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Flora and Fauna Assessment

Rouse Hill High School, Withers Road, Rouse Hill, NSW

Prepared for: Savills Australia

28 February 2025 Version: 1.0 – Final

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Glossary and abbreviations

Acronym	Description
BC Act	NSW *Biodiversity Conservation Act 2016*
CEMP	Construction and Environmental Management Plan
Commonwealth DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
CPLS	Cumberland Plain Land Snail
DA	Development Application
DPE	NSW Department of Planning and Environment (now NSW DCCEEW)
DPHI	NSW Department of Planning, Housing and Infrastructure
DLS	Dural Land Snail
ECA	Ecological Constraints Assessment
EEC	Endangered Ecological Community
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EP&A Act	*Environmental Planning and Assessment Act 1979*
FFA	Flora and Fauna Assessment
GHFF	Grey-headed Flying-fox
ha	hectares
HBT	Hollow bearing tree
LGA	Local Government Area
mm/cm/m/km	millimetres/centimetres/metres/kilometres
MNES	Matters of National Environmental Significance
NSW DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water

Acronym	Description
OEH	Office of Environment and Heritage
REF	Review of Environmental Factors
PCT	Plant Community Type
PMST	Protected Matters Search Tool
SEPP	State Environmental Planning Policy
TEC	Threatened Ecological Community
THLEP	The Hills Local Environmental Plan 2019
WoNS	Weeds of National Significance
*	Denotes exotic species

1 Introduction

1.1 Purpose of report and legislative context

This Flora and Fauna Assessment (FFA) has been prepared for the proposed removal of vegetation to facilitate the development a new school building and associated pathway on Lot 105 // DP 1108407 ('Rouse Hill High School'), Withers Road, Rouse Hill, NSW 2155, hereafter referred to as the study area (**Figure 1.1**). The purpose of this report is to identify the flora and fauna within the study area and assess the likely impacts of the proposed development. The report addresses the legislative context provided in **Table 1.1**.

Table 1.1: Legislative framework reviewed in this report (Commonwealth, State and Local).

Instrument	Consideration	Context
Commonwealth		
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	Matters of National Environmental Significance	An action will require approval from the Minister if the action has, will have, or is likely to have, a significant impact on a matter of national environmental significance.
State (New South Wales)		
Biosecurity Act 2015	Priority Weeds	Describes the state and regional priorities for weeds in New South Wales.
Environmental Planning and Assessment Act 1979 (EP&A Act)	Part 5 – Infrastructure and environmental impact assessment	Outlines the framework for approval of activities by public authorities.
Environmental Planning and Assessment 2021	Section 170 and Section 171	Section 171(2)(c)(f)(g) and (h) relates to consideration of biodiversity

Instrument	Consideration	Context
Biodiversity Conservation Act 2016 (BC Act)	Part 7 – Biodiversity assessment and approvals under the Planning Act	Section 7.2 states that the biodiversity offset scheme thresholds do not apply to activities assessed under Part 5 of the EP&A Act. Section 7.3 provides the test for determining whether proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats. Section 7.8 addresses biodiversity assessment for Part 5 activities: if it is concluded that an impact will be significant, the proponent can prepare a species impact statement (SIS) or a Biodiversity Development Assessment Report (BDAR).
State Environmental Planning Policy – Biodiversity and Conservation 2021	Chapter 4 – Koala habitat protection	Encourages the conservation and management of koala habitat to ensure populations remain in their present range and the trend of population decline is reversed.
Water Management Act 2000	Chapter 3 – Water management implementation	Provides for the sustainable and integrated management of water sources for the benefit of both present and future generations.
Local Government		
The Hill Local Environmental Plan (THLEP) 2019	Part 7.4 – Terrestrial biodiversity	This clause aims to maintain terrestrial biodiversity, by protecting native fauna and flora, by protecting the ecological processes necessary for their continued existence, and by encouraging the conservation and recovery of native fauna and flora and their habitats.

1.2 Background and description of proposal

This report will accompany a Review of Environmental Factors (REF) to develop a school building and associated pathways at Rouse Hill High School. Removal of vegetation is required to allow for the proposed development. Vegetation within the study area consists of planted native vegetation and exotic grasslands, used as playing fields.

A desktop Ecological Constraints Assessment (ECA) (Ecoplanning 2022) has previously assessed the ecological values present within the study area including targeted Gastropod surveys.

1.3 Site description

1.3.1 Subject site and study area

The ***subject site*** is defined as 'the area directly affected by the proposal', and the ***study area*** includes 'the subject site and any additional areas which are likely to be affected by the proposal, either directly or indirectly', in accordance with OEH (2018).

For the purposes of this report, the study area encompasses the entirety of Rouse Hill High School (Lot 105 // DP 1108407) and the addition of the proposed drive way joining Caballo Street, along the southwestern boundary of the study area. The study area is bordered by Withers Road to the east, Ironbark Ridge Public School to the south and Iron Ridge Reserve and Caballo Street to the north and west. Situated wholly within The Hills Local Government Area (LGA), the study area is zoned under *The Hills Local Environmental Plan* (THLEP) *2019* as R3 – Medium Density Residential and is 5.85 ha in area (**Figure 1.2**).

The subject site occupies 0.25 ha within southwestern corner of the study area, its surrounded by existing teaching buildings, pathways, playing fields and two basketball courts (**Figure 1.3**).

One unnamed 1st order stream is mapped as traversing along the northern boundary of the study area (**Figure 1.4**). No evidence of the mapped stream was found during field surveys

1.3.2 The surrounding area

The land within 5 km of the study area is referred is predominantly zoned R3 – Medium Density Residential, RE1 – Public Recreation, SP2 – Stormwater Management System, MU1 – Mixed Use and patches of C2 – Environmental Conservation. Much of the surrounding area has been historically cleared for agricultural purposes and residential development. Native vegetation now covers approximately 29% of the area (**Figure 1.5**).

Figure 1.1: Study area and subject site

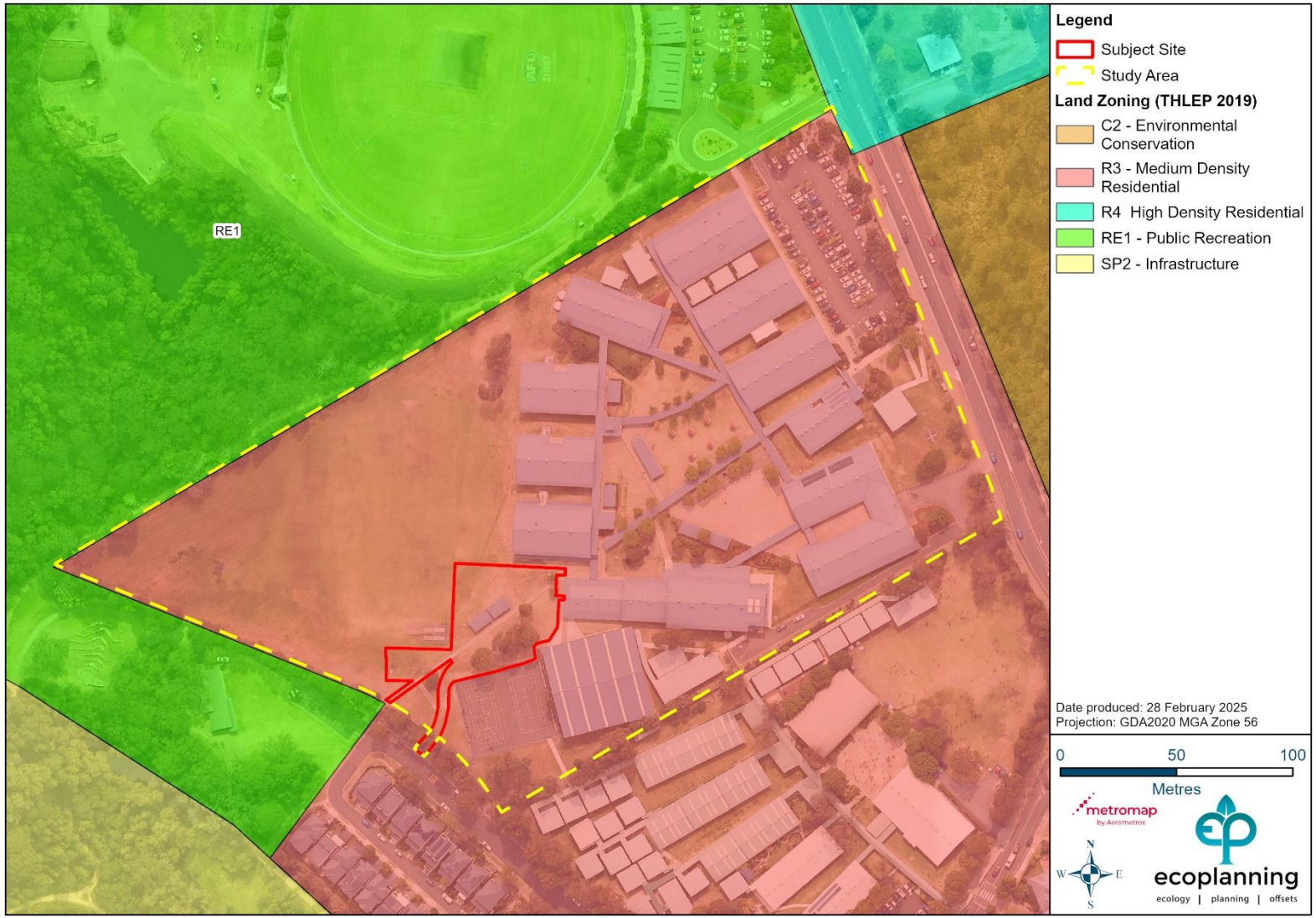

Figure 1.2: Land use zoning within the study area (THLEP 2019)

