Flora and Fauna Assessment Report

54 Bardo Road, Newport NSW 2106

Report prepared by Narla Environmental for BPG Holdings (No 5) Pty Ltd

October 2020

NARLA
environmental

Report:	Flora and Fauna Assessment Report – 54 Bardo Road, Newport NSW
Prepared for:	BPG Holdings (No 5) Pty Ltd
Prepared by:	Narla Environmental Pty Ltd
Project no:	Gitr1
Date:	October 2020
Version:	Final v1.0

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Report Certification

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Document Control

Revision	Document Name	Issue Date	Internal Document Review
Final v1.0	Flora and Fauna Assessment Report – 54 Bardo Road, Newport, NSW	21/10/2020	Chris Moore

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Glossary

Acronym/ Term	Definition
BAM	Biodiversity Assessment Methodology
BC Act	New South Wales Biodiversity Conservation Act 2016
BDAR	Biodiversity Development Assessment Report
DA	Development Application
DAWE	Department of Agriculture, Water and the Environment
Development	The use of land, and the subdivision of land, and the carrying out of a work, and the demolition of a building or work, and the erection of a building, and any other act, matter or thing referred to in section 26 that is controlled by an environmental planning instrument but does not include any development of a class or description prescribed by the regulations for the purposes of this definition (Environmental Planning and Assessment Act 1979)
DPI	Department of Primary Industries
DPIE	Department of Planning, Industry and Environment
EP&A Act	Environmental Planning & Assessment Act 1979
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
FFA	Flora and Fauna Assessment
ha	Hectares
km	Kilometre
LGA	Local Government Area
Locality	The area within a 10 km radius of the Subject Property
m	metres
PDCP	Pittwater Development Control Plan 2014
PLEP	Pittwater Local Environmental Plan 2014
mm	millimetres
NSW	New South Wales
OEH	Office of Environment and Heritage (now known as the DPIE)
SEPP	State Environmental Planning Policy
SRZ	Structural Root Zone
Subject Property	54 Bardo Road, Newport (Lot 42/2/DP4689)
Threatened species, populations and ecological communities	Species, populations and ecological communities specified in Schedules 1 and 2 of the BC Act 2016
TPZ	Tree Protection Zone
VMP	Vegetation Management Plan

1. Introduction

1.1 Project Background

Narla Environmental Pty Ltd (Narla) was engaged by BPG Holdings (No 5) Pty Ltd ('the proponent') to undertake a Flora and Fauna Assessment (FFA) for the proposed development at 54 Bardo Road, Newport, NSW 2106, (Lot 42/2/DP4689), hereafter referred to as the 'Subject Property'. The proposed development involves the construction of six (6) dwellings, the construction of underground carparking and associated landscaping All areas associated with the proposed development will hereafter be referred to as the 'Subject Site' (**Figure 1**).

Narla have produced this report in order to assess any potential impacts associated with the proposed activity on terrestrial ecology (biodiversity), particularly threatened species, populations, and ecological communities listed under the Biodiversity Conservation Act 2016 (BC Act) and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). The report will also recommend appropriate measures to mitigate any potential impacts in line with all relevant State Environmental Planning Policies (SEPP) and local government plans, namely the Pittwater Local Environmental Plan 2014 (PLEP) and the Pittwater Development Control Plan 2014 (PDCP).

1.2 Site Description and Location

The Subject Property is located at 54 Bardo Road within the locality of Newport in the Northern Beaches Local Government Area (LGA). The site boundary has been defined by cadastral boundaries provided on the NSW Government Land and Property Information Spatial Information Exchange map viewer (NSW SixMaps 2020) and the site plans (Giles Tribe 2020) (**Figure 2**).

The Subject Property covers an area of approximately 1,231m^{2}and contains a dwelling at the centre of the Subject Property, a shed in the north western extent and landscaping along all edges of the Subject Property.

1.3 Topography, Geology and Soil

The Subject Property is relatively flat with a slight southern slope with elevation ranging from approximately 20m in the north to 18m on the southern extent of the Subject Property.

The Subject Property is situated on the 'Newport' soil landscape as described in the Sydney 1:100,000 sheet (Chapman et al 2009). The Newport soil landscape consists of Holocene sands mantling other soil materials or bedrock. Soils consist of shallow, well sorted siliceous sands overlying moderately deep buried sands including yellow podzolic soils with sandy topsoils on crests and gentle slopes; deep Podzols on steep slopes, lower slopes and in depressions. The Newport soil landscape overlies the Newport and Garnie Formations of the Middle Triassic Narrabeen Group.

1.4 Hydrology

The Subject Site and immediate surrounds do not contain any mapped watercourses, waterbodies or associated riparian buffer areas. No hydrological features were identified by Narla during the site assessment.

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Figure 1. Subject Property and Subject Site.

Figure 2. Site Plans (Giles Tribe 2020)

1.5 Relevant Legislation and Policy

The legislation and policy that are addressed in this report are listed in **Table 1.**

Table 1. Relevant legislation and policy addressed

Legislation/Policy	Relevant Ecological Feature on Site	Triggered	Action Required
Environmental Planning and Assessment Act 1979 (EP&A Act)	All threatened species, populations, and ecological communities and their habitat that occur or are likely to occur on the Subject Property during a part of their lifecycle.	Yes	This Flora and Fauna Assessment and all subsequent recommendations relevant to the planning process under 'Part 4 Development assessment and consent'.
Biodiversity Conservation Act (BC Act) (New South Wales)	There were no BC Act listed Threatened Ecological Communities, species, or populations identified within the Subject Property during the site assessment. It was deemed that there was no potential for significant impact upon any of the potentially occurring BC Act listed threatened species; therefore, no '5-Part Test Assessment of Significance' was required.	Yes	This FFA, particularly the likelihood tables for threatened fauna and flora species occurring or potentially occurring within the Subject Property, as well as severity of potential impacts
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (Commonwealth)	No EPBC Act (Commonwealth) listed Threatened Ecological Communities, species, or populations were identified within the Subject Property during the site assessment. It was deemed that there was no potential for significant impact upon any of the potentially occurring EPBC Act listed threatened species.	No	None.
Biosecurity Act 2015 (Bio Act)	Three (3) priority weeds for the Greater Sydney region were identified within the Subject Property: ▪ *Asparagus aethiopicus* (Ground Asparagus); ▪ *Asparagus asparagoides* (Bridal Creeper); and ▪ *Senecio madagascariensis* (Fireweed).	Yes	The listed priority weed must be managed in accordance with the Biosecurity Act 2015.
State Environmental Planning Policy (Coastal Management) 2018	The Subject Property does not contain any areas mapped as 'Coastal Wetlands', 'Littoral Rainforest', 'Coastal Environment Area' or 'Coastal Use Area'. Therefore, this SEPP does not apply.	No	None.

Legislation/Policy	Relevant Ecological Feature on Site	Triggered	Action Required
State Environmental Planning Policy (Koala Habitat Protection) 2019	Although the Koala Habitat Protection SEPP (2019) applies to land within the Northern Beaches LGA, the Subject Property does not encompass an area larger than 1ha; therefore, the Koala Habitat Protection SEPP (2019) does not apply.	No	None.
State Environmental Planning Policy No 19— Bushland in Urban Areas	The Subject Property does not contain, nor is adjoining, any land zoned or reserved for public open spaces; therefore, SEPP 19 does not apply.	No	None.
Water Management Act 2000	The Subject Property does not occur on waterfront land or riparian buffer areas. Therefore, this SEPP does not apply.	No	None.

1.6 Biodiversity Assessment Pathway

The requirements of the BC Act 2016 and Biodiversity Conservation Regulation 2017 are mandatory for all Development Applications (DA) assessed pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) submitted in the Northern Beaches LGA.

The BC Act and its regulations stipulate clearing 'area threshold' values (**Table 2**) that determine whether a development is required to be assessed in accordance with the 'Biodiversity Offset Scheme' (BOS). Minimum entry thresholds for vegetation clearing depend on the minimum lot size (shown in the Lot Size Maps made under the relevant Local Environmental Plan [LEP]), or actual lot size (where there is no minimum lot size provided for the relevant land under the LEP).

The minimum lot size prescribed by the PLEP to the Subject Property is 700m^2. To avoid triggering the Biodiversity Offset Scheme, the proponent must avoid the clearing/management of native vegetation in excess of 0.25ha. The entire Subject Property covers an area of approximately 0.12 ha.

Table 2. Biodiversity offset scheme entry thresholds. Bold indicates the threshold relevant to this report.

Minimum lot size associated with the property	Threshold for clearing, above which the BAM and offsets scheme apply
Less than 1ha	**0.25ha or more**
1ha to less than 40ha	0.5 ha or more
40ha to less than 1000ha	1ha or more
1000ha or more	2ha or more

The Subject Property does not contain land mapped as 'Biodiversity Values' within the Biodiversity Values Map (DPIE 2020a), and the threshold for clearing is greater than the entire area of the Subject Property, therefore:

- The BOS is not triggered;
- The Biodiversity Assessment Method (BAM) does not apply;
- An Accredited Assessor is not required to prepare a Biodiversity Development Assessment Report (BDAR); and
- No offset credit calculations are required.

