8 – 10 New Mclean Street

Biodiversity Assessment

FINAL REPORT

Prepared for Mount Street 4 Pty Ltd

25 November 2024

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- NSW Environment, Energy and Science Group for access to the BioNet Atlas of NSW Wildlife.
- NSW Department of Primary Industries Fisheries for access to the predicted distribution maps for threatened species and fish communities.

Biosis staff involved in this project were:

- Todd Horton (Reporting and fieldwork)
- Jen Townsend (mapping)

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Glossary

BC Act	*NSW Biodiversity Conservation Act 2016*
Biosecurity Act	*Biosecurity Act 2015*
BOS	Biodiversity Offsets Scheme
CBD	Central Business District
CEEC	Critically Endangered Ecological Community
DBH	Diameter at breast height
DCP	Development Control Plan
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPI	Department of Primary Industries
DPE	NSW Department of Planning and Environment
EEC	Endangered Ecological Community
EES	NSW Environment, Energy and Science Group
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
FM Act	*Fisheries Management Act 1994*
GIS	Geographic Information System
KTP	Key Threatening Process
LEP	Local Environmental Plan
LGA	Local Government Area
LLS	Local Land Services
Matters of NES	Matters of National Environmental Significance
NPW Act	*National Parks and Wildlife Act 1974*
NSW	New South Wales
PCT	Plant Community Type
PVP	Property Vegetation Plan
SEPP	NSW State Environmental Planning Policy
SIC	Significant Impact Criteria

SIS	Species Impact Statement
study area	Lot Boundary
subject site	The area of impact for the proposed works
TEC	Threatened Ecological Community
ToS	Test of Significance
VEC	Vulnerable Ecological Community
VMP	Vegetation Management Plan
VRZ	Vegetated Riparian Zone
WM Act	*Water Management Act 2000*

Summary

Biosis Pty Ltd was commissioned by Mount Street 4 Pty Ltd to undertake a biodiversity assessment of an area of land proposed for development works (subject site). The subject site is located in Edgecliff approximately 5 kilometres east of the Sydney central business district (CBD).

The subject site, defined by the extent of proposed works, is surrounded by the study area which includes adjacent areas likely to be directly or indirectly affected by the proposal at 8 – 10 New Mclean Street, Edgecliff (the study area). This assessment approach has been undertaken to allow for assessment of both the subject site as well as any additional areas in the broader study area which are likely to be affected by the proposal, either directly or indirectly. Identified constraints will be used to guide detailed design, with an emphasis on avoiding impacts where feasible.

Ecology values and impacts

Key ecological values within the study area include:

- 0.33 ha of NSW native vegetation not associated with a Plant Community Type (PCT).
- Two hollow-bearing trees, with one proposed for removal.
- One Magenta Lilly Pilly *Syzygium paniculatum* (Vulnerable, EPBC Act and Endangered, BC Act)
- Habitat for five threatened species, Little Lorikeet *Glossopsitta pusilla* (Vulnerable, BC Act), Eastern Coastal Free-tailed Bat *Micronomus norfolkensis* (Vulnerable, BC Act), Little Bent-winged Bat *Miniopterus australis* (Vulnerable, BC Act), Southern Myotis *Myotis macropus* (Vulnerable, BC Act) and Yellow-bellied Sheathtail-bat *Saccolaimus flaviventris (*Vulnerable, BC Act).

The proposed activities that will result in impacts to ecological values include:

- Removal of up to 0.22 ha native vegetation.
- Removal of 0.22 ha fauna habitat.
- Removal of one hollow-bearing tree.

Native trees will be retained where possible in accordance with the Tree Management Plan (FJCstudio 2023) (Appendix 3). Impacts to threatened species likely to occur, listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) have been considered through undertaking a Test of Significance (ToS) (refer to Appendix 1). One threatened species, *Syzygium paniculatum*, was recorded within the northern section of the study area, however it will not be directly impacted by the proposed development and protection measures will be implemented prior to the commencement of vegetation clearing.

The proposed works does not trigger the Biodiversity Offset Scheme (BOS) under the BC Act and consideration of the BOS is not warranted, and a Biodiversity Development Assessment Report (BDAR) is therefore not required.

1 Introduction

1.1 Project background

Biosis Pty Ltd was commissioned by Mount Street 4 Pty Ltd to undertake a biodiversity assessment of the subject site and broader study area (Figure 1), to inform a Development Application (DA) to Woollahra Council under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Works proposed for the subject site include the demolition of existing infrastructure, and removal of vegetation to aid the construction of a new residential development.

1.2 Scope of assessment

The objectives of this investigation are to:

- Describe the vascular flora (ferns, conifers, and flowering plants), vertebrate fauna (birds, mammals, reptiles, frogs).
- Map native vegetation and other habitat features.
- Review the implications of relevant biodiversity legislation and policy.
- Identify potential implications of the proposed development and provide recommendations to assist with development design.
- Recommend any further assessments of the site that may be required.

1.3 Location of the study area

The study area is located in the heart of Edgecliff, approximately 5 kilometres east of the Sydney CBD (Figure 1). It encompasses approximately 0.72 hectares of private land and the adjacent road reserves. It is currently zoned R3 = Medium density residential. The minimum lot size is for the study area is 0.02 hectares, therefore the clearing threshold under the BC Act is 0.25 hectares. The study area is not located within the Biodiversity Values Map (BV Map) (OEH 2019a).

The study area is within the:

- Sydney Basin Bioregion.
- Sydney Harbour Catchment Area.
- Greater Sydney Local Land Services (LLS) Management Area.
- Municipality of Woollahra or Local Government Area (LGA).