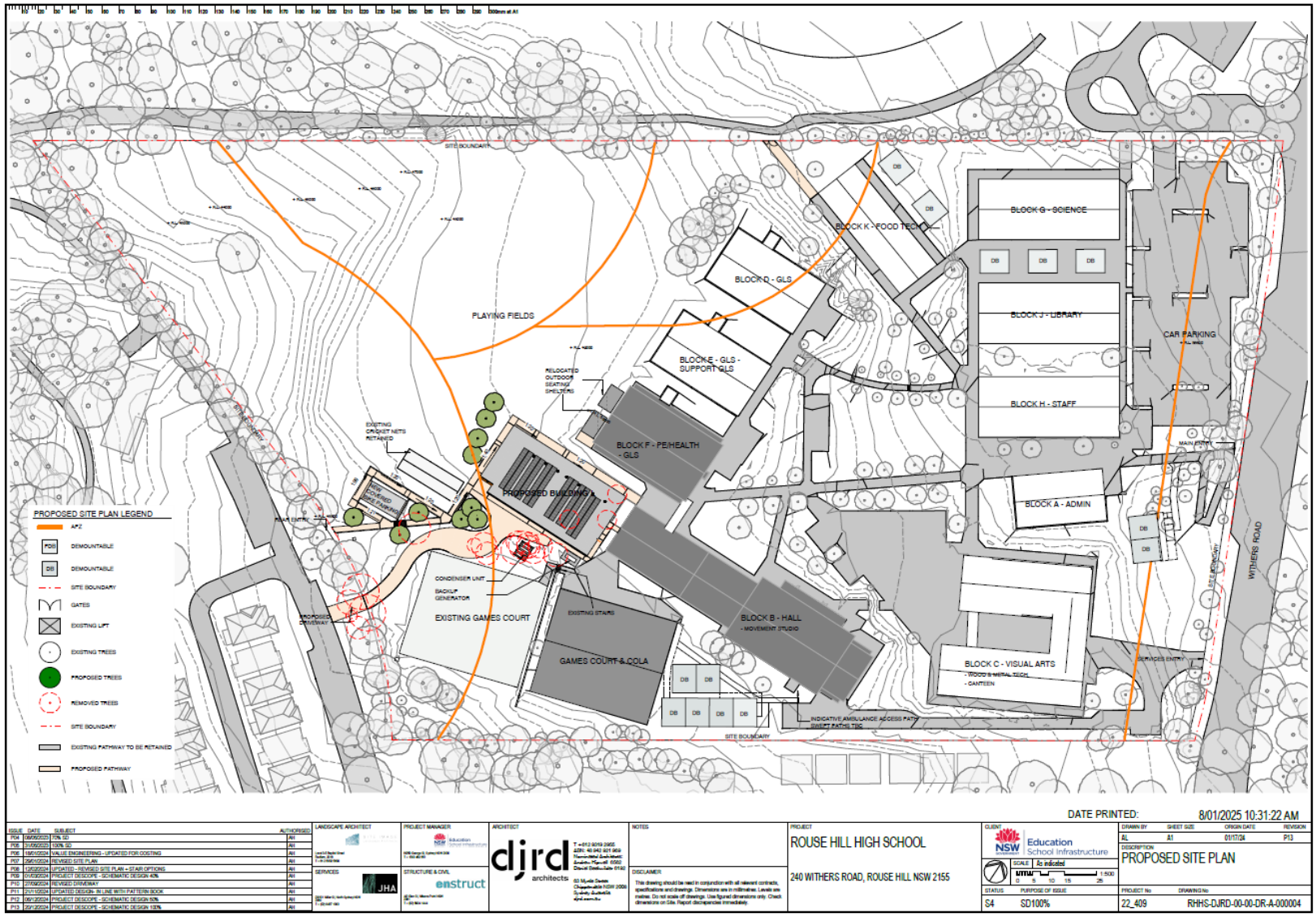

Figure 1.3: Proposed development within subject site (djrd architects 2025)

Figure 1.4: Mapped watercourse within the study area

Figure 1.5: Native vegetation within 5 km of the study area (DCCEEW 2024)

2 Methods

2.1 Literature and database review

A site-specific literature and database review was undertaken for the study area prior to undertaking the field survey and the preparation of this report, which included the following sources:

- Biodiversity Values Map (NSW DCCEEW 2025a)
- NSW State Vegetation Type Map (NSW DCCEEW 2024a)
- Soil landscape mapping from eSPADE (NSW DCCEEW 2024b)
- NSW BioNet Vegetation Classification (NSW DCCEEW 2025b)
- NSW BioNet Atlas (NSW DCCEEW 2025c)
- NSW Planning Portal Spatial Viewer (DPHI 2025)
- Protected Matters Search Tool (Commonwealth DCCEEW 2025)
- The Hills Local Environmental Plan 2019

Threatened species, populations and migratory species previously recorded within 5 km of the study area were considered (NSW DCCEEW 2025c). The likelihood of these species occurring within the study area was assessed by:

- Reviewing the location and date of recent (<5 years) and historical (>5-20 years) records.
- Assessing the available habitat within the study area and surrounding areas.
- Reviewing the scientific literature pertaining to each species and population.
- Applying expert knowledge of each species.

Following an assessment of the available habitat within the study area, the potential for each threatened species, population and/or migratory species to occur was considered. The potential for species to use the study area was identified as one of the following:

- “Recent record” = the species has been recorded in the study area within the past 5 years.
- “High” = the species has previously been recorded within (>5 years ago) or in proximity to (for mobile species) the study area, and/or habitat is present that is likely to be used by a local population.
- “Moderate” = suitable habitat for the species is present onsite but no evidence of the species is detected, and a relatively high number of recent records (5-20 years) has been recorded in the locality, or the species is highly mobile.
- “Low” = suitable habitat for the species is present onsite but is limited or highly degraded, with no evidence of the species detected and a relatively low number of recent records in the locality.
- “Not present” = suitable habitat for the species is not present onsite, or adequate survey has determined the species does not occur in the study area.

2.2 Field survey

Field survey was undertaken by Edwin Vaca (Consultant Ecologist) on 19 February 2025, totalling approximately 1 person hour (**Figure 2.1**). Weather conditions on the day of survey were clear, with light winds (**Table 2.1**). The inspection focused on traversing the subject site to determine the presence and location of native vegetation, areas of ecological value, habitat features, including hollow-bearing trees (HBTs) and potential threatened species habitat.

Table 2.1: Weather conditions on the day of survey from Richmond RAAF (station ID 067105), 18 km north-west of the study area.

Date	Temperature (°C)		Rainfall (mm)	Max wind	
	Min	Max		Direction	Speed (km/h)
19/02/2025	15.3	29.3	0	ESE	35

2.2.1 Vegetation communities and flora

The identification of Plant Community Types (PCT) was undertaken in accordance with the NSW PCT classification as described in the BioNet Vegetation Classification (DPE 2025c). Determination of the most appropriate PCT for native vegetation within the study area used the BioNet Vegetation Classification database to identify PCT types which matched the geographic distribution (based on IBRA subregions), vegetation formation and floristics of vegetation within the study area.

Relevant final determinations and conservation advice were used to determine if the vegetation patch fits the description of any threatened ecological communities (TEC) listed under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or the NSW *Biodiversity Conservation Act 2016* (BC Act).

2.2.2 Fauna and fauna habitat

Fauna habitat searches were conducted for potential foraging, roosting, breeding or nesting habitat of nocturnal and diurnal species. This includes tree hollows, stags, bird nests, possum dreys, decorticating bark, old growth trees, food trees (e.g. winter-flowering eucalypts, *Banksia* spp., and *Allocasuarina* spp.), culverts, dens, dams, riparian areas and refuge habitats of anthropogenic structures, including derelict sheds. Fauna observations during the survey were recorded and are presented in **Appendix B**. The primary sources of literature accessed for species nomenclature were:

- Birds – Christidis and Boles (2008)
- Mammals – Van Dyck and Strahan (2008)
- Reptiles and amphibians - Cogger (2018)

2.2.3 Survey limitations

The field survey aimed to record as many species as possible. However, a definitive list of the flora species within the study area cannot be gathered without systematic traverses and

surveys across multiple seasons. Additional flora and fauna species may be recorded across a longer survey period. However, the techniques used in this investigation are considered adequate to gather the data necessary to validate the vegetation communities and vegetation condition in the study area and assess the likelihood of occurrence of threatened species.