As such, a standard Flora and Fauna Assessment Report (this report) has been produced to assess the impact of the proposed DA.

1.7 Pittwater Local Environmental Plan 2014 (PLEP)

1.7.1 Zoning

The Subject Property is zoned 'R2: Low Density Residential'. The PLEP requires that the development satisfies the zone objectives which are:

- To provide for the housing needs of the community within a low-density residential environment;
- To enable other land uses that provide facilities or services to meet the day to day needs of residents; and
- To provide for a limited range of other land uses of a low intensity and scale, compatible with surrounding land uses.

The proposed development is for six (6) residential dwellings for seniors. As such, the proposed development satisfies the zone objectives by facilitating the day to day needs of residents within a low-density residential environment.

1.7.2 Acid sulphate soils

This clause does not apply. The Subject Property does not occur within 500m of adjacent class 1,2,3 or 4 land that is below 5 meters (Australian Height Datum), and by which the water table is likely to be lowered below 1 metre on adjacent Class 1,2,3 or 4 lands.

1.7.3 Biodiversity (Part 7.6)

The Subject Property is entirely mapped as containing land identified as 'Biodiversity' on the PLEP Terrestrial Biodiversity Map. As such, the following objectives apply to the proposed development:

- Protecting native fauna and flora;
- Protecting the ecological processes necessary for their continued existence; and
- Encouraging the conservation and recovery of native fauna and flora and their habitats.

Before determining this development application, the consent authority must consider:

- Whether the development is likely to have:
    - Any adverse impact on the condition, ecological value, and significance of the fauna and flora on the land;
    - Any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna;
    - Any potential to fragment, disturb, or diminish the biodiversity structure, function, and composition of the land;
    - Any adverse impact on the habitat elements providing connectivity on the land; and
- Any appropriate measures proposed to avoid, minimise, or mitigate the impacts of the development.

Development consent must not be granted unless the consent authority is satisfied that:

- The development is designed, sited, and will be managed to avoid any significant adverse environmental impact;
- If that impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited, and will be managed to minimise that impact; or
- If that impact cannot be minimised—the development will be managed to mitigate that impact.

The proposed development complies with part 7.6 of the PLEP. The proposed development is predominately situated on areas of urban exotic/native vegetation. The proponent has situated the development in a way that minimises clearing, with stands of overstory species being retained. Where clearing of native vegetation cannot be avoided, the proponent has committed to implementing a Biodiversity Management Plan (BMP) to mitigate any potential impacts.

1.8 Pittwater Development Control Plan 2014 (PDCP)

1.8.1 Environmental Objective (Section B)

The proposed development must comply with the objectives of the PDCP, which are to:

- Conserve and enhance the ecological integrity, biodiversity, wildlife corridors, aquatic habitats, water quality, environmental heritage and environmental significance of Pittwater;
- Maintain the natural beauty of the area by retaining natural landforms, minimising land excavation and fill, and by minimising erosion, pollution and other forces that may impact on the landscape;
- Prescribe limits to urban development to control potential impacts on the natural environment, natural hazards, and the provision, capacity and management of infrastructure; and
- Plan design and site development to achieve the principles of ecologically sustainable development.

The proposed development complies with the objectives of the PDCP. The proposed development is predominately situated on areas of urban exotic/native vegetation. Where clearing of native vegetation cannot be avoided, the proponent has committed to implementing a Biodiversity Management Plan (BMP) to mitigate impacts.

1.9 Scope of Assessment

The objectives of this FFA were to:

- Establish the likelihood of occurrence of migratory species, threatened species, endangered populations, and threatened ecological communities as listed under the BC Act and/or the EPBC Act;
- Assess any potential impacts to species and/or communities listed under the BC Act and EPBC Act;
- Identify and map the distribution of vegetation communities within the Subject Property;
- Record presence and the extent of any known or potential fauna habitat features such as nests, dreys, caves, crevices, culverts, pools, soaks, flowering trees, fruiting trees, or hollow-bearing trees and provide recommendations for on-going management of these habitat features and any fauna present;
- Record presence and the extent of any priority weeds or weed infestations and provide recommendations for on-going management; and
- Recommend any controls or additional actions to be taken to protect or improve environmental outcomes of the proposed activity.

1.10 Study Limitations

This study was not intended to provide a complete inventory of all flora and fauna species with potential to occur on the Subject Property. The species list provided for the Subject Property in this report was restricted to what was observed during the site assessment by the Narla Ecologist. The timing of the survey may not have coincided with emergence times of some species of flora and fauna, such as seasonally flowering herbs, seasonal migratory fauna, or nocturnal fauna. To account for those species that could not be identified during the field survey, detailed habitat assessments were combined with desktop research and local ecological knowledge to establish an accurate prediction of the potential for such species to occur on or adjacent the Subject Property.

2. Methodology

2.1 Desktop Assessment and Literature Review

A thorough literature review of local information relevant to the Northern Beaches Council area was undertaken. Searches using NSW Wildlife Atlas (BioNet; DPIE 2020b) and the Commonwealth Protected Matters Search Tool (DAWE 2020) were conducted to identify all current threatened flora and fauna, as well as migratory fauna records within a 10km x 10km cell search area centred on the Subject Property. These data were used to assist in establishing the presence or likelihood of any ecological values as occurring on or adjacent the Subject Property, and helped inform our Ecologist on what to look for during the site assessment.

Soil landscape and geological mapping was examined to gain an understanding of the environment on the Subject Property and assist in determining whether any threatened flora or ecological communities may occur there (Chapman et al. 2009).

2.2 Ecological Site Assessment

2.2.1 General Survey

A site assessment was undertaken by Narla Ecologist, Stefan Giessler, on Tuesday the 13th of October 2020. During the site assessment, the following activities were undertaken:

- Identifying and recording the vegetation communities present within the Subject Property, with focus on identifying any threatened ecological communities (TEC);
- Recording a detailed list of flora species encountered within the Subject Property, with a focus on threatened species, species diagnostic of threatened ecological communities, and priority weeds;
- Recording opportunistic sightings of any fauna species seen or heard on or within the immediate surrounds of the Subject Property;
- Targeted surveys for threatened flora;
- Identifying and recording the locations of notable fauna habitat such as important nesting, roosting, or foraging microhabitats;
- Assessing the connectivity and quality of the vegetation within the Subject Property and surrounding area; and
- Targeting the habitat of any threatened and regionally significant fauna including:
    - Tree hollows (habitat for threatened large forest owls, parrots, and arboreal mammals);
    - Caves and crevices (habitat for threatened reptiles, small mammals, and microbats);
    - Termite mounds (habitat for threatened reptiles);
    - Soaks (habitat for threatened frogs);
    - Wetlands (habitat for threatened fish, frogs, and water birds);
    - Drainage lines (habitat for threatened fish and frogs);
    - Fruiting trees (food for threatened frugivorous birds and mammals);
    - Flowering trees (food for threatened nectarivorous birds and mammals);
    - Trees and shrubs supporting nest structures (habitat for threatened birds and arboreal mammals); and
    - Any other habitat features that may support fauna (particularly threatened) species.

2.2.2 Weather Conditions

Weather conditions recorded at the nearest weather station (Terrey Hills, NSW) prior to and during the site assessment are provided in **Table 3** (BOM 2020). The data revealed a lack of rainfall leading up to the survey. These weather conditions may not have been conducive to the emergence of orchids and annual herbs.

Table 3. Weather conditions recorded at Terrey Hills (station 066059) preceding and during the site assessment (site assessment date in bold)

Survey date	Day	Minimum Temp. (°C)	Maximum Temp. (°C)	Rainfall (mm)
06/10/2020	Tuesday	13.9	18.3	0
07/10/2020	Wednesday	14.5	19.8	0.2
08/10/2020	Thursday	16	27.7	0.4
09/10/2020	Friday	12.4	21.6	0.6
10/10/2020	Saturday	10.2	23.9	0
11/10/2020	Sunday	12.4	25.4	0
12/10/2020	Monday	16	22.8	0
13/10/2020	**Tuesday**	**13.3**	**27.6**	**0**

2.2.3 Mapping and Analysis of Vegetation Communities

Narla examined local satellite imagery, geological mapping, soil landscape mapping, and topographic mapping, in addition to existing vegetation mapping (The Native Vegetation of the Sydney Metropolitan Area [OEH 2016b]) in order to stratify the Subject Property and guide the site assessment survey efforts. The following documents were also consulted during the site assessment to assist with the identification of vegetation communities present within the Subject Property:

- Chapman G.A., Murphy C.L., Tille P.J., Atkinson G. and Morse R.J. (2009) Soil Landscapes of the Sydney 1:100,000 Sheet map, Ed. 4, Department of Environment, Climate Change and Water, Sydney
- Department of Planning, Industry and Environment (DPIE) (2020d) eSPADE v2.1 https://www.environment.nsw.gov.au/eSpade2Webapp#
- Office of Environment and Heritage (OEH) (2016b) The Native Vegetation of the Sydney Metropolitan Area. Version 3.1
- Office of Environment and Heritage (OEH) (2016c) The Native Vegetation of the Sydney Metropolitan Area. Volume 2: Vegetation Community Profiles. Version 3.0

2.2.4 Impact Assessment

An assessment of likely occurrence was carried out for locally occurring threatened species (**Table 6**, **Table 8**) and threatened migratory species (**Table 9**). It was then determined that no further impact assessment (5-Part Test) was required for any locally occurring threatened species or communities.