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Figure 1 Location of the study area

Matter: 37056
Date: 01 September 2022,
Drawn by: JET, Checked by: TH, Last edited by: jtownsend
Location:P:\37000s\37056\Mapping\37056_DataPrep

0 200 400 600 800 1,000
Metres

N

Scale 1:25,000 @ A4, GDA 1994 MGA Zone 56

2 Methods

2.1 Database and literature review

Prior to completing the field investigation, information provided by Mount Street 4 Pty Ltd as well as other key information was reviewed, including:

- Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool for matters protected by the EPBC Act.
- NSW Environment, Energy and Science (EES) BioNet Atlas of NSW Wildlife, for items listed under the BC Act.
- NSW DPI *Biosecurity Act 2015* for priority listed weeds for the Greater Sydney Local Land Services (LLS) area.
- *Vegetation of the Sydney Metropolitan Area* (DPE 2016).

The implications for the project were assessed in relation to key biodiversity legislation and policy including:

- *Environment Protection and Biodiversity Conservation Act 1999.*
- *Environmental Planning and Assessment Act 1979*.
- *Biodiversity Conservation Act 2016*.
- *Local Land Services Act 2013* (LLS Act).
- *Biosecurity Act 2015* (Biosecurity Act).
- *Woollahra Local Environmental Plan 2014.*
- *Woollahra Development Control Plan 2015.*

2.2 Field investigation

A field investigation of the study area was undertaken on 19 July 2022 by Todd Horton. Vegetation within the study area was surveyed using the random meander technique (Cropper 1993) over 4 person hours.

General classification of native vegetation in NSW used in this report is based on the classification system in Keith (2004) which uses three groupings of vegetation: vegetation formation, vegetation class and vegetation type, with vegetation type the finest grouping.

A habitat-based assessment was completed to determine the presence of suitable habitat for threatened species previously recorded (DPE 2022a) or predicted to occur (Commonwealth of Australia 2019) within 5 kilometres. This list was filtered according to species descriptions, life history, habitat preference and soil preference to determine those species most likely to be present within the study area.

2.2.1 Permits and licences

The flora and fauna assessment were conducted under the terms of Biosis' Scientific Licence issued by the Environment, Energy and Science Group under the *National Parks and Wildlife Act 1974* (SL100758, expiry date 31 May 2022). Fauna survey was conducted under approval CSB 17/892 from the NSW Animal Care and Ethics Committee (expiry date 31 January 2023).

3 Results

The study area is within the Edgecliff area approximately 5 kilometres east of the Sydney CDB. The study area contains a pair of high-density residential dwellings which will be deconstructed with a new development to be built.

Regional soil landscape mapping indicates that the study area occurs on the Hawkesbury landscape on the Sydney 1:1000 ,000 map sheet (Chapman et al. 1989). The Hawkesbury Soil landscape is categorised by medium to coarse-grained quartz sandstone with minor shale and laminite lenses. This landscape occurs on rolling to very steep hills with a local relief from 40 metres to 200 metres. Slope gradients range from 25 % to 70 %. Crests and ridges within this landscape are convex and narrow, at greater than 300 metres wide. Slopes are moderately inclined to precipitous.

No threatened biota was encountered during the site visit. Threatened mammals, microbats and birds may utilise the hollows and feed vegetation. This is discussed in further detail below.

Most exotic species within the study area are associated with built up suburban areas via introduction through human activity, mowing and vehicular movement. A few priority weeds are established on site, including African olive *Olea europaea* and Climbing Asparagus fern *Asparagus plumosus.*

3.1 Vegetation communities

The vegetation of the study area was found to comprise entirely of planted native vegetation and urban exotic vegetation, neither of which conform to a PCT, or Threatened Ecological Community listed under the BC Act or EPBC Act. The structure, floristic composition and condition of these vegetation types are described below. The vegetation mapping within the study area is shown in Figure 2.

Planted Native Vegetation

This community was present in a low condition throughout the study area and covers an area of approximately 0.33 hectares. The community consisted of predominantly planted native vegetation, endemic to NSW as defined by the BAM, within garden beds or as hedging throughout sections of the study area (Photo).

The canopy consisted of a variety of planted Gums including Brush Box *Lophostemon confertus*, Tallowood *Eucalyptus microcorys*, Swamp Mahogany *Eucalyptus robusta,* and Spotted Gum *Corymbia maculata*., Swamp Oak *Casuarina glauca*, Illawarra Flame Tree *Brachychiton acerifolius* and Broad-leaved Paper Bark *Melaleuca quinquenervia.*

The midstorey was dominated by planted hedging species including Lilly Pilly *Acmena smithii* and Tea Tree *Melaleuca alternifolia.* Other small shrubs and trees were present sporadically throughout the study area including Blueberry Ash *Elaeocarpus reticulatus*, Coastal Banksia *Banksia integrifolia* and Water Gum *Tristaniopsis laurina.*

The understorey was mostly devoid of native species with limited occurrences of Kidney Weed *Dichondra repens,* Spiny-headed Mat Rush *Lomandra longifolia*, Basket Grass *Oplismenus aemulus* and Bordered Panic Grass *Entolasia marginata.*

Photo 1 Planted Native Vegetation within the study area

Planted Exotic Vegetation

This community was present throughout the study area and covers an area of approximately 0.2 hectares. This community displayed high diversity of exotic species and occurs as heavily modified garden areas and turfed lawn (Photo).

The canopy consisted of a variety of exotic trees including Giant Bird of Paradise *Strelitzia Nicolai*, Willow Myrtle *Agonis flexuosa*, Hackberry *Celtis* sp. and Black Locust *Robinia pseudoacacia.*

The midstorey was dominated by hedging plants including *Murraya paniculata* and *Camellia sasanqua*. The understorey contained species such as Kahili Ginger *Hedychium gardnerianum*, *Iris* sp., Agapanthus *Agapanthus africanus*, *Tradescantia* sp. and Kikuyu Grass *Cenchrus clandestinus.*

Photo 2 Planted Exotic Vegetation within the study area

3.2 Threatened species

Background searches identified 33 threatened flora species and 102 threatened fauna species recorded (DPE 2022a) or predicted to occur (Commonwealth of Australia 2019) within 5 kilometres of the study area. Those species considered most likely to have habitat within the study area based on the background research are as follows:

Flora

- Sunshine Wattle *Acacia terminalis* subsp. *Eastern Sydney (*Endangered, BC Act).
- Nielson Park She-oak *Allocasuarina portuensis* (Endangered, EPBC Act and BC Act).
- Magenta Lilly Pilly *Syzygium paniculatum* (Vulnerable, EPBC Act and Endangered BC Act).