A full fauna survey following the *Threatened Species Survey and Assessment Guidelines* (DEC 2004) was not undertaken as sufficient detail to determine the likelihood of occurrence of threatened and migratory species for the purpose of this report was achieved through opportunistic surveys and habitat assessment during the field survey and surveys conducted as part of Ecoplanning (2022) ECA assessment. Further targeted threatened flora and fauna surveys were not considered necessary for this assessment, given that important habitat features, such as hollow-bearing trees are not present within the subject site.

Figure 2.1: Survey effort

3 Results

3.1 Literature and database review

3.1.1 Topography, drainage, soils and biodiversity values

The study area gently slopes southwest towards Ironbark Ridge Reserve and Caddies Creek beyond the western boundary of the site. One unnamed 1st order stream is mapped as traversing along the northern boundary of the study area towards Ironbark Ridge Reserve (**Figure 1.4**). No evidence of the mapped stream was found during field surveys, rather the area mapped as containing a 1st order stream within the subject site consists of school buildings, a car park and playing fields. The ECA (Ecoplanning 2022) reviewed historical imagery, which showed that the mapped stream was dammed in 1978. The dam was later was decommissioned and the current school buildings built over the mapped stream in 2013. Nevertheless, the mapped stream and respective riparian buffers (**Figure 1.4**) are not mapped within the subject site, indicating that development within the subject site will not impact the mapped stream.

Soil landscape mapping from eSPADE has mapped the study area as the Blacktown soil landscape (**Figure 3.1**) (NSW DCCEEW 2025b). The Blacktown soil landscape, which covers the entire study area, is characterised by gently undulating rises on Wianamatta Group shales. Soils within the Blacktown soil landscape are typically consist of Red and Brown Podzolic Soils on crests grading to Yellow Podzolic Soils on lower slopes and in drainage lines.

The site is located wholly within the Yengo IBRA subregion within the Sydney Basin IBRA region.

No mapped Biodiversity Values (NSW DCCEEW 2025a) occur within the study area.

3.1.2 Threatened species, populations and migratory species

A search of relevant databases and literature identified 53 threatened species within 5 km of the study area, including 17 plant species, 20 bird species, 13 mammal species, 2 snails and 1 frog (NSW DCCEEW 2025c).

Based on proximate recent records (**Figure 3.2**) and desktop assessment, the likelihood of occurrence analysis undertaken prior to the field survey identified eleven threatened fauna species and one threaten flora species as having a ‘moderate’ likelihood to use the study area (**Appendix A**):

- *Ninox strenua* (Powerful Owl)
- *Meridolum corneovirens* (Cumberland Plain Land Snail)
- *Pommerhelix duralensis* (Dural Land Snail)
- *Falsistrellus tasmaniensis* (Eastern False Pipistrelle)
- *Micronomus norfolkensis* (Eastern Coast Free-tailed Bat)
- *Miniopterus australis* (Little Bent-winged Bat)
- *Miniopterus orianae oceanensis* (Large Bent-winged Bat)
- *Myotis macropus* (Southern Myotis)
- *Pteropus poliocephalus* (Grey-headed Flying-fox)
- *Saccolaimus flaviventris* (Yellow-bellied Sheathtail-bat)

- *Scoteanax rueppellii* (Greater Broad-nosed Bat)
- *Epacris purpurascens* var. *purpurascens*

Following field assessment only two species retained a 'moderate' likelihood of occurrence within the study area, due to potential suitable foraging habitat present within the study area:

- *Ninox strenua* (Powerful Owl)
- *Pteropus poliocephalus* (Grey-headed Flying-fox)

The likelihood of occurrence for all other species was updated to low, post field assessment, due to factors that included:

- Limited native vegetation present within study area,
- Lack of vegetation connectivity,
- Highly disturbed condition of the study area (mowing, landscaping, mulching, playing fields and school grounds),
- Lack of suitable foraging habitat,
- Building present in good condition and actively maintained, thus, not providing potential roosting habitat for microbat species,
- Gastropod targeted surveys (Ecoplanning 2022) did not identify any threatened gastropod species within the study area.

3.1.3 Vegetation and threatened ecological communities

The State Vegetation Type Map (SVTM) (NSW DCCEEW 2024a) indicates that the study area may support Cumberland Shale-Sandstone Ironbark Forest (PCT 3321) along the northern boundary and Cumberland Shale Plains Woodland (PCT 3320) mapped in one patch along the southern lot boundary (**Figure 3.3**). Both PCTs form part of TECs listed under the BC Act and/or the EPBC Act.

PCT 3321 forms part of the Shale Sandstone Transition Forest in the Sydney Basin Bioregion which is a critically endangered ecological community (CEEC) under the BC Act and EPBC Act.

PCT 3320 forms part of two TECs listed under the BC Act; Cumberland Plain Woodland in the Sydney Basin Bioregion CEEC and Shale Gravel Transition Forest in the Sydney Basin Bioregion endangered ecological community (EEC). It also forms part of Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest, a CEEC under the EPBC Act.

The Commonwealth Protected Matters Search Tool (PSMT) (Commonwealth DCCEEW 2025) identified ten threatened ecological communities that are considered likely to occur within the study area or surrounding area. These include:

- Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion
- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland
- Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community
- Coastal Upland Swamps in the Sydney Basin Bioregion
- Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion

- Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest
- River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria
- Shale Sandstone Transition Forest of the Sydney Basin Bioregion
- Turpentine-Ironbark Forest of the Sydney Basin Bioregion
- Western Sydney Dry Rainforest and Moist Woodland on Shale

Figure 3.1: Soil Landscapes surrounding the study area (NSW DCCEEW 2024b)

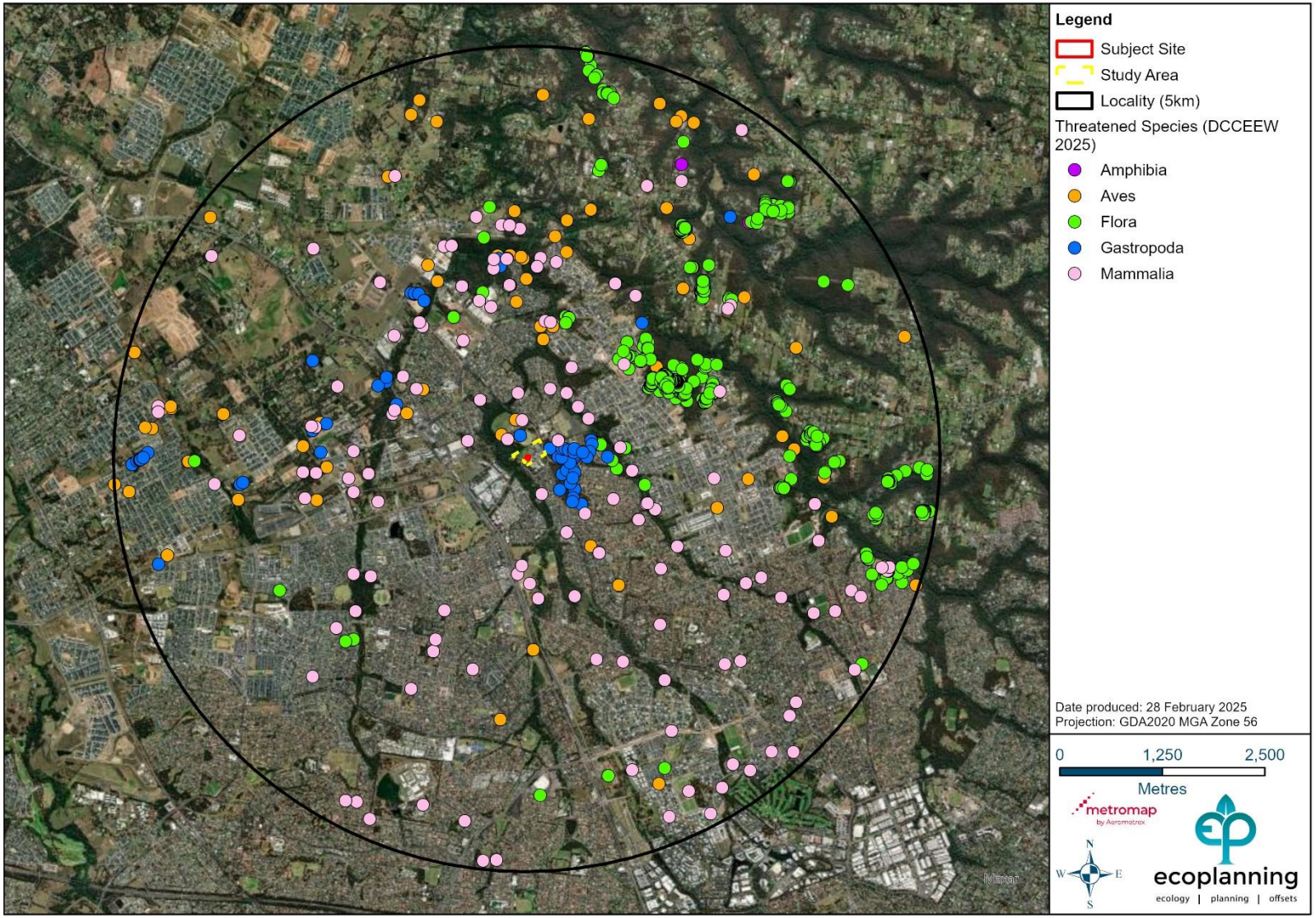

Figure 3.2: Threatened fauna species within 5 km of the study area (NSW DCCEEW 2025c)