3. Native Vegetation

3.1 Vegetation Community

3.1.1 Historically Mapped Vegetation Communities

The vegetation within the Subject Property has not been historically mapped. Historic vegetation mapping (The Native Vegetation of the Sydney Metropolitan Area [OEH 2016b]) identified four (4) vegetation communities that occur within 300m of the Subject Property (**Figure 3**). These included:

- Central Coast Escarpment Moist Forest;
- Coastal Escarpment Littoral Rainforest;
- Pittwater Spotted Gum Forest; and
- Urban Exotic/Native.

3.1.2 Field-validated Vegetation Communities

The field survey conducted by the Narla Ecologist identified the vegetation within the Subject Property as best conforming to Central Coast Escarpment Moist Forest and Urban Exotic/Native vegetation as is detailed in **Table 4** and **Table 5**. The vegetation communities and existing dwelling is displayed in **Figure 4**.

Table 4. Description of Central Coast Escarpment Moist Forest identified within the Subject Property.

Central Coast Escarpment Moist Forest	
	
Extent within Subject Property (approximate)	510 m^2
Description of the Vegetation within the Subject Property	
The upper stratum within this zone was dominated by native species including *Syncarpia glomulifera*, *Eucalyptus botryoides* and *Eucalyptus punctata*. The mid stratum was largely absent, a few scattered *Breynia oblongifolia* were present. Scattered exotics including *Cinnamomum camphora* and *Ochna serrulata* persisted in the mid stratum. The ground stratum consisted primarily of exotics including *Ehrharta erecta*, *Chlorophytum comosum* and *Nephrolepis cordifolia*. Some natives were present within the ground stratum including *Dianella caerulea*, *Adiantum aethiopicum* and *Adiantum hispidulum*. The community was highly modified, fragmented and largely lacked a mid-stratum. The community lacked diversity and was dominated by exotic species in the mid and ground stratum. The mid stratum was largely absent, only a few scattered *Breynia oblongifolia* individuals were present.	
Description of the Vegetation Community (OEH 2016)	
Central Coast Escarpment Moist Forest occurs on sheltered foreshore slopes above the Hawkesbury River and its adjoining tributaries. It is a tall open eucalypt forest with an open to moderately dense cover of mesic shrubs, occasional palms and a prominent grass and fern ground cover. Turpentine (*Syncarpia glomulifera*) and/or rough-barked apple (*Angophora floribunda*) may occur in either the upper or middle tree layers and as result are the most commonly recorded trees. However individual stands are more often characterised by tall grey ironbark (*Eucalyptus paniculata*), mahoganies (including *Eucalyptus umbra*) or bangalay (*Eucalyptus botryoides*). Forest oak (*Allocasuarina torulosa*) is invariably recorded above a midstratum of soft-leaved shrubs, small trees and palms	

Central Coast Escarpment Moist Forest	
including cabbage tree palm (*Livistona australis*), scentless rosewood (*Synoum glandulosum*) and *Astrotricha floccosa*, typical of coastal forests. This community is common on mid to lower south-facing slopes below 100 metres in elevation on Narrabeen sediments. It receives between 1150 and 1300 millimetres of mean annual rainfall. It has been cleared from many of the lower escarpment slopes on the Pittwater peninsula. The forest is more extensively distributed on the northern side of the Hawkesbury River and is widespread on slopes beneath the Hawkesbury sandstone plateaus of Dharug and Brisbane Water national parks and on upper slopes of the Gosford and Watagan ranges.	
Justification of Vegetation Assignment	The determination of this community was based on landscape attributes, including soil landscapes and elevation, and the presence of a number of characteristic species.
BC Act 2016 Status	Not Listed.
EPBC Act 1999 Status	Not Listed.

Table 5. Description of Urban Exotic/Native vegetation identified within the Subject Property.

Urban Exotic/Native Vegetation	
	
Extent within Subject Property (approximate)	480 m^2
Description of the Vegetation within the Subject Property	
The vegetation within this zone consisted of planted exotics and native species. The native species included *Cyperus gracilis*, *Pteridium esculentum* and *Adiantum aethiopicum*. Exotic species included *Acer palmatum*,	

Urban Exotic/Native Vegetation	
Fraxinus griffithii, Ochna serrulata, *Brugmansia suaveolens*, *Tradescantia fluminensis*, *Trifolium repens*, *Chlorophytum comosum* and *Sida rhombifolia*	
Justification of Vegetation Assignment	The community consisted of a majority of exotic species and landscape natives that did not conform to a native vegetation community.
BC Act 2016 Status	Not Listed.
EPBC Act 1999 Status	Not Listed.

Figure 3. Historically mapped vegetation communities within the Subject Property (OEH 2016b).

Figure 4. Narla field-validated vegetation communities within the Subject Property.

4. Threatened Species

4.1 Threatened Flora

Desktop analysis revealed a range of threatened flora as occurring or having the potential to occur on or within a 10km x 10km cell centred on the Subject Property. Thorough targeted surveys were undertaken throughout the Subject Property for potentially occurring threatened flora. No threatened flora were identified at the time of the site assessment.

A comprehensive list of flora species identified during the site assessment is presented in **Appendix A**.

The following locally occurring species were assessed for their potential to occur within the Subject Property (**Table 6**). It was deemed that the proposed activity will have no significant impact on these species. Therefore, no further assessment of impacts pursuant the BC Act (e.g. Biodiversity Development Assessment Report [BDAR]) and/or EPBC Act Referral to Commonwealth will be required.

Table 6. Assessment of likely occurrence of threatened flora species within the Subject Property

Species	BC Act	EPBC Act	Likelihood of occurrence within the Subject Property	Further Impact Assessment Required?
Asterolasia elegans	Endangered	Endangered	Low. The species is associated with sheltered forests on mid-lower slopes of valleys, this habitat does not exist within the Subject Site. No proximal records exist within 1km of the Subject Property (DPIE 2020b). Therefore, the species is unlikely to exist within the Subject Property.	No.
Boronia umbellata (Orana Boronia)	Vulnerable	Vulnerable	Low. The species grows in gullies and wet open forest. Limited, highly modified wet open forest is present within the Subject Property, however, a targeted survey was undertaken and no individuals were identified.	No.
Cryptostylis hunteriana (Leafless Tongue Orchid)	Vulnerable	Vulnerable	Low. The species is typically associated with Scribbly Gum (*Eucalyptus sclerophylla*), Silvertop Ash (*E. sieberi*), Red Bloodwood (*Corymbia gummifera*) and Black Sheoak (*Allocasuarina littoralis*), none of these species were present within the Subject Property. A targeted survey was undertaken and no individuals were identified.	No.

Species	BC Act	EPBC Act	Likelihood of occurrence within the Subject Property	Further Impact Assessment Required?
Callistemon linearifolius (Netted Bottle Brush)	Vulnerable	-	Low. The species was more widespread in the past, and there are currently only 5-6 populations remaining from the 22 populations historically recorded in the Sydney area. Three of the remaining populations are reserved in Ku-ring-gai Chase National Park, Lion Island Nature Reserve, and Spectacle Island Nature Reserve. Grows in dry sclerophyll forest on the coast and adjacent ranges. The Subject Property has been extensively modified with common garden species. A targeted survey was undertaken and no individuals were identified.	No
Chamaesyce psammogeton (Sand Spurge)	Endangered	-	Low. Few proximal records (DPIE 2020b). This species grows in fore-dunes, pebbly strandlines, and exposed headlands often with *Spinifex sericeus* and *Zoysia macrantha.* No such habitat exists within the Subject Property. A targeted survey was identified and no individuals were identified.	No
Epacris purpurascens var. *purpurascens*	Vulnerable	-	Low. This species is found in a range of habitat types, most of which have a strong shale soil influence. No such soil was identified within the Subject Property. A targeted survey was undertaken and no individuals were identified.	No
Eucalyptus camfieldii (Camfield's Stringybark)	Vulnerable	Vulnerable	Low. This species is found in poor coastal country in shallow sandy soils overlying Hawkesbury sandstone, in coastal heath mostly on exposed sandy ridges. Occurs mostly in small scattered stands near the boundary of tall coastal heaths and low open woodland of the slightly more fertile inland areas. Although appropriate soil may exist within the Subject Property, it has been extensively modified with common garden species. A targeted survey was undertaken and no individuals were identified.	No
Eucalyptus nicholii (Narrow-leaved Black Peppermint)	Vulnerable	Vulnerable	Low. Few proximal records (DPIE 2020b). Typically grows in dry grassy woodland on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock. No such habitat was identified within the Subject Property. A targeted survey was undertaken and no individuals were identified.	No

