorys</i>	10	1		
Exotic	<i>Schinus spp.</i>	20	1		
HTE	<i>Ligustrum lucidum</i>	1	2		
Exotic	<i>Bougainvillea spp.</i>	10	10		
Exotic	<i>Strelitzia reginae</i>	3	3		
HTE	<i>Ehrharta erecta</i>	20	200		
HTE	<i>Chloris gayana</i>	10	300		
Exotic	<i>Melinis repens</i>	0.5	5		
Grass & grasslike (GG)	<i>Lomandra longifolia</i>	2	10		
HTE	<i>Bidens pilosa</i>	5	50		
Exotic	<i>Sonchus oleraceus</i>	10	50		
Exotic	<i>Cirsium vulgare</i>	3	5		
Forb (FG)	<i>Daucus glochidiatus</i>	0.2	5		
Exotic	<i>Fumaria capreolata</i>	2	15		
Exotic	<i>Lactuca floridana</i>	2	10		
Exotic	<i>Taraxacum officinale</i>	0.5	3		
Exotic	<i>Hypochaeris glabra</i>	2	20		
Exotic	<i>Jasminum polyanthum</i>	10	5		
	# Tree Stems Count	# Hollow Bearing Trees			
80+cm	absent	0			
50-79cm	present	0			
30-49cm	present	0			
20-29cm	absent	0			
10-19cm	present	0			
5-9cm	absent	0			
<5cm	absent	0			
Length of Logs (m)	0				
BAM Attribute (1x1m)	Litter Cover (%)				
1 (5m)	15				
2 (15m)	30				
3 (25m)	5				
4 (35m)	60				
5 (45m)	30				
Average	28				
Growth Form	Composition Data (Count of Native Cover)	Structure Data (Sum of Cover)			
Tree	2	30			
Shrub	0	0			
Grass	1	2			
Forb	1	0.2			
Fern	0	0			

Other	0	0
High Threat Exotics	4	36

BAM Site – Field Survey Form					
Date:	15.08.2025	Plot ID:	2	Photo #:	n/a
Zone:	56	Plot Dimensions:	10 x 100	Easting:	315310
Datum:	GDA94	Middle bearing from 0m:	122	Northing:	6255058
PCT:	Zone 1: PCT 3320 (Canopy)				
Growth Form	Scientific Name	Cover	Abundance		
Tree (TG)	<i>Corymbia maculata</i>	30	2		
Tree (TG)	<i>Eucalyptus tereticornis</i>	10	5		
Exotic	<i>Strelitzia reginae</i>	5	2		
HTE	<i>Ehrharta erecta</i>	15	80		
Grass & grasslike (GG)	<i>Lomandra longifolia</i>	5	10		
HTE	<i>Senecio madagascariensis</i>	3	10		
Exotic	<i>Taraxacum officinale</i>	1	5		
Exotic	<i>Sonchus oleraceus</i>	2	10		
Forb (FG)	<i>Oxalis spp.</i>	1	5		
HTE	<i>Conyza bonariensis</i>	0.5	5		
Exotic	<i>Sonchus arvensis</i>	5	20		
Exotic	<i>Modiola caroliniana</i>	2	10		
Exotic	<i>Medicago polymorpha</i>	0.5	5		
	# Tree Stems Count	# Hollow Bearing Trees			
80+cm	absent	0			
50-79cm	2	0			
30-49cm	absent	0			
20-29cm	present	0			
10-19cm	absent	0			
5-9cm	absent	0			
<5cm	absent	0			
Length of Logs (m)	0				
BAM Attribute (1x1m)	Litter Cover (%)				
1 (5m)	10				
2 (15m)	10				
3 (25m)	65				
4 (35m)	60				
5 (45m)	70				
Average	43				
Growth Form	Composition Data (Count of Native Cover)	Structure Data (Sum of Cover)			
Tree	2	40			
Shrub	0	0			
Grass	1	5			
Forb	1	1			
Fern	0	0			
Other	0	0			
High Threat Exotics	3	18.5			