Fauna

- Glossy Black-Cockatoo *Calyptorhynchus lathami* (Vulnerable, BC Act).
- Grey-headed Flying-fox *Pteropus poliocephalus* (Vulnerable, EPBC Act and BC Act).
- Little Lorikeet *Glossopsitta pusilla* (Vulnerable, BC Act).
- Eastern Coastal Free-tailed Bat *Micronomus norfolkensis* (Vulnerable, BC Act).
- Southern Myotis *Myotis macropus* (Vulnerable, BC Act).
- Little Bent-winged Bat *Miniopterus australis* (Vulnerable, BC Act).
- Yellow-bellied Sheathtail-bat *Saccolaimus flaviventris* (Vulnerable, BC Act).

An assessment of the habitat values of the study area is provided in Table 1 for threatened flora species and Table 2 for threatened fauna species, and discusses areas of value and potential impacts for all species with a medium or greater likelihood of occurrence, and determines the need for a Tests of Significance (ToS) for species listed under the BC Act, or Significant Impact Criteria (SIC) Assessment for species listed under the EPBC Act.

Table 1 Assessment of habitat for threatened flora species

Species	Local distribution and habitat requirements	Likelihood of occurrence or impact
Acacia terminalis* subsp. *Eastern Sydney	Has been recorded within Trumper park approximately 20 m from the study area. This species is typically found in Coastal scrub and dry sclerophyll woodland on sandy soils in a limited distribution between Botany Bay and Sydney Harbour.	Habitat features which form a requirement for this species are present within the study area, however the subsequent field survey did not detect the species.
Allocasuarina portuensis	Has been recorded at Neilson Park approximately 3.8 km north-east of the study area. Original habitat was tall-closed woodland but is now restricted to a very small distribution within Vaucluse on the South-Head peninsula.	The habitat requirements of this species are present in the study area, however subsequent field survey did not record this species.
Syzygium paniculatum	Has been recorded within Trumper park approximately 10 m from the study area. This species is typically found along the coast of NSW within riverside gallery rainforests and remnant littoral rainforest communities.	One planted individual was detected on site and will be retained in accordance with the tree management plan (FJCstudio 2023).

Table 2 Assessment of habitat for threatened fauna species

Habitat feature	Threatened fauna association	Likelihood of occurrence or impact
Feed trees	Eucalypts and other flowering perennial species recorded in the study area may provide nectar resources suitable for a range of arboreal and flying fauna (such as gliders, Grey-headed Flying-fox and nectivorous bird species) whilst in flower. The Swamp Oak trees within the study area provide foraging resources for the Glossy Black Cockatoo	Based on the transient nature of Grey-headed Flying Fox and Glossy Black Cockatoo in context of the surrounding resources and connectivity within the landscape there is not likely to be an impact to these species.
Hollow-bearing trees (HBTs)	Two potential HBTs were recorded in the study area (Appendix 2). One extra-large hollow was present within a *Ficus macrophylla* tree limb, housing a Common Brushtail Possum (Photo 3). The other HBT contained multiple small sized hollows with diameters of approximately 10 - 15 cm (Photo 4). These hollows may provide potential roosting and/or nesting habitat for Little Lorikeet and microbats including the threatened microbats, Eastern Coastal Free-tailed Bat, Little Bent-winged Bat, Southern Myotis and Yellow-bellied Sheathtail-bat but is unlikely to provide roosting habitat for Glossy Black Cockatoo due to the small size of the hollow (approximately 15 cm).	It is recommended that, if possible, the hollow-bearing trees be retained as an important habitat feature in the landscape that may be used by threatened Microbats and Little Lorikeets as well as providing feeding and perching habitat for other generic avifauna.
Man-made structures	Man-made structures may provide habitat for threatened bat species.	Man-made structures on site were not considered to provide optimal habitat for fauna species.

Based on the size of the study area, the survey effort is considered comprehensive to assess habitat presence for threatened flora species and fauna species outlined in Table 1 and Table 2. Taking all of these factors into consideration, there is a low likelihood of impact for the above listed nomadic species.

3.2.1 Priority weeds

Two priority weeds for the Greater Sydney LLS Region, which includes the Woollahra LGA, have been recorded in the study area, and are listed in Table 3, along with their associated Biosecurity Duty in accordance with the Biosecurity Act.

The Biosecurity Act provides for the identification, classification, and control of priority weeds with the purpose of determining if a biosecurity risk is likely to occur. A priority weed is any weed identified in a local strategic plan, for a region that includes that land or area, as a weed that is or should be prevented, managed, controlled or eradicated in the region.