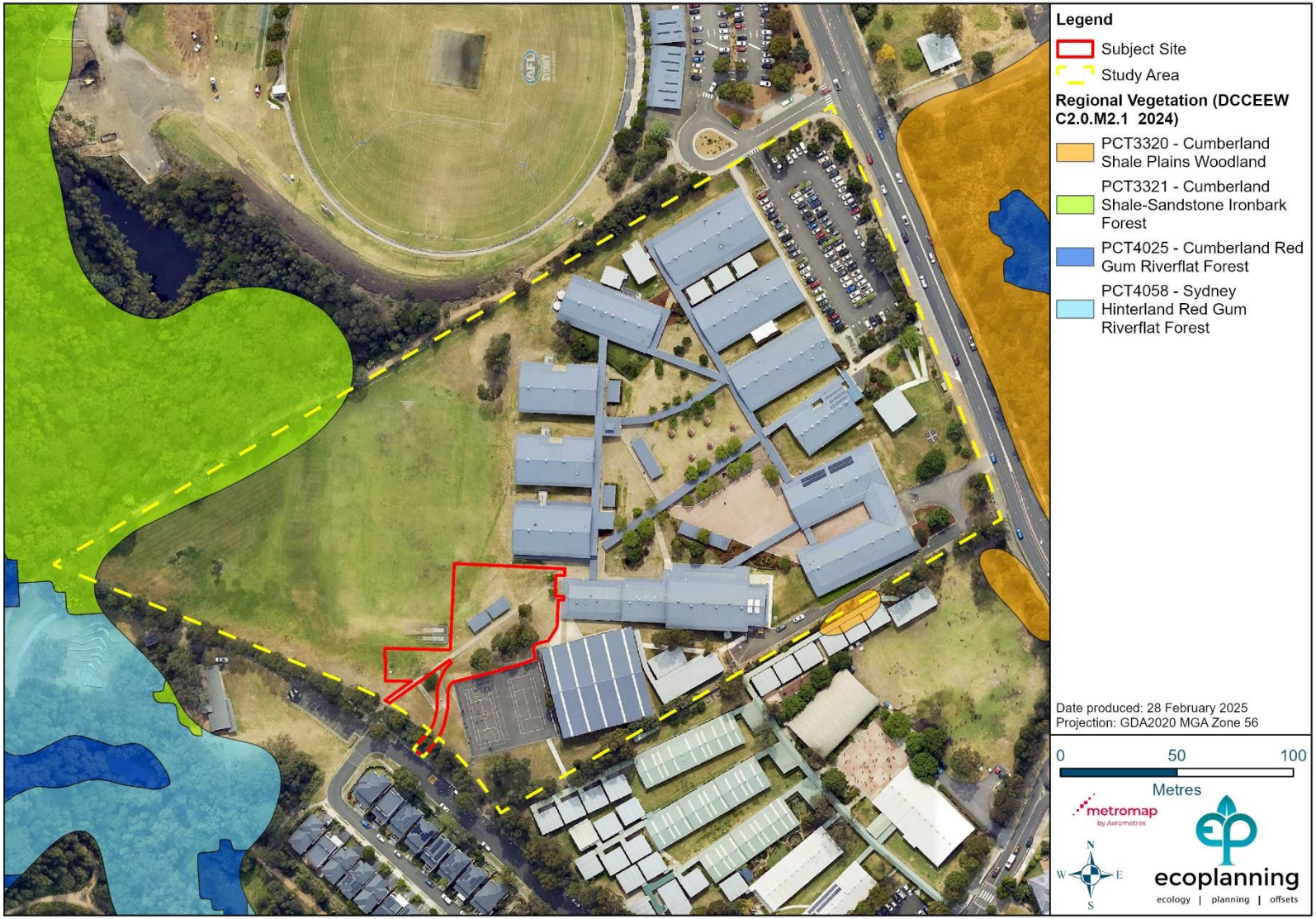

Figure 3.3: Predicted Plant Community Types within the study area (NSW DCCEEW 2024a)

3.2 Field survey

3.2.1 Vegetation communities

Vegetation within the study area was consistent with the following vegetation types:

- Planted natives and exotics
- Exotic grassland

Floristic data collected during the field survey and following the review of previous vegetation mapping and historic aerial imagery, vegetation on site did not conform to any PCT, rather, vegetation within the study area consists predominantly of planted native and exotic cultivars used for landscape plantings. Native canopy trees are present within the study area that consist of a mix of endemic and non-endemic Eucalypt species often used in landscape plantings. The alignment, size and habit of these trees suggests that they are all planted and are not remnant species.

Most of the study area is dominated by areas of exotic grassland, which are used as playing fields. The remaining areas are occupied by school buildings and associated infrastructure.

Vegetation within the study area does not form part of any listed TEC listed under the BC Act or the EPBC Act. The condition and extent of the vegetation types present within the study area is provided in **Table 3.1** and **Figure 3.4**.

Table 3.1: Area and condition class of each vegetation type within the study area.

Vegetation type	Extent within study area*	Extent within subject site*
Planted native and exotic	0.45 ha	0.02 ha
Exotic grassland	2.96	0.18 ha
Vegetation total	**3.40 ha**	**0.20 ha**
Infrastructure	2.45 ha	0.04 ha
Total	**5.85 ha**	**0.25 ha**

***subject to rounding errors

Planted native and exotic

This vegetation zone presented as a broad range of planted canopy and shrub species with an underscrubbed ground layer that was either mown or mulched. Species characteristic of this vegetation type included *Corymbia citriodora* (Lemon-scented Gum), *Fraxinus oxycarpa** (Raywood Ash), *Allocasuarina littoralis* (Black She-Oak) *Grevillea* spp., *Callistemon* spp., *Lomandra longifolia* (Spiny-headed Mat-rush), *Bidens pilosa** (Cobbler's Pegs), *Acacia falcata*, *Stellaria media** (Common Chickweed), *Banksia serrata* (Old-man Banksia) and *Centella asiatica* (Indian Pennywort).

Areas within the subject site contained native canopy trees such as *Eucalyptus tereticornis* (Forest Red Gum), *Eucalyptus moluccana* (Grey Box), *Eucalyptus robusta* (Swamp Mahogany) and *Corymbia maculata* (Spotted Gum), as well as *Corymbia citriodora* (Lemon-scented Gum) a native species but not indigenous to the region (**Figure 3.5**). Based on historic aerial imagery and location of these canopy species, it is clear that these native trees have been planted as part of the school landscaping. The ground layer under the trees is mulched with *Bidens pilosa** (Cobbler's Pegs) and *Acacia falcata* the only species within the ground layer. Outside the mulched areas, the ground layer is dominated by *Paspalum dilatatum** (Paspalum), *Cenchrus clandestinus** (Kikuyu Grass) and *Cynodon dactylon* (Common Couch), with other species such as Taraxacum officinale* (Dandelion), *Portulaca oleracea* (Pigweed), *Centella asiatica* (Indian Pennywort), *Plantago lanceolata** (Lamb's Tongues) and *Trifolium repens** (White Clover). The southern portion of the subject site was cleared and mown (**Figure 3.6**), it did not contain any canopy or shrub layer, the ground consisted of exotic grassland.

Exotic grassland

This vegetation zone was devoid of canopy and midstorey species, presenting as a frequently mown grassy area largely used as playing fields. Exotic grass species dominated this vegetation patch, namely *Cenchrus clandestinus** (Kikuyu Grass), and *Paspalum dilatatum** (Paspalum). Commonly occurring exotic species included and *Trifolium repens** (White Clover). Scattered native species included *Cynodon dactylon* (Common Couch), *Portulaca oleracea* (Pigweed), and *Centella asiatica* (Indian Pennywort) (**Figure 3.7**).

3.2.2 Flora species

A total of 24 flora species were recorded in the study area during the field survey, of which 13 (50%) were native (**Appendix B**). This is not a comprehensive list of all flora species present within the study area, but rather represents those species identified whilst traversing the site when mapping vegetation community boundaries and undertaking searches for threatened species and their habitat. One priority weed listed under the *Biosecurity Regulation 2017* was recorded within the study area (**Table 3.2**).

Table 3.2: Priority weeds and Weeds of National Significance within the study area.

Scientific name / Common name	High Threat Weed	WoNS[1]	Duty[2]
Cenchrus clandestinus Kikuyu Grass	✓		-

Figure 3.4: Validated vegetation within study area

Figure 3.5: Planted native and exotic vegetation within the subject site

Figure 3.6: Cleared exotic grassland within the southern portion of the subject site

Figure 3.7: Areas of exotic grasslands, utilised as playing fields in the study area

3.2.3 Fauna and fauna habitat

A total of seven fauna species were observed within the study area during the field survey, all of which were species of birds common to urban environments. No threatened fauna species were observed, although surveys were limited to opportunistic observations at the time of the survey (**Appendix B**). No hollow-bearing trees were found within the study area. The notable lack of large, old trees across the site is likely a result of historical clearing. No permanent watercourses or ephemeral drainage lines were observed within the study area.

