Level 3 101 Sussex Street
Sydney NSW 200(
T: (02) 9259 3800

19 November 2021

Our ref: 20SYD - 17572

Secretary,
NSW Department of Planning, Industry and Environment
4 Parramatta Square,
12 Darcy Street,
Parramatta NSW 2150

Dear Secretary,

Re: North Sydney Public School – Biodiversity Development Assessment Report Waiver

Eco Logical Australia Pty Ltd (ELA) was engaged by School Infrastructure NSW to provide a Biodiversity Development Assessment Report (BDAR) for the proposed upgrades to North Sydney Public School at 182 Pacific Highway, North Sydney NSW 2060 (Lot 1 DP 183591 and Lot 1 DP 184559) ('the subject land'). The proposed upgrade is to be assessed as a State Significant Development (SSD) by the Department of Planning, Industry and Environment (DPIE) under application number SSD-11869481.

This SSDA seeks consent for alterations and additions to the existing North Sydney Public School. The proposal entails:

- Demolition of the existing hall (building B), haven building (building C) and 6 temporary buildings;
- Construction of a three storey building comprising:
  - staff administration rooms;
  - 16 homebases
  - a new library;
  - hall;
  - out of school hours care facilities;
  - covered outdoor learning area;
  - bicycle parking and end of trip facilities for staff; and
  - services, amenities and access.
- New entry gate and forecourt from Bay Road;
- Internal refurbishment of building G ground floor from the existing library to 3 homebases;
- Capacity for an increase in student numbers from 869 to 1,012; and
- Associated tree removal, landscaping and excavation.

The proposal maintains:

- The gates and fence of former Crows Nest House including the entrance from Pacific Highway and Bay Road;
- Existing gate along McHatton Street;
- The outdoor play area to the east of Building A;
- Existing covered outdoor learning area adjacent to Building A;
- The basketball courts and staff carpark in the western portion of the site;
- The significant tree planting on all school boundaries;
- Buildings A, D and F noting minor internal refurbishments are being undertaken outside of the SSDA scope of work (exempt development) to improve student amenities and canteen; and
- Building G noting ground floor internal refurbishment is proposed in the SSDA.

The Planning Secretary's Environmental Assessment Requirements (SEARs), issued on 24 December 2020, state the following regarding Biodiversity:

"11. Biodiversity

- *Provide a Biodiversity Development Assessment Report (BDAR), that assesses the biodiversity impacts of the proposed development in accordance with the requirements of the Biodiversity Conservation Act 2016, Biodiversity Conservation Regulation 2017 and Biodiversity Assessment Method, except where a BDAR waiver has been issued in relation to the development or the development is located on biodiversity certified land.*
- *Where a BDAR is not required, because a BDAR waiver has been issued, in relation to the development, provide:*
  - *a copy of the BDAR waiver and demonstrate that the proposed development is consistent with that covered in BDAR waiver.*
  - *an assessment of flora and fauna impacts where significant vegetation or flora and fauna values would be affected by the proposed development."*

ELA ecologist Carolina Mora conducted a field survey of the subject land for four person hours on 6 April 2021 with a focus on the following:

- Validation of existing vegetation mapping, determining type, condition and extent within the development site
- Threatened flora and fauna habitat assessment, including spatially recording important habitat features, such as, hollow bearing trees, rocky outcrops, deep leaf litter, or waterways
- Diurnal inspection of human-made structures for microchiropteran bats (microbats) or signs of suitable habitat for microbats
- Opportunistic fauna sightings.

Field survey and subsequent assessment of potential impacts to biodiversity values and concluded that the development would not have a significant impact on biodiversity values. Nor is the site identified on the Biodiversity Values Map (accessed 21 October 2021). Furthermore, a referral to the Commonwealth is not recommended for the proposed development.

The attached tables describe the biodiversity values and impact in accordance with the NSW Department of Planning & Environment's 2018 *Biodiversity development assessment report waiver determinations for SSD and SSI applications fact sheet*.

If further information is required, please contact me on 0405 910 839.

Regards,

David Bonjer

Principal Consultant

Biodiversity Development Assessment Report waiver request information

The information requirements for a BDAR waiver request, as outlined in the NSW Department of Planning and Environment's Guidelines, are provided in Table 1 and Table 2.