Species	BC Act	EPBC Act	Likelihood of occurrence within the Subject Property	Further Impact Assessment Required?
Grevillea caleyi (Caley's Grevillea)	Critically Endangered	Critically Endangered	Low. This species is restricted to an 8km square area around Terrey Hills. All sites occur on the ridgetop between elevations of 170 to 240m above sea level, in association with laterite soils and a vegetation community of open forest, generally dominated by *Eucalyptus sieberi* and *E. gummifera*. Commonly found in the endangered Duffys Forest ecological community. No such habitat occurs within the Subject Property. A targeted survey was undertaken and no individuals were identified.	No
Genoplesium baueri (Bauer's Midge Orchid)	Endangered	Endangered	Low. Currently, the species is known from just over 200 plants across 13 sites. The species has been recorded at locations now likely to be within the following conservation reserves: Berowra Valley Regional Park, Royal National Park and Lane Cove National Park. May occur in the Woronora, O'Hares, Metropolitan and Warragamba Catchments. The Subject Property has been extensively modified, a targeted survey was undertaken and no individuals were identified.	No.
Kunzea rupestris	Vulnerable	Vulnerable	Low. The species is associated with shallow depressions on large sandstone rock outcrops. No such habitat exists within the Subject Property. A targeted survey was undertaken and no individuals were identified.	No
Lasiopetalum joyceae	Vulnerable	Vulnerable	Low. The species is associated with heath on sandstone. No such habitat exists within the Subject Property. A targeted survey was undertaken and no individuals were identified.	No.
Microtis angusii (Angus's Onion Orchid)	Endangered	Endangered	Low. Most *Microtis* species reproduce vegetatively by the formation of "daughter" tubers from the main tuber. No proximal records exist from within the Subject Property, or immediately adjacent areas. The Subject Property has been extensively modified. A targeted survey was undertaken and no individuals were identified.	No

Species	BC Act	EPBC Act	Likelihood of occurrence within the Subject Property	Further Impact Assessment Required?
Persoonia hirsuta (Hairy Geebung)	Endangered	Endangered	Low. The Hairy Geebung is found in sandy soils in dry sclerophyll open forest, woodland and heath on sandstone. It is usually present as isolated individuals or very small populations. The Subject Property has been extensively modified with common garden species. A targeted survey was undertaken and no individuals were identified.	No
Pimelea curviflora var. *curviflora*	Vulnerable	Vulnerable	Low. Occurs on shale/lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes amongst woodlands. Although appropriate soil exists within the Subject Property, it has been extensively modified with common garden species. A targeted survey was undertaken and no individuals were identified.	No
Prostanthera densa (Villous Mint-bush))	Vulnerable	Vulnerable	Low. Occurs sclerophyll forest and shrubland on coastal headlands and near coastal ranges, chiefly on sandstone, and rocky slopes near the sea. No such habitat exists within the Subject Property. A targeted survey was undertaken and no individuals were identified.	No
Rhodamnia rubescens (Scrub Turpentine)	Critically Endangered	-	Low. Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils. Although appropriate habitat exists within the Subject Property, it has been extensively modified. A targeted survey was undertaken and no individuals were identified.	No
Syzygium paniculatum (Magenta Lilly Pilly)	Endangered	Vulnerable	Low. This species is restricted mainly to remnant stands of Littoral Rainforest. No such habitat exists within the Subject Site. A targeted survey was undertaken and no individuals were identified.	No
Tetratheca glandulosa	Vulnerable	-	Low. This species is associated with shale-sandstone transition habitat. Although such soil exists within the Subject Property, it has been extensively modified. A targeted survey was undertaken and no individuals were identified.	No

4.2 Threatened Fauna

Details of the fauna habitat recorded within the Subject Property are included in **Table 7**. The likelihood of occurrence of threatened fauna species within the Subject Property is presented in **Table 8**.

It was deemed that the proposed works will have no potential for significant impact upon any potentially occurring BC Act listed threatened species. Therefore, no 'Assessment of Significance' (5-part test) was required.

It was deemed that the proposed works will not have a significant impact such that a local viable population or occurrence of any of the threatened species will be placed at risk of extinction. Therefore, no BDAR or EPBC Act Referral to the Commonwealth is required for the proposed development.

A small suite of predominantly native, common avian fauna species were identified within and surrounding the Subject Property during the site assessment. All native fauna species encountered were listed as 'protected' under the BC Act. The list of fauna recorded during the site visit was produced opportunistically (**Appendix B**).

Table 7. Fauna habitat values

Habitat component	Site values
Coarse woody debris	Absent.
Rock outcrops and bush rock	Absent
Caves, crevices and overhangs	Absent
Culverts, bridges, mine shafts, or abandoned structures	Absent.
Nectar/lerp-bearing Trees	Nectar-bearing trees were recorded within the Subject Property include: *Syncarpia glomulifera, Eucalyptus botryoides, Eucalyptus punctata* and *Eucalyptus crebra*. These trees may provide intermittent nectar sources for nomadic nectivores such as the Grey-headed Flying-fox.
Nectar-bearing shrubs	Exotic nectar-bearing shrubs were also recorded within the Subject Property. These shrubs may also provide intermittent nectar sources for Grey-headed Flying-fox.
Koala Feed Trees	*Eucalyptus botryoides, Eucalyptus crebra* and *Eucalyptus punctata* were present within the Subject Site.
Large stick nests	Absent.
She-oak fruit (Glossy Black Cockatoo feed)	Absent.
Seed-bearing trees and shrubs	Seed-bearing trees including *Syncarpia glomulifera, Eucalyptus botryoides, Eucalyptus punctata* and *Eucalyptus crebra* were present.
Soft-fruit-bearing trees	Absent.
Dense shrubbery and leaf litter	Absent.
Tree hollows	Absent.

Habitat component	Site values
Decorticating bark	Absent.
Wetlands, soaks, and streams	Absent.
Open water bodies	Absent
Estuarine, beach, mudflats, and rocky foreshores	Absent

Table 8. Assessment of likely occurrence of threatened fauna species within the Subject Property