Nevertheless, flowering Eucalypt species, present within the subject site, may provide foraging habitat for a range of bird and arboreal mammal species. The planted ornamental shrubs onsite such as *Grevillea* spp., and *Callistemon* spp. also may act as a foraging resource for various nectivorous fauna species.

3.2.4 Cumberland Plain Land Snail and Dural Land Snail targeted surveys

Targeted surveys for Cumberland Plain Land Snail (CPLS) (*Meridolum corneovirens*) and Dural Land Snail (DLS) (*Pommerhelix duralensis*) were conducted in 2022 as part of the ECA (Ecoplanning 2022). The surveys covered the entire study area and included sorting through leaf litter, overturning logs, rocks, and bark. Some survey effort was also completed in areas where native ground cover was low, such as garden beds and landscaped gardens, given these areas covered the majority of the study area. Inorganic objects (i.e., rubbish) were also overturned to check for the species (**Figure 3.8**).

A total of three snail shells were recovered during the targeted survey, all being found in leaf litter at the base of planted *Callistemon* spp. No live specimens were found. Identification of all specimens recovered from the survey was based on the identification guide Australian Land Snails Volume 1: A field guide to eastern Australian species (1st edn.) (J. Stanisic, et al. 2010). The three shell specimens recovered were identified as *Cornu aspersum* (Common Garden Snail), an exotic species.

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Figure 3.8: Gastropod survey effort (Ecoplanning 2022)

4 Impact assessment

This section outlines the anticipated direct and indirect impacts of the proposed development within the study area. Avoidance and mitigation measures are also proposed in this section.

4.1 Direct impacts

Direct impacts associated with the proposed development include removal of planted native and exotic vegetation and areas of exotic grasslands.

4.1.1 Assessment of impacts to vegetation

Impacts to 0.02 ha of planted native and exotic vegetation within the subject site are expected through the removal of planted canopy trees, shrubs, and grasses. Vegetation clearing is limited to the subject site boundaries and will also include 0.18 ha of exotic grassland. In total, 0.20 ha of vegetated land, which is actively landscaped (mown, cleared, mulched) and consists of planted native and exotic species (including some planted native non-indigenous species), as well as exotic grasslands, used for playing fields, are expected to be removed.

4.1.2 Loss of fauna habitat

The planted native and exotic canopy trees to be removed do not contain any hollows and nests were not identified at the time of survey. However, the loss of the canopy trees can represent a loss in foraging and roosting habitat for mobile fauna species. The shrub layer is limited within the subject site, however, may still provide foraging or refuge habitat for mobile fauna species. The ground layer is cleared and largely exotic, limiting potential for providing any fauna habitat.

4.2 Indirect impacts

It is often difficult to quantify indirect impacts of clearing landscaped vegetation, such as exotic grasslands, planted native and exotic canopy trees, however, for this proposal indirect impacts may include impacts such as noise pollution, erosion, weed spread and edge effects associated with the initial removal of vegetation. Considering the current use of the study area, and low ecological constraints present, particularly within the subject site, impacts to biodiversity are predicted to not be significant and mitigated through measures discussed in **Section 4.3** below.

4.3 Avoidance, minimisation and mitigation of impacts to vegetation and habitat

One of the purposes of the BC Act is to establish a framework to avoid, minimise and (where required) offset the impacts of proposed development and land use change on biodiversity. The proposed development will remove a total of 0.02 ha of planted native and exotic vegetation and exotic grasslands to allow the proposed development. Location requirements for the teaching building, do not allow for the avoidance of impacts, however, mitigation measures can be put in place to avoid and edge impacts. These include:

- Areas of vegetation beyond the subject site will be 'no-go zones' for equipment and will be clearly identified.
- Any exotic vegetation removed from the subject site will be disposed of at an appropriate facility.
- 24 hours prior to removal of planted native and exotic vegetation from the subject site, a pre-clearance survey should be conducted, by a suitably qualified ecologist to ensure fauna is not actively using the subject site as breeding habitat.
- The proposal will plant canopy tree species around the new development to compensate for the direct impacts. All vegetation planted should consist of flora species consistent with locally occurring native species, in particular flora species from local PCTs, such as PCT 3320 and PCT 3321, should be used for any future landscape planting.

4.4 Legislative context

4.4.1 Commonwealth considerations

The EPBC Act establishes a process for assessing the environmental impact of activities and developments where MNES may be affected. Under the Act any action which "has, will have, or is likely to have a significant impact on a matter of national environmental significance" is defined as a "controlled action", and requires approval from the Commonwealth Department of Climate Change, Energy, the Environment and Water (Commonwealth DCCEEW) who is responsible for administering the EPBC Act.

Threatened flora and fauna species

No threatened flora or fauna species were identified within the study area. One threatened fauna species listed under the EPBC Act was assessed as having a 'moderate' likelihood of occurring within the study area for foraging purposes only:

- Grey-headed Flying-fox (*Pteropus poliocephalus*)

Impact assessments in accordance with the Significant Impact Guidelines for MNES (DoE 2013) for the species concluded that given the small amount of habitat proposed for removal, the proposal will not have a significant impact upon an important population of the species (**Appendix C**). A referral to the Commonwealth is not recommended for the species.

Threatened ecological communities

No TECs listed under the EPBC Act were found within the study area.

4.4.2 State considerations

Biodiversity Conservation Act 2016

No threatened ecological communities listed under the BC Act were identified in the study area.

Two threatened fauna species listed under the BC Act were assessed as having a 'moderate' likelihood of occurring within the study area, for foraging purposes only:

- Grey-headed Flying-fox (*Pteropus poliocephalus*)
- *Nixon strenua* (Powerful Owl)

The Test of Significance has been undertaken for these threatened species, which concluded that no significant impacts to threatened species will occur as a result of the proposal (**Appendix D**).

It should be noted that BioNet (NSW DCCEEW 2025c) records seven species of microbats (**Appendix A**) within 1 km of the study area, however, it has been determined that the likelihood of occurrence for these microbat species is low due to the minimal foraging habitat, lack of roosting habitat and active disturbance to areas within the study area. Additionally, suitable native habitat for the species (good condition native vegetation with existing connectivity) surrounds the study area, with Ironbark Ridge Reserve to the west, and Bruce Purser Reserve to the North.

State Environmental Planning Policy –Biodiversity and Conservation 2021

Chapter 4 of the *State Environmental Planning Policy* (SEPP) *(Biodiversity and Conservation) 2021* states that all LGAs listed in Schedule 2 of the SEPP are subject to the development controls outlined in Chapter 4. The Hills LGA is not listed within Schedule 2 and as such development within this LGA is not subject to the controls outlined in Chapter 4. Furthermore, as the proposed activity is being assessed under Part 5 of the EP&A Act, Chapter 4 of the SEPP is not applicable.

Water Management Act 2000

Under the *Water Management Act 2000*, any development within 'waterfront land' (defined as the bed and bank of any river, lake or estuary and all land within 40 m of the highest bank of the river, lake or estuary) requires a Controlled Activity Approval (CAA). As the subject site is more than 40 m from the closest mapped watercourse, a CAA is not required for the proposed works.

4.4.3 Local considerations

The Hills Local Environmental Plan 2019

The objective of Section 7.4 of the THLEP is to protect and maintain terrestrial biodiversity by-

(a) protecting native fauna and flora, and

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

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

The clause applies to land identified as 'Biodiversity' on the THLEP Terrestrial Biodiversity Map.

The study area does not feature on Council's Terrestrial Biodiversity layer, therefore, Section 7.4 of the THLEP does not apply

5 Conclusion and recommendations

This FFA has described the ecological values and assessed the potential impacts of a proposed development located within Lot 105 // DP 1108407 ('Rouse Hill High School'), Withers Road, Rouse Hill 2155. A total of 0.02 ha of planted native and exotic vegetation and 0.18 ha of exotic grassland will be removed to construct the proposed development. Vegetation within the study area does not form part of any PCT due to various native landscape cultivar species used within the school grounds. No TECs were identified within the study area.

Once threatened species listed under the EPBC Act and two threatened species listed under the BC Act were assessed as having a 'moderate' likelihood of occurrence within the study area for foraging purposed only; however, no threatened species were recorded during the field survey. Potential impacts to these threatened species have been considered against relevant assessments of significance, using relevant guidelines. The assessments concluded that potential impacts would not constitute a significant impact under the EPBC Act or the BC Act. Targeted surveys for Cumberland Plain Land Snail (CPLS) and Dural Land Snail (DLS) did not identify either species within the study area.

The activity does not trigger the Biodiversity Offsets Scheme under the BC Act as it is assessed under Part 5 of the EP&A Act and application of the Test of Significance concluded there will not be a significant impact to threatened species with a moderate likelihood of occurrence.

A referral to the Commonwealth DCCEEW is not required for the proposed development.