Table 1: BDAR waiver request information requirements

Requirement	Information
Administration	Proponent: Department of Education Project ID: SSD-11869481 Progress: Prepare EIS Completed by: Carolina Mora – Ecologist (Eco Logical Australia), B.Sc. (Advanced, Honours Class I)
Site Details	Street address: 182 Pacific Highway, North Sydney NSW 2060 Lot and DP: Lot 1 DP 183591, Lot 1 DP 184559 Local government area (LGA): North Sydney Council. The site is currently zoned as SP2: Infrastructure under the North Sydney Local Environmental Plan (LEP) 2013. Existing development site: The site is approximately 2 ha comprising the grounds of North Sydney Public School, including buildings, demountables, playgrounds and carparks. Vegetation within the development site is limited to a mix of planted native and exotic plants, typical of a public school ground. Under the North Sydney Local Environmental Plan (LEP) 2013, the lot does not have a minimum lot size and is zoned as SP2: Infrastructure. The development site is not mapped under the NSW Government Biodiversity Values Map (accessed 22 October 2021). A location map, including lot boundary ('subject land') and area subject to direct impacts ('development site'), is presented in Figure 1.
Proposed Development	This SSDA seeks consent for alterations and additions to the existing North Sydney Public School. The proposal entails: • Demolition of the existing hall (building B), haven building (building C) and 6 temporary buildings; • Construction of a three-storey building comprising: ○ staff administration rooms; ○ 16 homebases ○ a new library; ○ hall; ○ out of school hours care facilities; ○ covered outdoor learning area; ○ bicycle parking and end of trip facilities for staff; and ○ services, amenities and access. ○ New entry gate and forecourt from Bay Road; ○ Internal refurbishment of building G ground floor from the existing library to 3 homebases; ○ Capacity for an increase in student numbers from 869 to 1,012; and ○ Associated tree removal, landscaping and excavation. The proposal maintains: ▪ The gates and fence of former Crows Nest House including the entrance from Pacific Highway and Bay Road; ▪ Existing gate along McHatton Street;

Requirement	Information
	▪ The outdoor play area to the east of Building A; ▪ Existing covered outdoor learning area adjacent to Building A; ▪ The basketball courts and staff carpark in the western portion of the site; ▪ The significant tree planting on all school boundaries; ▪ Buildings A, D and F noting minor internal refurbishments are being undertaken outside of the SSDA scope of work (exempt development) to improve student amenities and canteen; and ▪ Building G noting ground floor internal refurbishment is proposed in the SSDA. The ground floor plan is presented in Figure 2.