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Artamus cyanopterus (Dusky Wood swallow)	Vulnerable	-	Potential	Present. The species feeds on invertebrates and flowering plants. Nectar bearing trees and shrubs were present within the Subject Site.	Present. This species nests in shrubs and low trees, creating an open cup shaped nest. Most breeding occurs on the western slopes of the Great Dividing Range. No nests were identified within the Subject Property.	Negligible impacts to foraging habitat. Only six (6) nectar producing bearing trees will be removed. Nectar producing trees will persist within the Subject Property and adjoining properties. Negligible impacts to breeding habitat. Most breeding for this species occurs on the western slopes of the Great Dividing Range, the Subject Sites does not occur within this area. Further trees containing upright forks in branches will persist within the Subject Property and adjoining areas.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Anthochaera phrygia (Regent Honeyeater)	Critically Endangered	Critically Endangered	Low	Not present. This species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River She-oak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover, and an abundance of mistletoes. No such habitat was identified within the Subject Property, it has been extensively modified with common garden species.	Not present. There are only two (2) known key breeding regions remaining in NSW: Capertee Valley and the Bundarra-Barraba region.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Botaurus poiciloptilus (Australasian Bittern)	Endangered	Endangered	Low	This species favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (*Typha* spp.) and spikerushes (*Eleocharis* spp.). No such habitat was identified within the Subject Property.	This species nests in densely vegetated wetlands. No such habitat was identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Burhinus grallarius (Bush Stone-curlew)	Endangered	-	Low	This species inhabits open forests and woodlands with a sparse grassy ground layer and fallen timber. No such habitat was identified within the Subject Property, it has been extensively modified with common garden species.	This species nests on the ground in a scrape or small bare patch. No nests were identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Callocephalon fimbriatum (Gang-gang Cockatoo)	Vulnerable	-	Potential	Present. The species feeds on the seeds of native flora including eucalyptus and acacia seed. The species favours box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas. Three (3) species of eucalyptus were present within the Subject Property.	Dependent on large hollow-bearing eucalypts for nest sites. No hollows were identified within the Subject Property.	Negligible, impacts to foraging habitat. One (1) eucalypt will be removed to facilitate the proposed development. A suite of eucalypts will remain within the Subject Property and adjoining areas. No anticipated net loss of breeding habitat.	No
Calyptorhynchus lathami (Glossy Black-Cockatoo)	Vulnerable	-	Low	This species feeds almost exclusively on the seeds of several species of she-oak (*Casuarina* and *Allocasuarina* species). Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of she-oak occur. No such foraging habitat was identified within the Subject Property.	Dependent on large hollow-bearing eucalypts for nest sites. No hollows were identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Cercartetus nanus (Eastern Pygmy-possum)	Vulnerable	-	Low	Present. This species is found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred. Feeds largely on nectar and pollen collected from banksias, eucalypts and bottlebrushes, as well as insects. This habitat is present within the Subject Property, but is unlikely to be utilised by the species as it has been highly modified with planted exotics.	Not present. Shelters in tree hollows, rotten stumps, holes in the ground, abandoned bird-nests, Ringtail Possum dreys or thickets of vegetation, although hollows are preferred. No such habitat was identified within the Subject Property.	Negligible impact to foraging habitat. Six (6) nectar producing trees will be removed to facilitate the proposed development. The Subject Site has been highly modified with planted exotics. It is unlikely that the species would utilise the site for foraging. Negligible, no anticipated impact to breeding habitat.	No
Chalinolobus dwyeri (Large-eared Pied Bat)	Vulnerable	Vulnerable	Low	This species forages for small, flying insects in well-timbered areas. Whilst prey species may occur, the urban exotic/native vegetation within the Subject Property is unlikely to provide suitable foraging habitat for this species.	Not present. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (*Petrochelidon ariel*). No such habitat was identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Dasyurus maculatus (Spotted-tailed Quoll)	Vulnerable	Endangered	Low	Present. Consumes a variety of prey, including gliders, possums, small wallabies, rats, birds, bandicoots, rabbits, reptiles and insects. Also eats carrion and takes domestic fowl. Potential prey items may exist within the Subject Property.	Not present This species uses hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. No such habitat was identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Daphoenositta chrysoptera (Varied Sittella)	Vulnerable	-	Low	Present. Species feeds on arthropods from crevices in rough or decorticating bark. Such habitat was present within the Subject Property, however, it is unlikely that the species is present. The species favours eucalypt forests and woodlands; the highly modified urban exotic/native habitat is unlikely to be utilised by the species.	This species nests in shrubs and low trees, creating an open cup shaped nest. No proximal records exist within the Subject Property and no nests were identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Diomedea exulans (Wandering Albatross)	Endangered	Endangered	Low	Not present. This species forages in pelagic, offshore and inshore waters, often at night, taking fish and cephalopods such as squid, crustaceans, and carrion, and will often follow ships feeding on the refuse they trail. No such habitat exists within the Subject Property.	Not present. This species only breeds on islands just north of the Antarctic Circle.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Esacus magnirostris (Beach stone-curlew)	Critically Endangered	-	Low	Not present. The species forages exclusively along the coast in the intertidal zones of beaches, estuaries and islands. No such habitat exists within the Subject Property.	Not present. This species nests in shallow sand and gravel in the intertidal zone at the back of beaches.	Negligible, no anticipated net loss of foraging or breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Falsistrellus tasmaniensis (Eastern False Pipistrelle)	Vulnerable	-	Low	Present. This species forages for small, flying insects just below the tree canopy. Whilst prey species may occur within the Subject Property, the urban exotic/native vegetation within the Subject Property is unlikely to provide suitable foraging habitat for this species.	Not present. The species roosts in eucalypt hollows. No such habitat was detected within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	
Glossopsitta pusilla (Little Lorikeet)	Vulnerable	-	Potential	Present. The species feeds on invertebrates and flowering plants. Nectar bearing trees and shrubs were present within the Subject Site.	Not present. Nests in proximity to feeding areas if possible, most typically selecting hollows in the limb or trunk of smooth-barked Eucalypts. Entrance is small (3cm) and usually high above the ground (2–15m). No hollows were identified within the Subject Property.	Negligible impact to foraging habitat. Six (6) nectar producing trees will be removed to facilitate the proposed development. The Subject Site has been highly modified with planted exotics. It is unlikely that the species would utilise the site for foraging. Negligible, no anticipated impact to breeding habitat.	No
Haematopus fuliginosus (Sooty Oystercatcher)	Vulnerable	-	Low	Not present. This species forages on exposed rock or coral at low tide for foods such as limpets and mussels. No such habitat was identified within the Subject Property.	Breeds almost exclusively on offshore islands, and occasionally on isolated promontories. No such habitat was identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Haliaeetus leucogaster (White-bellied Sea-Eagle)	Vulnerable	-	Low	Not present. Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Occurs at sites near the sea or sea-shore, such as around bays and inlets, beaches, reefs, lagoons, estuaries, and mangroves. Feed mainly on fish and freshwater turtles, but also waterbirds, reptiles, mammals and carrion. No such habitat was identified within the Subject Property.	Not present. Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat. Nests are large structures built from sticks and lined with leaves or grass. No nests were identified during the site assessment.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Hieraaetus morphnoides (Little Eagle)	Vulnerable	-	Low	This species occupies open eucalypt forest, woodland or open woodland. Preys on birds, reptiles and mammals, occasionally adding large insects and carrion. Potential prey items may occur within the Subject Property. Whilst prey species may occur within the Subject Property, the urban exotic/native vegetation within the Subject Property is unlikely to provide suitable foraging habitat for this species.	Not present. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter. No nests were identified during the site assessment.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Heleioporus australiacus (Giant Burrowing Frog)	Vulnerable	Vulnerable	Low	Species occurs in heath, woodland and dry sclerophyll forest. It forages on invertebrates that may be present within the Subject Property. However, the Subject Property is not conducive of the heath, woodland and dry sclerophyll forest where the species occurs. Therefore, foraging habitat is not present.	Not present, the species breeds in soaks and second order streams. No such habitat was present within the Subject property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Isoodon obesulus (Southern Brown Bandicoot [eastern])	Endangered	Endangered	Potential	Present. They are generally only found in heath or open forest with a heathy understorey on sandy or friable soils. They feed on a variety of ground-dwelling invertebrates and the fruit-bodies of hypogeous (underground-fruiting) fungi. Their searches for food often create distinctive conical holes in the soil. The urban exotic/native garden beds of the Subject Property may potentially provide suboptimal foraging habitat for this species.	Not present. The species nests during the day in a shallow depression in the ground covered by leaf litter, grass or other plant material. Nests may be located under Grass trees *Xanthorrhoea* spp., blackberry bushes, and other shrubs, or in rabbit burrows. No potential breeding habitat was located within the Subject Property.	Negligible, minor loss of suboptimal potential foraging habitat. No anticipated net loss of breeding habitat.	No
Ixobrychus flavicollis (Black Bittern)	Vulnerable	-	Low	Not present. Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves. Feeds on frogs, reptiles, fish and invertebrates, including snails, dragonflies, shrimps. and crayfish, with most feeding done at dusk and at night. No such habitat was identified within the Subject Property.	Not present. Nests, built in spring, are located on a branch overhanging water and consist of a bed of sticks and reeds on a base of larger sticks. No nests were identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Lathamus discolor (Swift Parrot)	Endangered	Critically Endangered	Low	Not present. On the mainland, this species occurs in areas where eucalypts are flowering profusely or where there are abundant lerp infestations (from sap-sucking bugs). Favoured feed trees include winter flowering species such as *Eucalyptus robusta, Corymbia maculata, C. gummifera, E. tereticornis, E. sideroxylon, E. pilularis,* and *E. albens.* No such habitat was identified within the Subject Property.	Not present. This species breeds in Tasmania.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Litoria aurea (Green and Golden Bell Frog)	Endangered	Vulnerable	Low	Not present. Species forages on insects and inhabits marshes, dams and stream sides, particularly those containing bullrushes (*Typha* spp.) or spikerushes (*Eleocharis* spp.) No such habitat was identified within the Subject Property.	Not present, the species breeds within aquatic habitats. No such habitat was identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Lophoictinia isura (Square-tailed Kite)	Vulnerable	-	Low	Found in a variety of timbered habitats including dry woodlands and open forests. The species is a Is a specialist hunter of passerines, especially honeyeaters, and most particularly nestlings, and insects in the tree canopy. Whilst prey species may occur within the Subject Property, the urban exotic/native vegetation within the Subject Property is unlikely to provide suitable foraging habitat for this species.	Not present. Species nests along or near watercourses, in a fork or a larger horizontal limb. No such habitat was identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Melithreptus gularis (Black-chinned Honeyeater)	Vulnerable	-	Low	Not present. Species forages on insects and occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (*Eucalyptus sideroxylon*), White Box (*E. albens*), Inland Grey Box (*E. microcarpa*), Yellow Box (*E. melliodora*), Blakely's Red Gum (*E. blakelyi*) and Forest Red Gum (*E. tereticornis*). No such habitat was identified within the Subject Property.	Not present, the species nests in high in the crown of a tree, in the uppermost lateral branches, hidden by foliage. It is a compact, suspended, cup-shaped nest. No nests were identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Miniopterus australis (Little Bent-winged Bat)	Vulnerable	-	Potential	Present. Found in moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Generally found in well-timbered areas. Roost in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges, and sometimes buildings during the day. At night, this species forages for small insects beneath the canopy of densely vegetated habitats. Although potential prey items may exist within the Subject Property, the vegetation is sparse and would therefore be considered suboptimal foraging habitat.	Only five (5) nursery sites/maternity colonies are known in Australia. They require large colonies roosting together to provide the high temperatures needed to rear their young. No suitable breeding habitat was identified within the Subject Property.	Negligible impact to foraging habitat. A small area of suboptimal foraging habitat will be removed to accommodate the proposed development. Potential foraging habitat will remain within the Subject Property and adjoining areas. Negligible, no anticipated net loss of breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Micronomus norfolkensis (Eastern Coastal Free-tailed Bat)	Vulnerable	-	Potential	Present. Species insectivorous and occur in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Although potential prey items may exist within the Subject Property, the vegetation is sparse and would therefore be considered suboptimal foraging habitat	Not present the species roosts in tree hollows but will also roost under bark or in man-made structures. No such habitat was identified within the Subject property.	Negligible impact to foraging habitat. A small area of suboptimal foraging habitat will be removed to accommodate the proposed development. Potential foraging habitat will remain within the Subject Property and adjoining areas. Negligible, no anticipated net loss of breeding habitat.	No
Miniopterus orianae oceanensis (Large Bent-winged Bat)	Vulnerable	-	Potential	Present. Hunt in forested areas, catching moths and other flying insects above the tree tops. Although potential prey items may exist within the Subject Property, the vegetation is sparse and would therefore be considered suboptimal foraging habitat.	Not present. This species only breeds in caves. No suitable breeding habitat was identified within the Subject Property.	Negligible impact to foraging habitat. A small area of suboptimal foraging habitat will be removed to accommodate the proposed development. Potential foraging habitat will remain within the Subject Property and adjoining areas. Negligible, no anticipated net loss of breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Myotis macropus (Southern Myotis)	Vulnerable	-	Low	Not present. This species forages over streams and pools catching insects and small fish by raking their feet across the water surface. No such habitat was identified within the Subject Property.	Not present. Generally, roost in groups of 10-15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges, and in dense foliage. No such habitat was identified within the Subject Property.	Negligible, no anticipated impact to foraging or breeding habitat.	No
Ninox connivens (Barking Owl)	Vulnerable	-	Potential	Present. Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Preferentially hunts small arboreal mammals such as Squirrel Gliders and Common Ringtail Possums, but when loss of tree hollows decreases these prey populations the owl becomes more reliant on birds, invertebrates, and terrestrial mammals such as rodents and rabbits. Can catch bats and moths on the wing, but typically hunts by sallying from a tall perch. Potential foraging habitat is present on the Subject Property, though it is sparse, and is therefore considered suboptimal for this owl.	Not present. This species nests in large hollows. No hollows were identified within the Subject Property.	Negligible impact to foraging habitat. A small area of suboptimal foraging habitat will be removed to accommodate the proposed development. Potential foraging habitat will remain within the Subject Property and adjoining areas. Negligible, no anticipated net loss of breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Ninox strenua (Powerful Owl)	Vulnerable	-	Potential	Present. The species breeds and hunts in open or closed sclerophyll forest or woodlands and hunts small mammals. It roosts by day in dense vegetation comprising species such as *Syncarpia glomulifera*, *Allocasuarina littoralis*, *Acacia melanoxylon*, *Angophora floribunda*, *Exocarpos cupressiformis* and a number of eucalypt species. Potential foraging habitat is present on the Subject Property, though it is sparse, and is therefore considered suboptimal for this large owl.	Not present. This species favours hollows >20cm in diameter. No hollows were identified within the Subject Property.	Negligible impact to foraging habitat. A small area of suboptimal foraging habitat will be removed to accommodate the proposed development. Potential foraging habitat will remain within the Subject Property and adjoining areas. Negligible, no anticipated net loss of breeding habitat.	No
Neophema pulchella (Turquoise Parrot)	Vulnerable	-	Potential	Present. Species lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. It forges on seeds or grasses and herbaceous plants. Potential foraging habitat is present on the Subject Property, though it is sparse and highly modified.	Not present. Species nests in tree hollows, logs or posts. No such habitat was identified within the Subject property.	Negligible impact to foraging habitat. A small area of suboptimal foraging habitat will be removed to accommodate the proposed development. Potential foraging habitat will remain within the Subject Property and adjoining areas. Negligible, no anticipated net loss of breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Pandion cristatus (Eastern Osprey)	Vulnerable	-	Low	Not present. The species favour coastal areas, especially the mouths of large rivers, lagoons, and lakes. Feed on fish over clear, open water. No such habitat was identified within the Subject Property.	Not present. Nests are made high up in dead trees or in dead crowns of live trees, usually within one kilometre of the sea. No nests were identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Petroica boodang (Scarlet Robin)	Vulnerable	-	Low	Not present. The species live in dry eucalypt forests and woodlands, habitat usually contains abundant logs and fallen timber. Birds forage from low perches, fence-posts or on the ground, from where they pounce on small insects and other invertebrates which are taken from the ground. Vegetation on the Subject Property was not conducive with the species requirements, it was is sparse and highly modified.	Not present. The species breeds on ridges, hills and foothills of the western slopes, the Great Dividing Range and eastern coastal regions. This species' nest is an open cup made of plant fibres and cobwebs and is built in the fork of tree usually more than 2 metres above the ground. No nests were identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Phascolarctos cinereus (Koala)	Vulnerable	-	Low	Present. Potential feed trees were identified within the Subject Property however, there have been no recent proximal records (DPIE 2020b) with the most recent proximal record being recorded in 2006. The highly urbanised and fragmented nature of the Subject Property suggests the potential for Koala presence is extremely low.	Not present. The urbanised and fragmented nature of the Subject Property makes the potential for Koala presence extremely low.	Negligible, no anticipated net loss of foraging or breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Pseudophryne australis (Red-crowned Toadlet)	Vulnerable	-	Low	Not present. Species occurs in open forests, mostly on Hawkesbury and Narrabeen Sandstones. Inhabits periodically wet drainage lines below sandstone ridges that often have shale lenses or cappings. No such habitat was identified within the Subject Property.	Not present. Breeding congregations occur in dense vegetation and debris beside ephemeral creeks and gutters. No such habitat was identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Pteropus poliocephalus (Grey-headed Flying-fox)	Vulnerable	Vulnerable	Potential	Present. Species feeds on the nectar and pollen of native trees, in particular *Eucalyptus*, *Melaleuca*, and *Banksia*, and fruits of rainforest trees and vines. Although feed trees may exist within the Subject Property, the vegetation is sparse and would therefore be considered suboptimal foraging habitat.	No breeding camps were identified within the Subject Property.	Negligible impacts to foraging habitat. Foraging habitat will remain within the Subject Property and adjacent properties; therefore, it is unlikely that the removal of six (6) pollen producing trees will impact the species. Negligible impacts to breeding habitat. The proposed development will not impact upon any breeding camps	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Petaurus norfolcensis (Squirrel Glider)	Vulnerable	-	Low	Not present. The species Inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas. The species diet consists of Acacia gum, eucalypt sap, nectar, honeydew and manna, with invertebrates and pollen providing protein. Vegetation on the Subject Property was not conducive with the species requirements as it was sparsely vegetated and highly modified.	Not present. The species requires abundant tree hollows for refuge and nest sites. No such habitat was present within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Pseudomys novaehollandiae (New Holland Mouse)	-	Vulnerable	Low	Not present. Species is known to inhabit open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes. Vegetation on the Subject Property was not conducive with the species requirements, it was is sparse and highly modified.	Not present. The species is known to inhabit open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes. It breeds in burrows. No such habitat was identified within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Ptilinopus regina (Rose-crowned Fruit-Dove)	Vulnerable	-	Potential	Present. Rose-crowned Fruit-doves occur mainly in sub-tropical and dry rainforest and occasionally in moist eucalypt forest and swamp forest, where fruit is plentiful. Vegetation within the Subject Property is considered sub optimal for foraging, as it is sparse and highly modified with limited fruit available.	Not present. The species nest in rainforests with dense growth vines. The nest is a frail loosely woven cup of twigs and tendrils. No nests were detected within the Subject Property.	Negligible, minimal anticipated net loss of suboptimal foraging habitat. No anticipated net loss of breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Ptilinopus superbus (Superb Fruit-dove)	Vulnerable	-	Low	Present. The species inhabits rainforest and similar closed forests where it forages high in the canopy, eating the fruits of many tree species such as figs and palms. It may also forage in eucalypt or acacia woodland where there are fruit-bearing trees. Vegetation within the Subject Property is considered sub optimal for foraging, it is spars, open and highly modified with limited fruit available.	Not present. The nest is a structure of fine interlocked forked twigs, giving a stronger structure than its flimsy appearance would suggest, and is usually 5-30m up in rainforest and rainforest edge tree and shrub species. No such habitat exists within the Subject Property and no nests were identified.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Rostratula australis (Australian Painted Snipe)	Endangered	Endangered	Low	Not present. Species forges on fringes of swamps, dams and other aquatic features. No such habitat exists within the Subject Property.	Not present. The species usually remains among the cover of wetland vegetation while foraging No such habitat exists within the Subject Property.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Saccolaimus flaviventris (Yellow-bellied Sheathtail-bat)	Vulnerable	-	Low	Present. This species forages for small, flying insects. The species flies high and fast over the forest canopy, but lower in more open country. Prey species may occur within the Subject Property however, due to the highly urbanised landscape of the property, it is unlikely that the Subject Property would be utilised by this species.	Not present. Species roosts in trees hollows and dilapidated buildings. No such habitat exists within the Subject Property	Negligible, no anticipated net loss of foraging or breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Scoteanax rueppellii (Greater Broad-nose bat)	Vulnerable	-	Low	Not present. Species Forages after sunset, flying slowly and directly along creek and river corridors at an altitude of 3 - 6 m. No such habitat exists within the Subject Property.	Not present. Species roosts in trees hollows and dilapidated buildings. No such habitat exists within the Subject Property	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Thalassarche chrysostoma (Grey-headed Albatross)	-	Endangered	Low	Not present. species forages as sea.	Not present. Species breeds on subantarctic islands.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Thalassarche melanophris (Back-browed Albatross)	Vulnerable	Vulnerable	Low	Not present. species forages as sea.	Not present. Species breeds on subantarctic islands.	Negligible, no anticipated net loss of foraging or breeding habitat.	No
Tyto novaehollandiae Masked Owl)	Vulnerable	-	Potential	Present. Lives in dry eucalypt forests and woodlands from sea level to 1100m. The species often hunts along the edges of forests, including roadsides. Its diet consists of tree-dwelling and ground mammals, especially rats. Potential prey items may occur within the Subject Property though it is sparse, and is therefore considered suboptimal for this owl.	Not present. This species nests in large hollows. No hollows were identified within the Subject Property.	Negligible impact to foraging habitat. A small area of suboptimal foraging habitat will be removed to accommodate the proposed development. Potential foraging habitat will remain within the Subject Property and adjoining areas. Negligible, no anticipated net loss of breeding habitat.	No