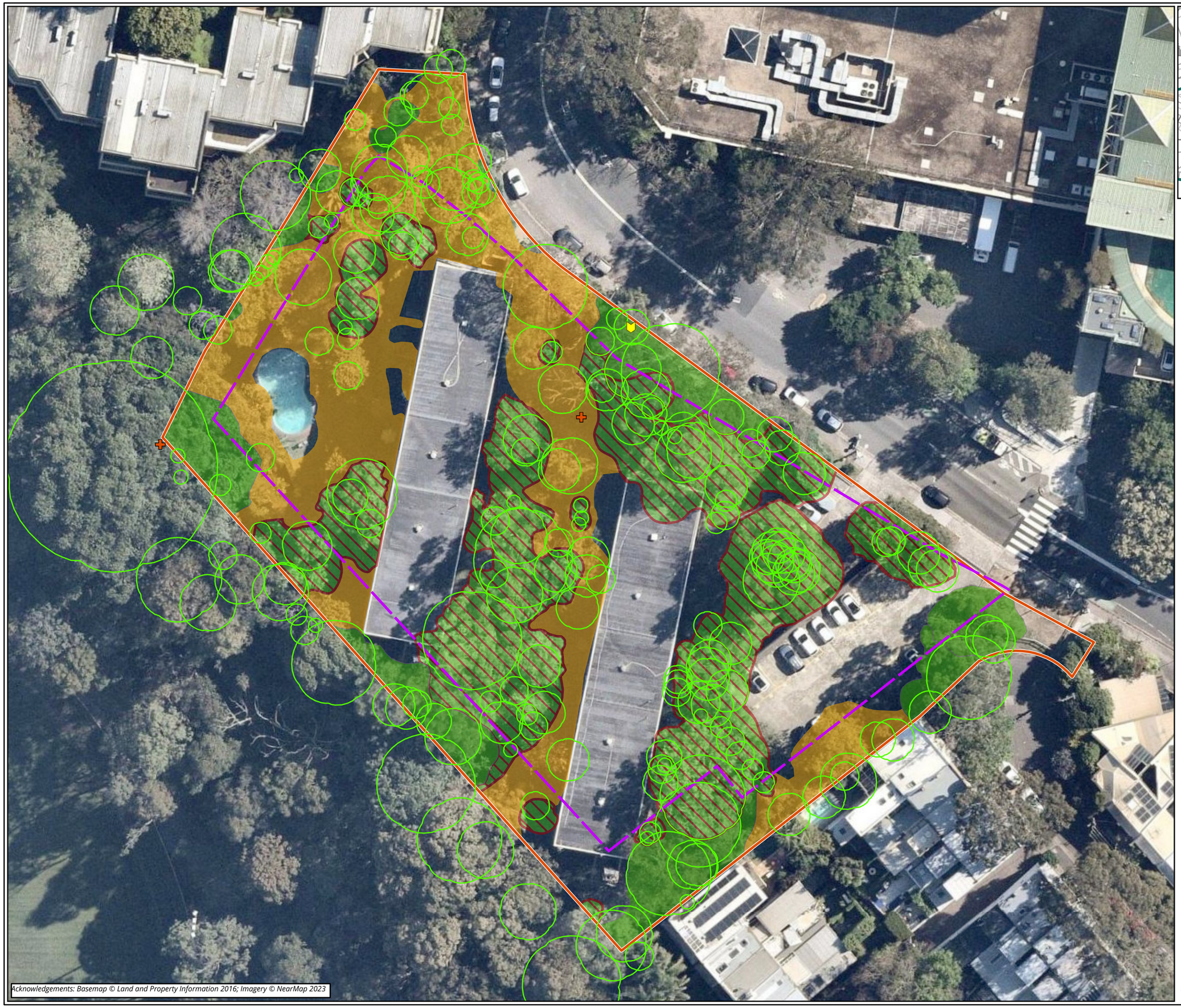
The General Biosecurity Duty as outlined in the Biosecurity Act states:

All plants are regulated with a general biosecurity duty to prevent, eliminate, or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated, or minimised, so far as is reasonably practicable.

Table 3 Priority weeds within the study area

Scientific name	Common name	Relevant biosecurity duty
Asparagus plumosus	Climbing Asparagus Fern	General Biosecurity
Olea europaea subsp. *cuspidata*	African Olive	General Biosecurity

To prevent biosecurity impacts from occurring as a result of the presence of the above listed priority weeds within the study area, all practical steps should be taken to control and eradicated the weeds from the study area as per the relevant biosecurity duties outlined above, or prior to or during any future vegetation removal.



Legend

- Study area
- Lot
- Proposed footprint
- Hollow-bearing tree
- Magenta Lilly Pilly - *Syzygium paniculatum*
- Existing trees

Plant community type

- Planted native - retained
- Planted native - removed
- Planted exotic vegetation

Figure 2 Ecological features of the study area

0 5 10 15 20

Metres

Scale: 1:500 @ A3

Coordinate System: GDA2020 MGA Zone 56

N

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Matter: 37056, Date: 13 November 2023,
Drawn by: JET, Checked by: TH, Last edited by: owilliams
Layout: F2_EcoFeatures
Project: P:\37000s\37056\Mapping\
37056_DataPrep.aprx

Acknowledgements: Basemap © Land and Property Information 2016; Imagery © NearMap 2023

4 Ecological impacts and recommendations

The proposed development works involve the following impacts to ecological features:

- Up to 0.22 ha planted native vegetation clearance. Native trees will be retained where possible in accordance with the Tree Management Plan (FJCstudio 2023) (Appendix 3).
- Removal of one hollow-bearing tree.

4.1 Environmental Planning and Assessment Act 1979

An assessment of the project against the relevant sections of the EP&A Act is provided below.

4.2 Biodiversity Conservation Act 2016

Test of Significance

No TECs and five threatened species listed under the BC Act have a medium or greater likelihood of occurring within the study area. ToS have been prepared for threatened entities that are deemed likely to be subject to negative impacts (Appendix 1) and concluded that a significant impact was not likely to result from the project. One additional threatened species was discovered within the study area, however, as this species is considered planted, and outside its natural habitat a ToS assessment has not been completed. A significant impact was determined unlikely due to the limited clearing of vegetation and retainment of habitat adjacent to areas being cleared.

Biodiversity Offsets Scheme

The proposed works does not trigger the Biodiversity Offset Scheme (BOS) under the BC Act as described in Table 4 below, and consideration of the BOS is not warranted, and a BDAR is not required.

Table 4 Biodiversity Offset Scheme assessment

BOS Trigger	Yes/No	Justification
Clearing threshold	No	The total clearing of NSW native vegetation (0.22 ha) does not exceed the minimum clearing threshold of 0.25 ha, based on a minimum lot size of 0.02 ha.
BV Map	No	The project will/will not impact on areas mapped within the BV Map.
Significant impact	No	The project is unlikely to result in a significant impact on threatened species, populations or communities listed under the BC Act.

4.3 Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

The EPBC Act is the Australian Government's key piece of environmental legislation. The EPBC Act applies to developments and associated activities that have the potential to significantly impact on Matters of National Environmental Significance (NES) protected under the Act. Under the EPBC Act, activities that have potential to

result in significant impacts on Matters of NES must be referred to the commonwealth minister for the Environment and Energy for assessment.