Figure 1: Location of the proposed works

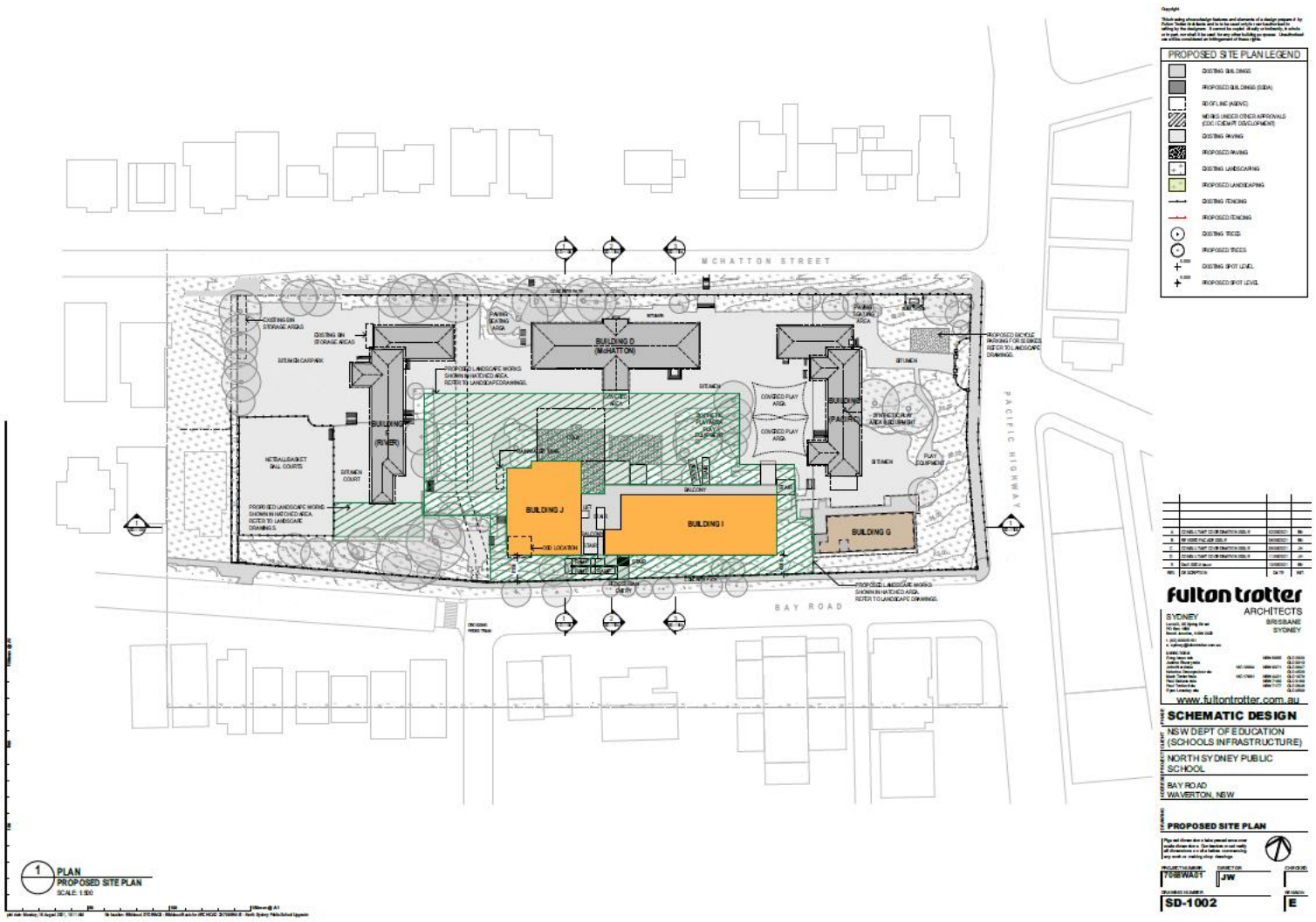

Figure 2: Ground level plan of proposed development (Fulton Trotter, 2021)

Table 2: Criteria to assess biodiversity under the BC Act and BC Regulation

Biodiversity Value	Meaning	Relevant	Discussion of values within the site
Biodiversity Conservation Regulation (Clause 1.4)			
a) Threatened Species Abundance	The occurrence and abundance of threatened species or threatened ecological communities, or their habitat, at a particular site.	N/A	No threatened ecological communities have been previously mapped in the subject land nor were any observed within the subject land during field survey (Figure 3). 0.13 ha of planted native/ exotic vegetation will be removed. Individual trees identified for removal are described in the Arborist Report. There are no BioNet (Atlas of NSW Wildlife) records of flora or fauna species previously recorded within the subject land (Figure 8). A list of flora and fauna species identified during field survey is presented in Appendix A. An assessment of the likelihood of occurrence of threatened flora and fauna species within the development site is shown in Appendix B. No threatened fauna species were observed within the site during the survey. No habitat features associated with threatened fauna species (such as hollow bearing trees, deep leaf litter or rocks) or signs of use by threatened fauna species, (such as scats, tracks or scratches) were identified within the development site during survey. Two hollow-bearing trees were identified along the northern boundary of the subject land, however these would not be impacted by the proposed upgrades. The human-made structures in the development site were inspected for any obvious signs of entry / exit points for microchiropteran bats. No obvious holes were observed (Figure 6 and Figure 7). The buildings are therefore highly unlikely to contain any habitat for roosting or breeding microchiropteran bats. Further the school is operational and it is unlikely that roosting in the buildings would provide a quiet and dark enough space suitable for bats. Due to the limited amount of planted native vegetation present, the development site does not contain sufficient foraging resources to sustain any threatened fauna species. At best, plantings have the potential to provide marginal seasonal foraging habitat for the highly mobile species Grey-headed Flying-fox. The removal of this potential foraging habitat was considered in both the BC Act Test of Significance (Appendix C) and the EPBC Act Significant Impact Criteria (Appendix D). In accordance with these assessments, the proposed development would not result in a significant impact to this threatened species. No habitat was available for threatened flora species due to the high level of modification of vegetation within the site. One *Eucalyptus nicholii* (Narrow-leaved Black Peppermint), a vulnerable species under the BC Act and EPBC Act was identified within the development site