Species	BC Act	EPBC Act	Likelihood of Occurrence	Foraging Habitat Present Within the Subject Property	Breeding Habitat Present Within the Subject Property	Anticipated Impact	Further Impact Assessment Required?
Varanus rosenbergi (Rosenburg's Goanna)	Vulnerable	-	Low	Present. Species is found in heath, open forest and woodland and associated with termites. The species feeds on carrion, birds, eggs, reptiles and small mammals. Potential prey items may occur within the Subject Property. However, the Subject Property is not conducive with the species habitat requirements, the Subject Property lacks termite mounds, bird nests and sheltering structures. The species is unlikely occur.	Not present. The species lays up to 14 eggs in a termite mound; the hatchlings dig themselves out of the mounds. No such habitat exists within the Subject Property.	Negligible, no anticipated impact to foraging or breeding habitat.	No
Vespadelus troughtoni (Eastern Cave Bat)	Vulnerable	-	Potential	Potentially present. Little is understood of its feeding or breeding requirements or behaviour. Species roosts in caves that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded roosting in disused mine workings, occasionally in colonies of up to 500 individuals. Given the highly modified, sparse nature of vegetation surrounding the Subject Property and absence of roosting habitat, the species is unlikely to occur.	Not present, the species roosts in caves. No such habitat exists within the Subject property.	Negligible, no anticipated impact to foraging or breeding habitat.	No