BAM Site – Field Survey Form					
Date:	15.08.2025	Plot ID:	3	Photo #:	n/a
Zone:	56	Plot Dimensions:	10 x 100	Easting:	315007
Datum:	GDA94	Middle bearing from 0m:	70	Northing:	6254927
PCT:	Zone 2: PCT 3320 (Regenerating Stems)				
Growth Form	Scientific Name	Cover	Abundance		
Exotic	<i>Phoenix canariensis</i>	15	1		
Tree (TG)	<i>Eucalyptus tereticornis</i>	30	3		
Tree (TG)	<i>Corymbia maculata</i>	20	3		
Tree (TG)	<i>Acacia parramattensis</i>	5	10		
Shrub (SG)	<i>Pittosporum undulatum</i>	3	1		
HTE	<i>Ehrharta erecta</i>	10	40		
Exotic	<i>Setaria distans</i>	10	30		
Exotic	<i>Melinis repens</i>	1	5		
Exotic	<i>Sonchus oleraceus</i>	5	30		
Exotic	<i>Brassica fruticulosa</i>	5	20		
Exotic	<i>Cirsium vulgare</i>	1	5		
Exotic	<i>Modiola caroliniana</i>	0.5	5		
Exotic	<i>Chenopodium robertianum</i>	0.5	3		
HTE	<i>Bidens pilosa</i>	3	10		
Exotic	<i>Ipomoea spp.</i>	5	10		
Exotic	<i>Passiflora edulis</i>	2	5		
HTE	<i>Araujia sericifera</i>	1	3		
	# Tree Stems Count	# Hollow Bearing Trees			
80+cm	1	0			
50-79cm	absent	0			
30-49cm	present	0			
20-29cm	present	0			
10-19cm	present	0			
5-9cm	absent	0			
<5cm	present	0			
Length of Logs (m)	0				
BAM Attribute (1x1m)	Litter Cover (%)				
1 (5m)	60				
2 (15m)	65				
3 (25m)	60				
4 (35m)	40				
5 (45m)	30				
Average	51				
Growth Form	Composition Data (Count of Native Cover)	Structure Data (Sum of Cover)			
Tree	3	55			
Shrub	1	3			
Grass	0	0			
Forb	0	0			
Fern	0	0			
Other	0	0			
High Threat Exotics	3	14			



BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00048693/BAAS25016/24/00048694	1 Crescent Street Holroyd	05/08/2025
Assessor Name	Assessor Number	BAM Data version *
Christopher Moore	BAAS21009	Current classification (live - default) (82)
Proponent Names	Report Created	BAM Case Status
Lucas Flecha	02/10/2025	Finalised
Assessment Revision	BOS entry trigger	Assessment Type
3	BOS Threshold: Area clearing threshold	Part 4 Developments (Small Area)
Date Finalised	* 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.	
02/10/2025		

Potential Serious and Irreversible Impacts

Name of threatened ecological community	Listing status	Name of Plant Community Type/ID
Cumberland Plain Woodland in the Sydney Basin Bioregion	Critically Endangered Ecological Community	3320-Cumberland Shale Plains Woodland
Species		
Nil		

Assessment Id	Proposal Name	Page 1 of 3
00048693/BAAS25016/24/00048694	1 Crescent Street Holroyd	



BAM Biodiversity Credit Report (Like for like)

Additional Information for Approval

PCT Outside Ibra Added

None added

PCTs With Customized Benchmarks

PCT

No Changes

Predicted Threatened Species Not On Site

Name

No Changes

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

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact	HBT Cr	No HBT Cr	Total credits to be retired
3320-Cumberland Shale Plains Woodland	Cumberland Plain Woodland in the Sydney Basin Bioregion	0.4	0	5	5

Assessment Id

00048693/BAAS25016/24/00048694

Proposal Name

1 Crescent Street Holroyd

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BAM Biodiversity Credit Report (Like for like)

3320-Cumberland Shale Plains Woodland	Like-for-like credit retirement options					
	Name of offset trading group	Trading group	Zone	HBT	Credits	IBRA region
	Cumberland Plain Woodland in the Sydney Basin Bioregion This includes PCT's: 3319, 3320	-	3320_Canopy	No	4	Cumberland, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Cumberland Plain Woodland in the Sydney Basin Bioregion This includes PCT's: 3319, 3320	-	3320_Regen	No	1	Cumberland, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

No Species Credit Data

Credit Retirement Options

Like-for-like credit retirement options

Assessment Id

00048693/BAAS25016/24/00048694

Proposal Name

1 Crescent Street Holroyd

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