No TECs, and one threatened species, listed under the EPBC Act was recorded or assessed to have a medium or greater potential to occur within the study area, however, as this species is considered planted, and outside its natural habitat a SIC assessment has not been completed.

On the basis of criteria outlined in Commonwealth of Australia (2013) it is considered unlikely that a significant impact on a Matter of NES would result from the project.

4.4 Development Control Plans/Local Environmental Plans

The study area occurs within the Woollahra LGA. As such the below LEP and DCP are relevant to this project:

- *Woollahra Local Environment Plan 2014.*
- *Woollahra Development Control Plan 2015.*

The study area is within land zoned R3 – Medium density residential.

Clause 5.9 of the Woollahra LEP, Preservation of trees or vegetation, seeks to preserve the amenity of the area through the preservation of trees and other vegetation.

Chapter E3 - Tree Management of the Development Control Plan 2015 applies to all developments within the Woollahra LGA. Chapter E.3.3.1 of the policy states that:

The following matters will be considered when assessing development applications and permit applications:

1. The species, health, structural condition, age, growing environment and landscape significance.
2. Where view pruning is proposed, the view pruning guidelines in the Woollahra Tree Management Policy 2011 will apply.
3. Where pruning for solar access is proposed, this will be considered making allowances for the tree's health, growth habit, structural stability and growing environment.
4. Where tree removal is proposed, the following matters will also be considered:
   a) the surrounding canopy cover;
   b) amenity issues; and
   c) the opportunity for replacement planting.

   d) The development is considered consistent with the Woollahra DCP and LEP in relation to biodiversity.

Tree retention has been considered during the design phase of the project, and an arborist report (Urban Arbor 2023) and Tree Management Plan (FJCstudio 2023) (Appendix 3), has been prepared in consideration of tree retention and replacement planting to accompany the DA.

5 Conclusion and recommendations

5.1 Conclusion

This report is an assessment of the potential impact of vegetation clearing on ecological values within the designated study area in accordance with the EP&A Act, BC Act and the EPBC Act.

The proposed activities that will result in impacts to ecological values include:

- Removal of up to 0.22 ha native vegetation.
- Removal of 0.22 ha fauna habitat.
- Removal of one hollow-bearing tree.

A total of approximately 0.33 hectares of planted native vegetation was identified within the study area, of which up to 0.22 hectares would be removed by the proposed works. There is also potential for additional vegetation to be retained at the northern end of the property along road verge. Native trees will be retained where possible in accordance with the Tree Management Plan (FJCstudio 2023) (Appendix 3). For the reasons outlined in the ToS, the proposed works, as currently designed, are deemed to not have a significant impact on the threatened species. Were the proposal to go ahead a number of safeguards to avoid, minimise and mitigate the above impacts have been included in Section 5 of this report including detailed design recommendations, exclusion fencing and recommendations regarding appropriate hygiene protocols for vegetation clearing and plant (see 5.2 below).

Following field investigations, five species listed under the BC Act were also considered to have a moderate likelihood of occurrence in the study area: Little Lorikeet *Glossopsitta pusilla*, Eastern Coastal Free-tailed Bat *Micronomus norfolkensis*, Little Bent-winged Bat *Miniopterus australis*, Southern Myotis *Myotis macropus*, and Yellow-bellied Sheathtail-bat *Saccolaimus flaviventris*. ToS were carried out for fauna species to which the proposal was considered likely to impact on limiting foraging resources. These assessments concluded the proposal is unlikely to have a significant impact on any BC or EPBC Act listed fauna species. Safeguards specific to the removal of threatened and general fauna species habitat have been provided below, including supervision of habitat clearance and information on ecological values to be included in site inductions and pre-start meetings.

5.2 Recommendations

Given there are requirements for removal of some native vegetation including canopy trees for the project, the focus of the recommendations is to minimise disturbance to any surrounding native vegetation and fauna habitat. These recommendations are:

To the fullest extent practicable, minimise disturbance to any native vegetation surrounding the study area.

- Where possible, any trees to be retained should be protected in accordance with Australian Standard AS4970 – 2009 Protection of trees on development sites, during construction, operation and decommissioning of the site compound.
- In the unlikely event that unexpected threatened species are identified during the project, works should cease, and an ecologist contacted.
- Soil transportation should be minimised within, into or out of the study area to reduce the spread of weeds.

- Two priority weeds within the Woollahra Council LGA were identified within the study area (Table 3). Appropriate measures should be implemented to minimise the spread of these species.
- Appropriate erosion and sediment control measures should be installed at all sites to avoid sedimentation of receiving water bodies or other indirect impacts to surrounding biodiversity values.
- Information on ecological values to be included in site inductions and pre-start meetings.
- Removal or damage to vegetation within the adjacent Trumper Park must be avoided.
- Attention should be demonstrated to avoid damage to the threatened Sunshine Wattle *Acacia terminalis* subsp. *Eastern Sydney* and Magenta Lilly Pilly *Syzygium paniculatum* found in Trumper Park.
- Appropriate measures should be implemented to ensure protection of the individual Magenta Lilly Pilly *Syzygium paniculatum* present on site including:
  - Establish No Go Zones around threatened species with the use of exclusion fencing and appropriate signage.
  - Establishment of an appropriate TPZs in accordance with the Tree Retention Plan
  - Ensure any modification to the project during further concept planning or during construction that has some potential to impact on the residing vegetation is assessed. This may include tests of significance according to Section 1.7 of the EP&A Act.
- Hollow-bearing trees are to be removed in a two-stage process:
  - Stage 1: All surrounding vegetation to be cleared and grubbed.
  - Stage 2: 24 to 48 hours later the hollow-bearing trees to be inspected by an ecologist. If resident fauna is observed, the hollow section is to be lowered to the ground and the animal allowed to move on of its own volition. If injured, the fauna to be taken to a WIRES carer or appropriate veterinarian for care.
- Any hollow-bearing trees that cannot be retained during the construction process should be reincorporated (where possible) into the surrounding landscape to provide additional habitat features.