The potential impacts associated with the proposal will be mitigated through measures recommended in **Section 4.3** of this report.

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Appendix A Likelihood of occurrence

Scientific Name Common Name	Legal Status	Number of records	Closest records and date	Most recent and proximity	Likelihood of occurrence	
					Prior to field assessment	Post to field assessment
KINGDOM: Animalia; CLASS: Amphibian						
Pseudophryne australis (Red-crowned Toadlet)	BC Act = V	2	1.2 km (29/10/2014)	4.8 km (21/09/2015)	Low	Low
KINGDOM: Animalia; CLASS: Aves						
Apus pacificus (Fork-tailed Swift)	EPBC Act = C,J,K	2	2.1 km (08/02/2017)	4.5 km (15/06/2018)	Low	Low
Ardenna pacifica (Wedge-tailed Shearwater)	EPBC Act = J	1	3.6 km (22/04/2015)	3.6 km (22/04/2015)	Low	Low
Artamus cyanopterus cyanopterus (Dusky Woodswallow)	BC Act = V	8	0.3 km (21/10/2009)	4.6 km (10/08/2018)	Low	Low
Calidris ruficollis (Red-necked Stint)	EPBC Act = C,J,K	1	3.5 km (01/01/2013)	3.5 km (01/01/2013)	Low	Low
Callocephalon fimbriatum (Gang-gang Cockatoo)	BC Act = E1,3 EPBC Act = E	1	2.4 km (05/12/2018)	2.4 km (05/12/2018)	Low	Low
Calyptorhynchus lathami lathami (South-eastern Glossy Black-Cockatoo)	BC Act = V,2 EPBC Act = V	8	1.9 km (16/03/2018)	3.6 km (17/08/2020)	Low	Low
Chthonicola sagittata (Speckled Warbler)	BC Act = V	1	2.7 km (05/02/2018)	2.7 km (05/02/2018)	Low	Low
Daphoenositta chrysoptera (Varied Sittella)	BC Act = V	11	2.4 km (07/06/2006)	3.8 km (05/02/2020)	Low	Low
Gallinago hardwickii (Latham's Snipe)	BC Act = V EPBC Act = V,J,K	3	3.5 km (14/02/2019)	3.5 km (14/02/2019)	Low	Low
Glossopsitta pusilla (Little Lorikeet)	BC Act = V	10	1.3 km (07/03/2011)	3.6 km (25/05/2021)	Low	Low
Haliaeetus leucogaster (White-bellied Sea-Eagle)	BC Act = V	3	2.5 km (31/08/2012)	3 km (17/12/2021)	Low	Low
Hieraaetus morphnoides (Little Eagle)	BC Act = V	4	2.5 km (23/07/2019)	2.5 km (23/07/2019)	Low	Low
Hirundapus caudacutus (White-throated Needletail)	BC Act = V EPBC Act = V,C,J,K	1	2.8 km (07/01/2008)	2.8 km (07/01/2008)	Low	Low
Lathamus discolor (Swift Parrot)	BC Act = E1 EPBC Act = CE	21	0.4 km (28/05/2010)	2.5 km (27/07/2022)	Low	Low
Lophoictinia isura (Square-tailed Kite)	BC Act = V,3	13	1.9 km (15/03/2020)	1.9 km (15/03/2020)	Low	Low

Scientific Name Common Name	Legal Status	Number of records	Closest records and date	Most recent and proximity	Likelihood of occurrence	
					Prior to field assessment	Post to field assessment
Neophema pulchella (Turquoise Parrot)	BC Act = V,3	1	2.1 km (08/02/2017)	2.1 km (08/02/2017)	Low	Low
Ninox strenua (Powerful Owl)	BC Act = V,3	31	0.5 km (16/02/2019)	3.8 km (26/10/2022)	Moderate	Low
Pandion cristatus (Eastern Osprey)	BC Act = V,3	1	3 km (17/12/2021)	3 km (17/12/2021)	Low	Low
Petroica boodang (Scarlet Robin)	BC Act = V	1	3.5 km (01/01/2013)	3.5 km (01/01/2013)	Low	Low
Tyto novaehollandiae (Masked Owl)	BC Act = V,3	3	1.3 km (07/10/2023)	1.3 km (07/10/2023)	Low	Low
KINGDOM: Animalia; CLASS: Gastropoda						
Meridolum corneovirens (Cumberland Plain Land Snail)	BC Act = E1	59	0.3 km (27/11/2009)	2.7 km (13/10/2023)	Moderate	Low
Pommerhelix duralensis (Dural Land Snail)	BC Act = E1 EPBC Act = E	17	0.3 km (28/05/2010)	2.8 km (22/08/2019)	Moderate	Low
KINGDOM: Animalia; Mammals						
Chalinolobus dwyeri (Large-eared Pied Bat)	BC Act = E1 EPBC Act = E	5	1.2 km (29/10/2014)	1.7 km (16/12/2019)	Low	Low
Dasyurus maculatus (Spotted-tailed Quoll)	BC Act = V EPBC Act = E	1	2.1 km (31/10/2020)	2.1 km (31/10/2020)	Low	Low
Falsistrellus tasmaniensis (Eastern False Pipistrelle)	BC Act = V EPBC Act = N/A	20	0.7 km (23/11/2012)	2.7 km (13/10/2023)	Moderate	Low
Micronomus norfolkensis (Eastern Coastal Free-tailed Bat)	BC Act = V	29	0.4 km (31/08/2016)	2.7 km (13/10/2023)	Moderate	Low
Miniopterus australis (Little Bent-winged Bat)	BC Act = V	15	1.2 km (29/10/2014)	2.7 km (13/10/2023)	Moderate	Low
Miniopterus orianae oceanensis (Large Bent-winged Bat)	BC Act = V	48	0.4 km (17/06/2005)	1.8 km (26/03/2023)	Moderate	Low
Myotis macropus (Southern Myotis)	BC Act = V	37	0.3 km (31/08/2016)	2.7 km (13/10/2023)	Moderate	Low
Petaurus australis (Yellow-bellied Glider)	BC Act = V EPBC Act = V	6	0.8 km (14/09/2018)	2.8 km (22/08/2019)	Low	Low
Phascolarctos cinereus (Koala)	BC Act = E1 EPBC Act = E	1	3.6 km (20/05/2021)	3.6 km (20/05/2021)	Low	Low
Pteropus poliocephalus (Grey-headed Flying-fox)	BC Act = V EPBC Act = V	100	0.4 km (09/08/2018)	4.4 km (25/11/2023)	Moderate	Moderate
Saccolaimus flaviventris (Yellow-bellied Sheathtail-bat)	BC Act = V	14	0.3 km (31/08/2016)	3 km (17/12/2021)	Moderate	Low

Scientific Name Common Name	Legal Status	Number of records	Closest records and date	Most recent and proximity	Likelihood of occurrence	
					Prior to field assessment	Post to field assessment
Scoteanax rueppellii (Greater Broad-nosed Bat)	BC Act = V	30	0.3 km (31/08/2016)	2.3 km (19/11/2022)	Moderate	Low
Vespadelus troughtoni (Eastern Cave Bat)	BC Act = V	3	0.9 km (14/04/2020)	2.3 km (19/11/2022)	Low	Low
KINGDOM: Plantae						
Acacia bynoeana (Bynoe's Wattle)	BC Act = E1 EPBC Act = V	5	4.2 km (11/12/2007)	4.2 km (02/01/2008)	Low	Low
Callistemon linearifolius (Netted Bottle Brush)	BC Act = V,3	1	3.2 km (12/09/2016)	3.2 km (12/09/2016)	Low	Low
Cryptostylis hunteriana (Leafless Tongue Orchid)	BC Act = V,2 EPBC Act = V	1	4.7 km (29/11/2021)	4.7 km (29/11/2021)	Low	Low
Darwinia biflora	BC Act = V EPBC Act = V	575	1.2 km (29/10/2014)	3.6 km (18/11/2022)	Low	Low
Epacris purpurascens var. *purpurascens*	BC Act = V	37	0.8 km (09/09/2010)	1.7 km (21/08/2024)	Moderate	Low
Eucalyptus nicholii (Narrow-leaved Black Peppermint)	BC Act = V EPBC Act = V	8	1 km (29/11/2006)	4 km (18/01/2020)	Low	Low
Eucalyptus sp. *Cattai*	BC Act = E4A EPBC Act = CE	494	1.8 km (02/11/2018)	4.2 km (14/02/2023)	Low	Not present
Grevillea juniperina subsp. *juniperina* (Juniper-leaved Grevillea)	BC Act = V	1	4 km (03/05/2007)	4 km (03/05/2007)	Low	Low
Hibbertia superans	BC Act = E1	511	1.8 km (01/10/2019)	4.6 km (03/10/2022)	Low	Low
Isotoma fluviatilis subsp. *fluviatilis*	BC Act = 3 EPBC Act = X	1	1.9 km (18/12/2008)	1.9 km (18/12/2008)	Low	Low
Leucopogon fletcheri subsp. *fletcheri*	BC Act = E1	3	2.2 km (08/09/2006)	2.4 km (16/01/2008)	Low	Low
Macadamia integrifolia (Macadamia Nut)	EPBC Act = V	1	3.5 km (22/09/2009)	3.5 km (22/09/2009)	Low	Low
Melaleuca deanei (Deane's Paperbark)	BC Act = V EPBC Act = V	1	4.4 km (11/12/2007)	4.4 km (11/12/2007)	Low	Low
Persoonia hirsuta (Hairy Geebung)	BC Act = E1,3 EPBC Act = E	1	2.4 km (28/04/2016)	2.4 km (28/04/2016)	Low	Low
Pimelea curviflora var. *curviflora*	BC Act = V EPBC Act = V	9	2.1 km (09/04/2018)	2.1 km (09/04/2018)	Low	Low
Syzygium paniculatum (Magenta Lilly Pilly)	BC Act = E1 EPBC Act = V	7	2.9 km (18/07/2018)	2.9 km (18/07/2018)	Low	Low
Tetratheca glandulosa	BC Act = V	21	4.2 km (21/09/2021)	4.2 km (22/09/2021)	Low	Low