4.2.1 Migratory Fauna Species

The likelihood of occurrence of threatened migratory fauna species within or around the Subject Property is presented in **Table 9**. It was deemed that the proposed works will have no significant impact on these species; therefore, a Referral to the Commonwealth pursuant to the EPBC Act is not required.

Table 9. Assessment of likely occurrence of threatened migratory fauna species within the Subject Property

Species	BC Act	EPBC Act	Likelihood of Occurrence	Required foraging habitat and presence within the Subject Property	Required breeding habitat and presence within the Subject Property	Further Impact Assessment Required?
Apus pacificus (Fork-tailed Swift)	-	Migratory	Low	Species primarily feeds on insects caught in flight. No impact is expected to this species as a result of the proposed development.	This species does not breed in Australia	No
Cuculus optatus (Oriental Cuckoo)	-	Migratory	Low	This species is found primarily in monsoon forest, rainforest edges, and leafy trees in paddocks. No such foraging habitat occurs within the Subject Property.	This species does not breed in Australia.	No
Hirundapus caudacutus (White-throated Needletail)	-	Migratory; Vulnerable	Low	This species is primarily aerial and are mostly recorded above wooded areas. The Subject Property contains minimal tree species and is unlikely to provide suitable foraging habitat for this species.	This species does not breed in Australia.	No
Limosa lapponica (Bar-tailed Godwit)	-	Migratory	Low	This species usually forages near the edge of water or in shallow water, mainly in tidal estuaries and harbours. No such habitat occurs within the Subject Property.	This species does not breed in Australia	No
Numenius madagascariensis (Eastern Curlew)	-	Migratory Critically Endangered	Low	This species feeds on crabs and molluscs in intertidal mudflats. No such habitat occurs within the Subject Property.	This species does not breed in Australia	No
Thalasseus bergii (Crested Tern)	-	Migratory	Low	Species feeds at sea. No such habitat occurs within the Subject Property.	Species breeds on small offshore islands. No such habitat occurs within the Subject Property.	No
Xenus cinereus (*Terek Sandpiper*)	Vulnerable	Migratory	Low	Species forages in the open, on soft wet intertidal mudflats or in sheltered estuaries, embayment's, harbours or lagoons. No such habitat occurs within the Subject Property.	This species does not breed in Australia	No

5. Impact Summary

5.1 Vegetation

The Subject Site is primarily situated on areas of urban exotic/native vegetation with some existing, highly modified Central Coast Escarpment Moist Forest. Approximately 300m^2 of urban exotic/native vegetation and 287m^2 of Central Coast Escarpment Moist Forest will be impacted. Six (6) native and two (2) exotic trees will require removal including:

- Five (5) *Syncarpia* glomulifera (Turpentine);
- One (1) *Eucalyptus botryoides* (Bangalay);
- One (1) *Fraxinus griffithii* (Himalayan ash); and
- One (1) *Acer palmatum* (Japanese maple).

No hollow bearing trees will be removed to facilitate the proposed development.

6. Recommendations

6.1 Impact Mitigation and Minimisation Recommendations

This section of the report details recommended efforts to avoid and minimise impacts on biodiversity values associated with the proposed development. Measures to be implemented before, during, and post construction are detailed in **Table 10.**

Table 10. Measures to be implemented before, during and after construction to avoid and minimise the impacts of the proposed development

Action	Outcome	Timing	Responsibility
Project Location, Design and Planning	The design of the proposed development has been predominately situated on areas of urban exotic/native vegetation. Narla are satisfied that the position of the proposed development will have minimal potential impacts on biodiversity values, provided the following mitigation measures are followed.	Pre-construction phase	Proponent
Assigning a Project Ecologist for vegetation clearing	Prior to construction, the applicant should commission the services of a qualified and experienced Ecologist (minimum 3 years' experience) with a minimum tertiary degree in Science, Conservation, Biology, Ecology, Natural Resource Management, Environmental Science or Environmental Management. The Ecologist must be licensed with a current Department of Primary Industries Animal Research Authority permit and New South Wales Scientific License issued under the BC Act	Prior to and during vegetation clearance works	Proponent Project Ecologist
Tree Protections	Australian Standard 4970 (2009) Protection of Trees on Development Sites (AS-4970) outlines that a Tree Protection Zone (TPZ) is the principal means of protecting trees on construction sites. It is an area isolated from construction disturbance so that the tree remains viable. Ideally, works should be avoided within the TPZ. A Minor Encroachment is less than 10% of the TPZ and is outside the structural root zone (SRZ). A Minor Encroachment is considered acceptable by AS-4970 when it is compensated for elsewhere and contiguous within the TPZ. A Major Encroachment is greater than 10% of the TPZ or inside the SRZ. Major Encroachments generally require root investigations undertaken by non-destructive methods or the use of tree sensitive construction methods.	Pre-construction phase	Proponent Arborist