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Appendices

Appendix 1 Tests of Significance

The following section provides for Tests of Significance as outlined in Section 7.3 of the BC Act for all species listed as a medium likelihood or greater.

Hollow-dependent Bat Species - Eastern Coastal Free-tailed Bat, Little Bent-winged Bat, Southern Myotis Yellow-bellied Sheathtail-bat and Eastern Coastal Free-tailed Bat

Eastern Coastal Free-tailed Bat

The Eastern Coastal Free-tailed Bat *Micronomus norfolkensis* is listed as Vulnerable under the BC Act. It occurs along the coastal regions of eastern Australia. In NSW, its range expands west out over the Great Diving Range. The habitat preference of the species is poorly known, however, it has been observed to occur in dry eucalypt forest, coastal woodland, riparian zones and wet sclerophyll forests. The Eastern Coastal Free-tailed Bat forages for moths above forest canopy and along forest edges, and also consumes ground-based invertebrates (e.g. ants and beetles). Hollow-bearing trees are their preferred roosting sites (DPE 2022b).

Little Bent-winged Bat

The Little Bent-winged Bat *Miniopterus australis* occurs on the east coast of Australia, ranging from Cape York in Queensland to Wollongong in NSW (DPE 2022c). It is a cave dwelling bat, however it is also known to roost in caves, abandoned mines, tunnels, stormwater drains, tree hollows and occasionally buildings. It is insectivorous, feeding primarily on beetles, moths and flies, but is also known to frequently consume spiders.

Southern Myotis

The Southern Myotis *Myotis macropus* is listed as Vulnerable under the BC Act. It is found along the coastal band from the north-west of Australia, across to the top end and south to western Victoria. This species forages over streams and pools along waterways and farm dams, catching insects and small fish by raking their feet across the water surface. Southern Myotis roost in tree hollows, caves, culverts and under bridges, in groups of 10 – 15 individuals, often close to water. Potential threats to the Southern Myotis include, clearing adjacent to foraging areas, reduction in stream water quality, affecting food resources and the loss or disturbance of roosting sites (DPE 2022d).

Yellow-bellied Sheathtail-bat

Yellow-bellied Sheathtail-bat is a large insectivorous bat with a flattened head and pointed muzzle with a white to yellow belly and is wide-ranging occurring from northern and eastern Australia, occasionally visiting south-western NSW and Victoria in late summer and autumn. Yellow-bellied Sheathtail-bat roosts singly or in groups of up to six in tree hollows and buildings, and occasionally mammal burrows in treeless areas (DPE 2023).

Test of Significance for Hollow-dependent Microchiropteran bats

Test of Significance for Cumberland Plain Woodland
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
Impacts likely to have an adverse effect on the life cycle of the Eastern Coastal Free-tailed Bat, Little Bent-winged Bat, Southern Myotis and Yellow-bellied Sheathtail-bat include direct mortality, loss of high productivity foraging habitat, loss of roosting habitat and introduction of exotic pathogens. Impacts associated with the proposed works include the removal of 0.22 ha of potential foraging habitat and the removal of one hollow-bearing tree which may provide some roosting habitat for microbats within the study area. The vegetation in the subject land occurs at the edge of a larger, approximately 3 hectare patch of similar vegetation associated with Trumper Oval and Trumper Park to the south of the study area. The hollow-bearing tree contains up to two small spout hollows which may be utilised by threatened microbats occurring in the locality. However, the hollows occur at close proximity to New Mclean Street (the road), a large shopping centre and high density residential housing. The study area is in a highly urbanised suburb of Sydney and vegetation in the study area is heavily impacted by edge effects and disturbances such as light and noise pollution. In addition, roadways have been observed to increase collision risks and create a barrier to movement between hollows and foraging resources (McGregor et al. 2017) and it is likely that the small area of habitat provided by this vegetation patch is poorly connected to other larger patches. Given the location of the study area in the landscape and the extent of the impacts associated with the hollows it is unlikely that they would represent a significant habitat resource for Microbats within the broader locality. Vegetation to be removed from the study area represents marginal foraging habitat for the Eastern Coastal Free-tailed Bat, Little Bent-winged Bat, Southern Myotis and Yellow-bellied Sheathtail-bat. This is due to the highly fragmented nature of the vegetation, light pollution, noise pollution, collision risk and the barrier to movement imposed by the road. Given these factors, it is considered unlikely that the removal of 0.2 ha of native vegetation from the study area would impact the availability of resources in the locality, such that a viable population would be placed at risk of extinction. In addition, recommendations outlined in the ecological report include undertaking preclearance surveys and undertaking translocation of any microbat species found within the study area immediately prior to the commencement of works. This will further ensure minimal impact to this species as a result of the proposed works.
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.
In relation to the habitat of a threatened species or ecological community: ***(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and*** ***(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and*** ***(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.***

Test of Significance for Cumberland Plain Woodland

The proposed works will result in the removal of up to 0.22 hectares of native vegetation, including the removal of up to one hollow-bearing trees that represents some potential roosting habitat for the Southern Myotis, Eastern Coastal Free-tailed Bat and the Greater Broad-nosed Bat.

The vegetation to be removed is located within a heavily urbanised and developed area and as such, is highly impacted by past clearing and horticultural changes. Habitat along the edges and rear of the property will be retained and continue to provide potential foraging habitat. Given the location of the study area in the wider landscape, removal of this low quality vegetation it is unlikely to result in further fragmentation of habitat for the species, particularly given the highly mobile nature of bats, capable of foraging over large distances.