Appendix B Species lists

Flora

Family	*Scientific Name*	Common name	Native/Exotic
Apiaceae	*Centella asiatica*	Indian Pennywort	Native
Asteraceae	*Bidens pilosa*	Cobbler's Pegs	Exotic
	Taraxacum officinale	Dandelion	Exotic
Caryophyllaceae	*Stellaria media*	Common Chickweed	Exotic
Casuarinaceae	*Allocasuarina littoralis*	Black She-Oak	Native
Fabaceae (Faboideae)	*Trifolium repens*	White Clover	Exotic
Fabaceae (Mimosoideae)	*Acacia falcata*		Native
Lomandraceae	*Lomandra longifolia*	Spiny-headed Mat-rush	Native
Myrtaceae	*Callistemon* spp.		Native
	Corymbia citriodora	Lemon-scented Gum	Exotic
	Corymbia maculata	Spotted Gum	Native
	Eucalyptus moluccana	Grey Box	Native
	Eucalyptus robusta	Swamp Mahogany	Native
	Eucalyptus tereticornis	Forest Red Gum	Native
Oleaceae	*Fraxinus oxycarpa*	Raywood Ash	Exotic
Plantaginaceae	*Plantago lanceolata*	Lamb's Tongues	Exotic
Poaceae	*Cenchrus clandestinus*	Kikuyu Grass	Exotic
	Cynodon dactylon	Common Couch	Native
	Paspalum dilatatum	Paspalum	Exotic
Portulacaceae	*Portulaca oleracea*	Pigweed	Native
Proteaceae	*Banksia serrata*	Old-man Banksia	Native
	Grevillea spp.		Native
Solanaceae	*Solanum nigrum*	Black-berry Nightshade	Exotic

Fauna

Family	*Scientific name*	Common name	Native/Exotic
Artamidae	*Cracticus tibicen*	Australian Magpie	Native
Columbidae	*Columba livia*	Rock Dove	Exotic
Corvidae	*Corvus coronoides*	Australian Raven	Native
Meliphagidae	*Manorina melanocephala*	Noisy Miner	Native
Monarchidae	*Grallina cyanoleuca*	Magpie-lark	Native
Sturnidae	*Sturnus tristis*	Common Myna	Exotic
Threskiornithidae	*Threskiornis molucca*	Australian White Ibis	Native

Appendix C Significant Impact Criteria (EPBC Act)

Commonwealth listings under the EPBC Act

The EPBC Act Matters of National Significance Significant Impact Guidelines 1.1 (DotE 2013) provides 'Significant Impact Criteria' that are to be used to assist in determining whether a proposed action is likely to have a significant impact on a MNES and subsequently the need for a referral to Commonwealth. An MNES was identified within the study area in the form of foraging habitat for GHFF.

Grey-headed Flying-fox (Pteropus poliocephalus) – vulnerable species

The Grey-headed Flying-fox (GHFF) is endemic to Australia. It occurs along the east coast from Bundaberg in Queensland to Melbourne, Victoria. This species occurs in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps. Urban gardens, planted trees, and fruit crops can provide habitat for this species. The GHFF forages primarily on nectar and pollen of native trees, in particular Eucalyptus, Melaleuca, and Banksia. The availability of native fruits, nectar and pollen varies over time leading to the migration of GHFF throughout its range.

GHFF roosts are often selected upon their proximity to a regular food source (within 20 km), often in gullies, close to water, or in vegetation with a dense canopy. This species roosts communally in large, established camps which support several thousand individuals. The Grey-headed Flying-fox can travel up to 50 km from camp to forage (typically <20 km), where they feed on nectar and pollen from Eucalyptus, Banksia and Melaleuca spp., as well as the fruits of native and exotic species.

One hundred observations of the GHFF have been recorded in the locality in the past 20 years (NSW DCCEEW 2025d). The closest record is located 0.4 km from the study area in August 2018 and the most recent record was located approximately 4.4 km from the study area in November 2023. It is likely that the GHFF utilise the vegetation within the study area for foraging only; however, no GHFF camps were identified in the study area during the field assessment. The closest known GHFF camp is locates approximately 15.5 km southwest in Mt. Druitt (NSW DCCEEW 2025e).

Threats to this species include:

- Destruction of habitat by clearing for urban development and agriculture
- Disturbances at roosting sites, particularly during the last few weeks of pregnancy
- Unregulated shooting, and electrocution on powerlines

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

- *lead to a long-term decrease in the size of an important population of a species*

Nationally important camps are defined as those that contain ≥ 10,000 GHFF in more than one year in the last 10 years, or camps that have been occupied by more than 2,500 GHFF permanently or seasonally every year for the last 10 years. The proposal is unlikely to lead to a long-term decrease in the size of an important population of GHFF as the study area does

not contain a GHFF camp. It is possible that the GHFF may occasionally use the study area for foraging; however, the proposal is unlikely to lead to a decrease in the population of GHFF as breeding habitat for this species is not being directly impacted by the proposal and only 0.02 ha of planted native and exotic vegetation will be removed as part of the proposal. Furthermore, large areas of foraging habitat are found within the locality, including within Ironbark Ridge Reserve and Bruce Purser Reserve.

- *reduce the area of occupancy of an important population*

This species is distributed from Bundaberg in Queensland to Melbourne in Victoria, extending from the coast to the western slopes of NSW. The species is highly mobile and moves through the landscape in search of foraging resources. This proposal will not reduce the area of occupancy for an important population of GHFF as no breeding camps occur within or immediately surrounding the study area.

- *fragment an existing important population into two or more populations*

This proposal is unlikely to significantly increase fragmentation to important GHFF populations as the impacts of vegetation clearing and habitat fragmentation on GHFF are more prominent in areas directly surrounding roosting habitat. The closest GHFF camp is located approximately 15.5 km south west of the study area in Mt. Druitt (NSW DCCEEW 2025e). Furthermore, the GHFF are less susceptible to the impacts of fragmentation than other threatened species as they can travel large distances to forage and only 0.02 ha of planted native and exotic vegetation will be removed from the study area. As such, the proposed works are considered unlikely to fragment existing important populations of GHFF.

- *adversely affect habitat critical to the survival of a species*

The recovery plan for GHFF (DAWE 2021) states that habitat critical to the survival of the GHFF includes winter and spring vegetation communities that contain *Eucalyptus tereticornis*, *E. albens*, *E. crebra*, *E. fibrosa*, *E. melliodora*, *E. paniculata*, *E. pilularis*, *E. robusta*, *E. seeana*, *E. sideroxylon*, *E. siderophloia*, *Banksia integrifolia*, *Castanospermum australe*, *Corymbia citriodora*, *C. eximia*, *C. maculata*, *Grevillea robusta*, *Melaleuca quinquenervia* or *Syncarpia glomulifera*. These species can provide food resources during in winter and spring, during critical periods in the reproductive cycle of the GHFF (DCCEEW 2021).

Habitat critical to the survival of the GHFF may also be vegetation communities not containing the above tree species but which:

- contain native species that are known to be productive as foraging habitat during the final weeks of gestation, and during the weeks of birth, lactation and conception (August to May),
- contain native species used for foraging and occur within 20 km of a nationally important camp as identified on the Department's interactive flying-fox web viewer, or
- contain native and or exotic species used for roosting at the site of a nationally important GHFF camp, as identified on the Department's interactive flying-fox web viewer.

Several of the species listed above were found on the study area including *Eucalyptus tereticornis*, *Corymbia citriodora* and *C. maculata*. These food trees can provide critical habitat for GHFF, and therefore, the study area contains a small portion of critical habitat.

It is possible that the study area may be utilised during food bottleneck periods. The loss of critical habitat will be mitigated by selective planting of native canopy species consistent of GHFF feed trees and local PCTs. Given that a large amount of potential foraging habitat exists within the range of the closest GHFF camp, the partial loss of 0.02 ha of planted native and exotic vegetation within the study area does not represent a substantial risk to the survival of GHFF.

- *disrupt the breeding cycle of an important population*

The proposal is unlikely to disrupt the breeding cycle of an important population given that the study area does not contain a GHFF breeding camp, and this species can travel large distances to access suitable foraging habitat.