Action	Outcome	Timing	Responsibility
Biodiversity Management Plan	As the Subject Property is entirely mapped as containing land identified as 'Biodiversity' on the PLEP Terrestrial Biodiversity Map, A Biodiversity Management Plan (BMP) has been prepared to accompany the proposed DA to detail the mitigation and management of all biodiversity values within the Subject Property (Narla Environmental 2020).	Pre- and post-construction phase	Proponent
Landscaping	Landscaping should be completed as per the Landscaping Plan (Landscape Architects (2020) (**Appendix C**). If additional plants are required, only locally significant species representative of Central Coast Escarpment Moist Forest (OEH 2014) should be planted. No priority weeds for the Greater Sydney region or other environmental weeds should be planted within the Subject Property.	Construction phase	Proponent Construction Contractor
Erosion and Sedimentation	Appropriate erosion and sediment control must be erected and maintained at all times during construction in order to avoid the potential of incurring indirect impacts on biodiversity values. As a minimum, such measures should comply with the relevant industry guidelines such as 'the Blue Book' (Landcom 2004).	Construction phase	Proponent Construction Contractor
Storage and Stockpiling (Soil and Materials)	Allocate all storage, stockpile, and laydown sites away from any vegetation that is planned to be retained. Avoid importing any soil from outside the site as this can introduce weeds and pathogens to the site in order to avoid the potential of incurring indirect impacts on biodiversity values.	Construction phase	Construction Contractors
Weed Eradication and Continued Suppression	Three (3) priority weeds were identified during the site assessment and are to be completely removed from the Subject Property: ▪ *Asparagus aethiopicus* (Ground Asparagus); ▪ *Asparagus asparagoides* (Bridal Creeper); and ▪ *Senecio madagascariensis* (Fireweed).	Construction phase Post-construction phase	Proponent Construction Contractor
Erection of temporary fencing	Temporary fencing should be erected around retained native vegetation that may incur indirect impacts on biodiversity values due to the construction works. This will ensure such vegetation is not impacted by the proposed development.	Construction Phase	Proponent Construction Contractor

Action	Outcome	Timing	Responsibility
Stormwater	The proposed development is unlikely to result in significant changes to local storm-water runoff so it is expected there will be no exacerbated impact on native species of flora and fauna.	Post-construction phase	Proponent Construction Architect
Sewerage	All sewerage produced on site will be contained in an appropriate sewerage system. Containing all sewerage produced on site within a certified sewerage system will eliminate any adverse effects to the local ecology. The proposed sewer line is to avoid tree roots and tree protection zones.	Post-construction phase	Proponent

7. Conclusion

This assessment indicates that the relevant biodiversity conservation provisions of the Environmental Planning and Assessment Act 1979 and the relevant provisions of the PLEP 2014 and the PDCP 2014 have been fulfilled. Narla are satisfied that the proposed development has been appropriately located within the area identified as having least ecological impact. No threatened ecological communities, fauna or flora species or populations are expected to be significantly impacted as a result of the proposed DA.

In summary, the proposed development will require the removal of 300m^2 of urban exotic/native vegetation and 287m^2 of Central Coast Escarpment Moist Forest. Six (6) native trees will need to be removed to facilitate the proposed development. If the appropriate recommendations in this report are followed, the proposed DA will have minimal ecological impacts.

8. References

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9. Appendices

Appendix A. Flora species identified within the Subject Property

Appendix B. Fauna species identified within and surrounding the Subject Property

Appendix C. Landscape Plan (Landscape Architects 2020)

Appendix A. Flora species identified within the Subject Property

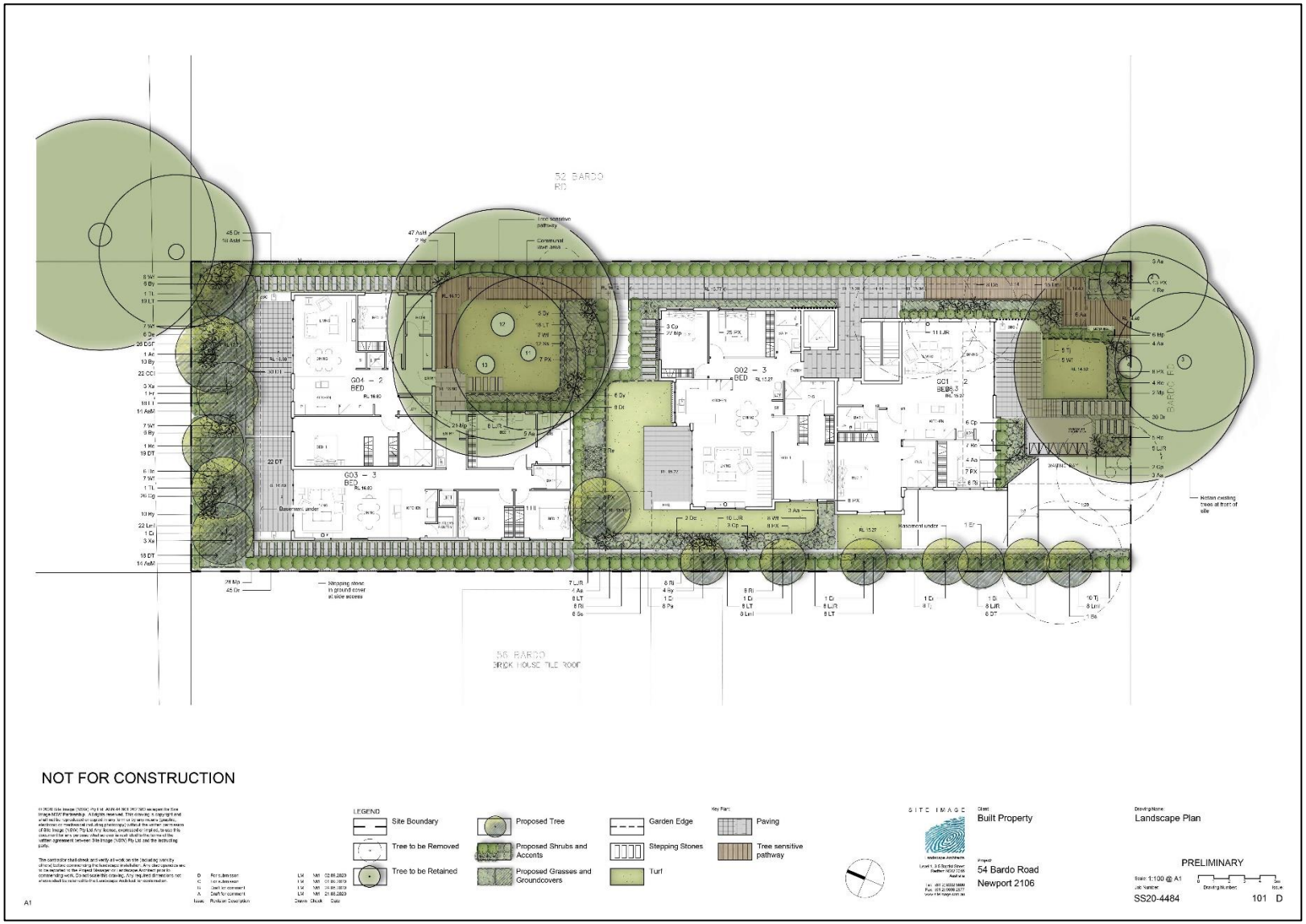
Scientific Name	Canopy	Mid-Story	Ground
*Acer palmatum**	X		
*Anredera cordifolia **			x
*Asparagus asparagoides **			X
*Asparagus aethiopicus **			x
Banksia ericifolia		x	
Banksia serrata		x	
*Bidens pilosa **			X
Breynia oblongifolia		x	
*Brugmansia suaveolens**	X		
Callistemon sp.		X	
*Chlorophytum comosum **			x
*Cinnamomum camphora **		x	
Commelina cyanea			x
Cyperus gracilis			x
Dianella caerulea			x
*Eharta erecta **			x
Eucalyptus botryoides	X		
Eucalyptus crebra	x		
Eucalyptus punctata	x		
*Euphorbia hirta **			x
*Fraxinus griffithii**	X		
*Hedera helix **			x
*Ipomoea indica **			X
*Ligustrum sinense **		x	
Musa sp. *			x
Ochna serrulata		x	
Oxalis sp.		x	
*Pennisetum clandestinum **			X
Sansevieria sp. *			x
*Senecio madagascariensis **			x
*Sida rhombifolia **			x
*Sonchus oleraceus**			X
Strelitzia sp. *			X
*Syagrus romanzoffiana**	x		
Syncarpia glomulifera	x		x
*Tradescantia fluminensis **			x

** Denotes exotic species*

Appendix B. Fauna species identified within and surrounding the Subject Property

Class	Scientific Name	Common Name	Status
Aves	*Cacatua galerita*	Sulphur-crested Cockatoo	Protected
	Chroicocephalus novaehollandiae	Silver Gull	
	Cracticus tibicen	Australian Magpie	
	Manorina melanocephala	Noisy Miner	
	Ocyphaps lophotes	Crested Pigeon	
	Strepera graculina	Pied currawong	
	Trichoglossus moluccanus	Rainbow Lorikeet	

Appendix C. Landscape Plan (Landscape Architects 2020)



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