The area of potential habitat proposed for removal represents a small proportion (0.22 ha) of the available habitat for the species within 5 kilometres of the study area. The study area is located adjacent to a larger area of bushland that will remain undeveloped under the current proposal, which includes native vegetation with an intact understorey that may provides higher quality potential habitat than the area to be impacted by the proposed works. Hollow-bearing trees may provide important roosting resources for these species. The hollow-bearing trees to be removed currently occurs along existing infrastructure and as such are likely to be influenced by edge effects and disturbance from the surrounding urban landscape. As such, the hollows are of lower quality than other potentially suitable hollow-bearing trees located further from the edges of these disturbances. Hollow-bearing trees within the study area likely represent a very small fraction of the available habitat for this species. Therefore, the importance of the habitat to be removed is not considered significant for the long-term survival of the species within the locality.

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 works will not impact on an area declared as of outstanding biodiversity value (either directly or indirectly).

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

The proposed works have the potential to result in the following key threatening processes which are listed under the Schedule 4 of the BC Act and which are considered relevant to the Southern Myotis, Eastern Coastal Free-tailed Bat and Greater Broad-nosed Bat:

- Clearing of native vegetation
- Loss of hollow-bearing trees

Approximately 0.22 hectares of native vegetation, including one hollow-bearing tree, which may provide marginal foraging and roosting habitat for microbat species, will be impacted by the proposed works. Vegetation including the hollow-bearing tree to be removed from the study area are highly impacted by the location within the landscape, being within the heavily developed urban area of Edgecliff. As such, the vegetation is unlikely to represent significant habitat for these species.

Although the proposed works will contribute to the key threatening processes of clearing of native vegetation and loss of a hollow-bearing tree, it is unlikely that the removal of these resources, in the context of the position of the study area in the landscape and resources available in the wider locality, would contribute significantly to the impacts of either key threatening processes.

Conclusion

In consideration of the above five factors, the proposed activity is not likely to significantly impact the three microbat species within the study area or wider locality, as:

Test of Significance for Cumberland Plain Woodland

- The proposed works will remove approximately 0.22 hectares of low-quality native vegetation that provides marginal foraging habitat for the microbat species.
- Works are limited to removal of 0.22 ha of vegetation including one hollow-bearing tree adjacent to existing infrastructure and disturbed areas. These trees have a low likelihood of importance for the assessed species due to their positioning in the landscape.
- The localised nature of the proposed works will not significantly trigger or exacerbate any key threatening processes.
- The habitat to be removed is not considered important to the survival of the species.
- Preclearance surveys for the microbat species will be undertaken prior to removal of vegetation to ensure any individuals are translocated and not impacted by the proposed works.
- Where possible, impacts to hollow-bearing trees should be avoided.

Therefore, no further assessment is required and a SIS or BDAR is not required.

Little Lorikeet Glossopsitta pusilla - Vulnerable species BC Act

Little Lorikeet is listed as vulnerable under the BC Act. Little Lorikeet is distributed in forests and woodlands from the east coast to the western slopes of the Great Dividing Range in NSW, extending from Queensland to Victoria. The Little Lorikeet mostly occurs in dry, open eucalypt forests and woodlands, feeding primarily on nectar and pollen in the tree canopy. Nest hollows are located at heights of between 2 metres and 15 metres, mostly in living, smooth-barked eucalypts. Most breeding records for the species come from the western slopes.

Little Lorikeet within the study area

Previous records of the Little Lorikeet exist in the surrounding localities (8 records within 5 kilometres of the study area), with the most recent records collected in 2018 and the closest records located within 1.5 kilometres of the study area.

The proposed works will result in the removal of up to 0.22 hectares of potential habitat and one hollow-bearing tree providing potential nesting resources for the species. An assessment of whether the proposed project is likely to lead to a significant impact to habitat for Little Lorikeet is provided below.

Test of Significance for Little Lorikeet

Test of Significance for Little Lorikeet

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 proposed works will involve removal of up to 0.22 ha of native vegetation providing potential habitat for the Little Lorikeet within the study area. The habitat within the study area includes foraging resources such as flowering eucalyptus species and an estimated 2 small (<50 mm) hollows providing potential breeding resources.
The study area is within a highly urbanised suburb of Sydney and habitat within the study area is highly disturbed due to historic clearing for high density residential housing and infrastructure. Potential habitat exists primarily as planted native vegetation. Although the study area may provide some nectar foraging resources for threatened species on occasion in the form of Eucalyptus sideroxylon, Eucalyptus microcorys, Eucalyptus robusta and Melaleuca quinquenervia, it is unlikely given the highly urban environment that the planted native vegetation within the study area is providing high quality resources upon which these species rely for successful breeding and persistence within the locality. Suitable habitat occurring along the sides of the property and on adjacent land associated with the Oval and Park to the south will remain, providing foraging habitat in the area. Breeding habitat within the study area is considered to be of low quality due to disturbance from the adjacent roads and infrastructure including noise and vibration and relatively exposed position of

Test of Significance for Little Lorikeet
hollow-bearing trees. Removal of a small proportion (total 0.22 hectares) of vegetation providing potential habitat in the context of the habitat available in the wider locality is not expected to significantly reduce the resources for this species such that it would impact the life cycle of the species, or a local population to the extent that they would be likely to be placed at risk of extinction.
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, not an ecological community.
In relation to the habitat of a threatened species or ecological community: ***(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and*** ***(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and*** ***(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.***
The project will remove approximately 0.22 hectares of potential foraging habitat and one hollow-bearing tree providing potential low quality breeding habitat for Little Lorikeets throughout the study area. The Little Lorikeet is a highly mobile species of bird and is widespread throughout the east coast and western slopes of NSW. The development will remove a small area of potential habitat in multiple locations throughout the study area. As such, the species distribution is considered continuous throughout the species range and the species is considered to be a single continuous population. The development will not increase fragmentation or isolation of any areas of habitat for this highly mobile species and is not likely to result in any local population becoming genetically isolated. The habitat within the study area is considered to be of low quality for breeding due to the location within the broader landscape, being within a highly urbanised suburb of Sydney, the exposed position of hollows and the existing indirect impacts (noise and vibration) from the adjacent roads and high levels of human activity. Removal of a small proportion area of this habitat (0.22 hectares and one hollow bearing tree) is not expected to impact the resources available to the population such that it will impact the long-term survival of the species in the locality.
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).
To date no declared areas of outstanding biodiversity value within the study area.
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.
Key threatening processes relevant to the Little Lorikeet identified on the Schedule 4 of the BC Act that may be exacerbated by the proposed slope works include:

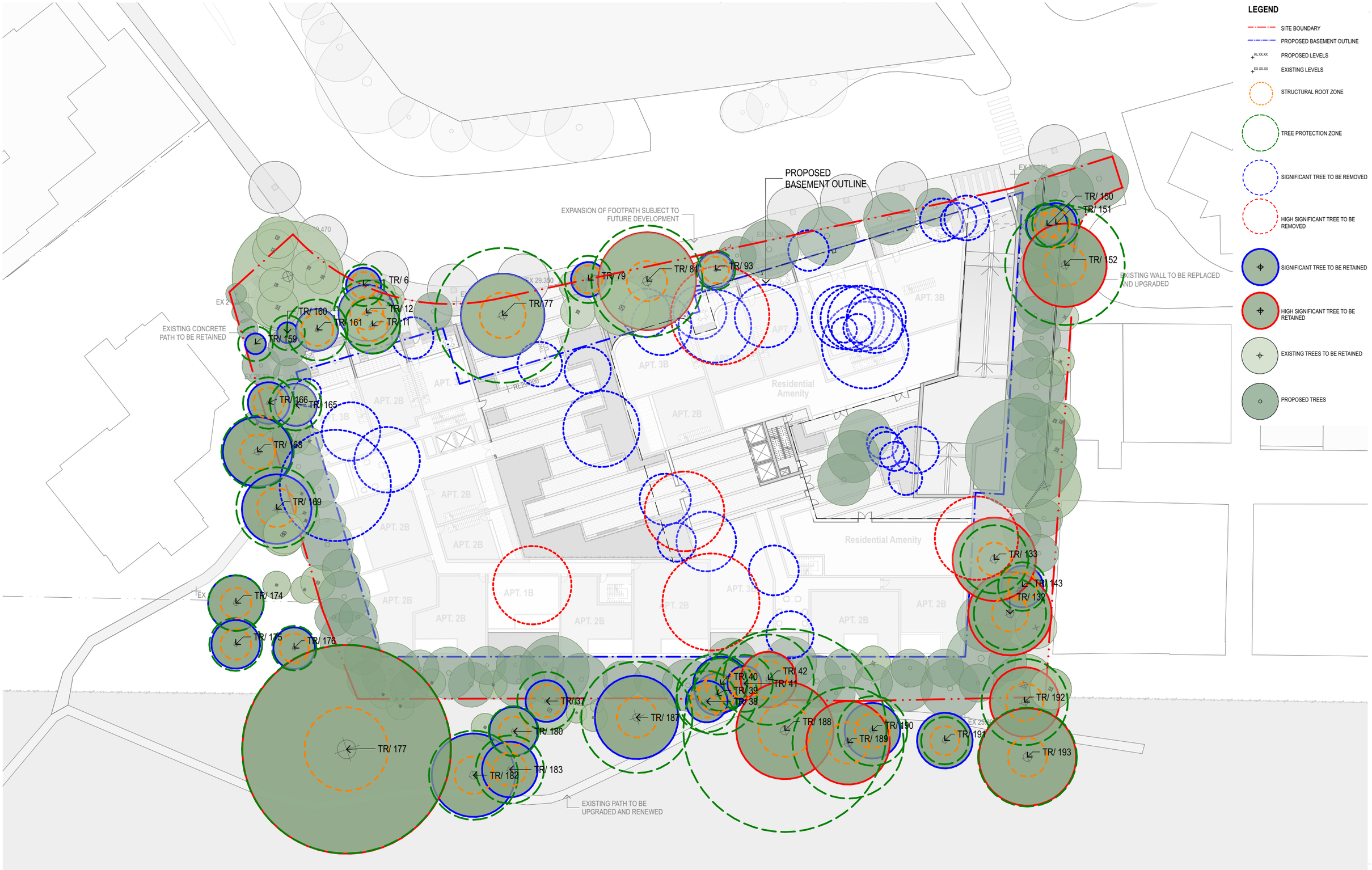
Test of Significance for Little Lorikeet
• Clearing of native vegetation. • Loss of Hollow bearing trees. The removal of one hollow-bearing tree providing potential low quality roosting habitat will contribute to these KTPs but is unlikely to significantly impact Little Lorikeets within the locality. The project will result in clearing of native vegetation and therefore would form part of a key threatening process. The small proportional scale of vegetation removal (0.22 hectares) providing low quality foraging habitat for the species, in the context of the larger patches retained along riparian corridors and in the wider locality is considered unlikely to significantly increase the impact of this key threatening process such that it would lead to the decline of the species.
Conclusion.
The proposed works is not considered likely to cause a significant impact to the Glossy Black-Cockatoo given the following factors: • Habitat within the study area includes a small area of foraging habitat and low-quality potential breeding habitat, removal of vegetation is not considered likely to cause an adverse impact on the life cycle of the species such that the local population (or species as a whole) is likely to be placed at risk of extinction. • Clearing will be undertaken on a localised and relatively small scale, a total area of 0.22 hectares foraging habitat will be removed. • The vegetation to be removed will not fragment or isolate remaining areas of habitat for the local population of Little Lorikeet. • Habitat to be impacted comprises of low quality habitat containing one hollow potentially suitable for nesting and a small area of foraging habitat and is not considered to be important to the survival of the local population or the species as a whole. • The proposed works will contribute on a small scale to the Key Threatening process of clearing of native vegetation. Therefore, no further assessment is required and a SIS or BDAR is not required.

Appendix 2 Photos

Photo 3 Hollow bearing tree at the rear of study site. Hollow shown in red.

Photo 4 Hollow bearing tree being removed. Hollows shown in red circles.

Appendix 3 Tree Management Plan



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21/11/2024

801 — Tree Manangement Plan
<Landmark> — 8-10 New McLean Street, Edgecliff

Scale
1:500 @ A3

0 5 10 20m

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