- *modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline*

The proposal would result in the partial removal of 0.02 ha of planted native and exotic vegetation, representing a potential small reduction in foraging habitat for GHFF. However, under the current proposal 0.43 ha of planted native and exotic vegetation would be retained within the study area. Given that a relatively small amount of foraging habitat is being removed, the proposal is unlikely to remove habitat to an extent that will cause a decline in GHFF population. Furthermore, a large amount of potential foraging habitat exists within the foraging range of the closest GHFF camp.

- *result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat*

The proposal will not result in invasive species that are harmful to the establishment of GHFF in the study area. Weed management procedures should be included in the CEMP to ensure plant and equipment do not introduce new weeds or spread weed propagules within the study area.

- *introduce disease that may cause the species to decline, or*

The proposal will not introduce disease that may cause the species to decline. In addition, no roosts are present within the study area and, therefore, the likelihood of the species contracting a disease in this area is low.

- *interfere substantially with the recovery of the species.*

The proposal is unlikely to substantially interfere with the recovery of the species as the study area does not contain a GHFF camp, the amount of potential foraging habitat to be impacted (0.02 ha of planted native and exotic vegetation) is small and GHFF can travel large distances to find more suitable foraging habitat.

Conclusion of EPBC Act Significant Impact Guidelines (DoE 2013) for Grey-headed Flying Fox

A referral is not recommended for the GHFF, as:

- no breeding or roosting habitat would be removed,
- minimal foraging habitat will be impacted,
- the proposal is unlikely to impact on the breeding cycle of any populations that may use the study area,
- the proposal would not affect habitat critical for the species' survival (e.g. further fragment bushland surrounding known GHFF camps), and
- large areas of suitable foraging habitat are found in the locality (i.e. Ironbark Ridge Reserve and Bruce Purser Reserve).

Appendix D Assessments of significance (BC Act)

The following factors listed under Part 7.3 of the BC Act must be considered when deciding whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats. The below assessments have been prepared in accordance with the appropriate guidelines (OEH 2018).

Grey-headed Flying-fox (Pteropus poliocephalus) – vulnerable species

Details regarding the ecology and local prevalence of this species are provided within the EPBC assessment above.

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

One hundred observations of the GHFF have been recorded in the locality in the past 20 years (NSW DCCEEW 2025d). The closest record is located 0.4 km from the study area in August 2018 and the most recent record was located approximately 4.4 km from the study area in November 2023. GHFF can travel large distances in search of nectar and pollen (up to 50 km), hence it is possible that this species utilises the vegetation within the study area for foraging. However, no GHFF camps were identified in the study area during the field assessment and so the likelihood of this species utilising the study area for roosting is minimal.

The closest known GHFF camp is locates approximately 15.5 km south west in Mt. Druitt (NSW DCCEEW 2025e). Similar planted native and exotic vegetation will remain within the study area and given the foraging range of the GHFF, the availability of native vegetation in the locality, and the small amount of vegetation removal required (0.02 ha), the proposal is unlikely to place a viable local population of this species at risk of extinction

b. *in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:*

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

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

This is not an endangered ecological community, so this is not applicable.

c. *in relation to the habitat of a threatened species, population or ecological community:*

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

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

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

The proposal would result in the removal of 0.02 ha of foraging habitat. The species could continue to use the vegetation immediately surrounding the study area as similar vegetation will not be impacted by the proposed development.

The proposed development is unlikely to result in the fragmentation or isolation of areas of habitat for the species. The removal of a small amount of planted native and exotic canopy species (0.02 ha) is required to accommodate development footprint. The ability for the GHFF to travel large distances makes them less susceptible to the impacts of such small-scale vegetation removal.

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

There are four areas under this declaration: Gould's Petrel critical habitat (Cabbage Tree Island and Boondelbah Island, off the coast of Port Stephens); Little penguin population in Sydney's North Harbour (Manly) critical habitat; Mitchell's Rainforest Snail in Stotts Island Nature Reserve (Tweed Valley); and Wollemi Pine critical habitat (Wollemi National Park). The proposed activity will not have an adverse effect (either directly or indirectly) on any declared area of outstanding biodiversity value.

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

There is one key threatening process of relevance to this species:

- Clearing of native vegetation

The proposal would result in the partial clearance of 0.02 ha of potential foraging habitat for the GHFF.

Conclusion of assessment of significance for the Grey-headed Flying-fox

The proposal will not have a significant impact on the GHFF, as:

- A small amount of native vegetation is proposed for thinning and modification (0.02 ha),
- No known roosting habitat will be impacted,
- The native vegetation to be removed is of relatively low importance, given the quantity of retained foraging habitat within the study area and across the locality, and
- The proposal would not affect the life cycle of this species such that a viable population will be placed at risk of extinction.

Powerful Owl (Ninox strenua) – vulnerable species

The Powerful Owl lives in forests and woodlands occurring in the coastal, escarpment, tablelands and western slopes environments of NSW. Powerful Owl occurs primarily in densely vegetated gullies of open and tall open forest, but they are also found in a wider range of habitats, including forests and woodlands within the metropolitan regions of cities. However, optimal habitat requires large tracts of forest or woodland habitat, including a tall shrub layer and abundant hollows supporting high densities of arboreal marsupial prey species. Powerful Owl nest in large hollows (greater than 45 cm wide and greater than 100 cm deep) in eucalypts in unlogged, unburnt gullies and lower slopes within 100 m of streams or minor drainage lines. Nest trees are typically emergent and are often the largest and oldest in a stand. Powerful Owls are faithful to traditional nesting hollows but can also use other hollows within the nesting gully. Pairs of birds occupy large home ranges (300-1,500 ha), using various portions of this area at different times, depending on the local abundance of arboreal mammals as a food source. Powerful Owls prey particularly on the Greater Glider and Ringtail Possum although the relative importance of prey items appears to vary regionally, with other prey such as Sugar Gliders, Brushtail Possums, Grey-headed Flying-foxes, insects and birds also used.

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

The Powerful Owl has been recorded 31 times within 5 km of the study area, with the most recent sighting to the study area recorded on October 2022 approximately 3.8 km from the study area and the closest record 0.5 km from the study area on February 2019 (NSW DCCEEW 2025d). The subject site may provide potential foraging habitat for the species, but the absence of HBTs means that site would not be used for breeding and some of the species prey items are not likely to reside in the study area. Powerful Owls are territorial species with very large foraging home ranges. The study area is relatively small and, therefore, the home range of a local pair of Powerful Owl would extend well beyond the study area.

There was no evidence of hollows, and there are no records of previous nesting onsite, it is therefore, unlikely the study area is of importance to the species for breeding.

Given the substantial areas of vegetation of better composition and condition surrounding the study area and the absence of breeding habitat, clearing the vegetation within the study area is considered unlikely to be of high importance to the survival of Powerful Owl. Therefore, the proposal is unlikely to have an adverse effect on the lifecycle of the Powerful Owl, to an extent that may place the local population at risk of extinction, given forested areas nearby could be considered more appropriate nesting and roosting sites.

b) *in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:*

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

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

Not applicable.

c) in relation to the habitat of a threatened species, population or ecological community:

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

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

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

The proposal would result in the removal of 0.02 ha of potential foraging habitat. The species could continue to use the vegetation surrounding the study area for foraging as the composition and condition of the surrounding vegetation is of better quality. No potential breeding habitat will be removed or indirectly impacted upon.

The removal of planted native and exotic canopy may reduce the area of habitat for arboreal mammals that are prey for large forest owls, but the removal of an area this size is not likely to significantly affect the populations of prey species. Further, the study area lacks HBTs, therefore, does not provide roosting habitat for some of the Powerful Owls prey, lastly, the study area is heavily disturbed thus, unlikely to support arboreal mammals.

The proposed development is unlikely to result in the fragmentation or isolation of other areas of habitat for the species. The removal of a small amount of planted native and exotic vegetation (0.02 ha) is required to accommodate the development footprint. Furthermore, the ability of the owl to travel large distances makes it less susceptible to the impacts of fragmentation. The current proposal is unlikely to further fragment or isolate adjoining areas of habitat.

The vegetation proposed for removal is likely to represent a negligible amount of potential foraging habitat that is available to the species within its local occurrence. Thus, the potential foraging habitat proposed for removal and modification in the study area is likely to be of low importance for the long-term survival of this species.

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

The proposed activity is unlikely to have an adverse effect (either directly or indirectly) on any declared area of outstanding biodiversity value.

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

There is one key threatening processes of relevance to this species:

- Clearing of native vegetation

The proposal would result in the removal of up to 0.02 ha of planted native and exotic canopy trees to accommodate for the development footprint.

Conclusion of test of significance for the Powerful Owl

The proposed development is unlikely to have a significant impact on the Powerful Owl, as:

- the amount of habitat to be impacted is very small, and there are no HBTs within the study area.
- areas of vegetation are present in the local area that provide more suitable nesting, breeding and foraging habitat, and
- the vegetation proposed for removal is likely to be of low importance, given the amount of native vegetation in the locality and the ability of the species to forage over large areas.