Biodiversity Value	Meaning	Relevant	Discussion of values within the site
			during survey. The development site is located outside of the normal distribution for this species, which is known from the NSW North Coast. The species is commonly planted in Sydney as an urban street tree or in gardens. The removal of this threatened species was considered in both the BC Act Test of Significance (Appendix C) and the EPBC Act Significant Impact Criteria (Appendix D). In accordance with these assessments, the proposed development would not result in a significant impact to this threatened species.
b) Vegetation Abundance	The occurrence and abundance of vegetation at a particular site.	N/A	The majority of the subject land consists of hardstand and buildings (Figure 3). The subject land did not contain any naturally occurring or remnant native vegetation. Vegetation present did not conform to any native Plant Community Types (PCTs). Vegetation within the subject land was restricted to garden beds and nature strips. Planted native and exotic tree species present within the development site included large trees, *Eucalyptus punctata* (Grey Gum) and *Melia azedarach* (White Cedar), and small trees, *Callistemon citrinus* (Crimson Bottlebrush) and *Melaleuca quinquenervia* (Broad-leaved Paperbark). Shrubs were scattered and included *Lomandra longifolia* (Spiny-headed Mat-rush) and *Anigozanthos* sp. (Kangaroo Paw). The groundcover was dominated by exotic species, *Stenotaphrum secundatum* (Buffalo Grass), *Trifolium repens* (White Clover) and *Taraxacum officinale* (Dandelion). Weed species identified within the subject land included 15 Priority Weeds listed in the Greater Sydney Strategic Weed Management Strategy 2017-2022, 2 of which are also Weeds of National Significance (Appendix A). A full list of flora species identified during field survey is presented in Appendix A.
c) Habitat Connectivity	The degree to which a particular site connects different areas of habitat of threatened species to facilitate movement of those species across their range.	N/A	Vegetation within the subject land is part of a highly fragmented urbanised landscape. The subject land does not provide any significant level of connectivity to facilitate movement of threatened species across their range.
d) Threatened Species Movement	The degree to which a particular site contributes to the movement of threatened species to maintain their lifecycle;	N/A	The subject land contains minimal vegetation which is fragmented by buildings and areas of hardstand surfaces. Movement for less mobile threatened fauna, such as mammals (not including bats), across the subject land is highly unlikely due to fencing, buildings, cleared open areas and a lack of connective vegetation. Opportunities for movement across the subject land for more mobile threatened fauna including birds and bats

Biodiversity Value	Meaning	Relevant	Discussion of values within the site
			are available, however the subject land is not considered to be significant for the movement of any threatened species to maintain their lifecycle.
e) Flight Path Integrity	The degree to which the flight paths of protected animals over a particular site are free from interference.	N/A	Given the limited vegetation within the subject land, and the absence of connectivity in the canopy, it is unlikely that the site would be a significantly important flight path for protected animals to travel between areas of habitat.
f) Water Sustainability	The degree to which water quality, water bodies and hydrological processes sustain threatened species and threatened ecological communities at a particular site.	N/A	The subject land is highly disturbed and does not contain water bodies or drainage structures that contribute to hydrological processes that sustain threatened species or ecological communities within or adjacent to the development site.
Biodiversity Conservation Act (Clause 1.5 (2))			
a) Vegetation Integrity	The degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state.	N/A	Due to previous and current land management practices, vegetation and soils within the subject land have been highly modified or disturbed and lack natural resilience. Native species – some of which are outside their natural range of distribution – have been planted within the development site as a landscape specimen in an urban environment. Other vegetation within the subject land includes opportunistic weeds and planted exotic species. Vegetation present within the subject land was not consistent with any listed PCT. Overall, vegetation within the subject land is highly modified and altered from its natural state. Therefore, the development would not compromise the vegetation integrity of the subject land.
b) Habitat Suitability	The degree to which the habitat needs of threatened species are present at the particular site.	N/A	Suitable habitat for threatened species is highly limited within the subject land. Soils within the subject land have been highly modified and provide no habitat for any threatened flora species. Inspection of human-made structures revealed no suitable habitat for threatened microbats. Due to the limited amount of planted native vegetation present, the subject land does not contain sufficient foraging resources to sustain any threatened fauna species. The removal of planted vegetation, which may provide marginal seasonal foraging habitat for the Grey-headed Flying-fox, would not result in a significant impact to the species. The development site lacks geological features, hollow bearing trees, derelict human-made structures or non-native vegetation with the potential to provide nesting or roosting habitat for any threatened fauna species. Therefore, the proposed development would not compromise habitat suitability for threatened species.

Figure 3: Validated vegetation and biodiversity values (ELA 2021)

Figure 4: Planted native/exotic vegetation within the subject land

Figure 5: Planted native/exotic vegetation within the development site

Figure 6: Human-made structures within the development site

Figure 7: Human-made structures within the development site

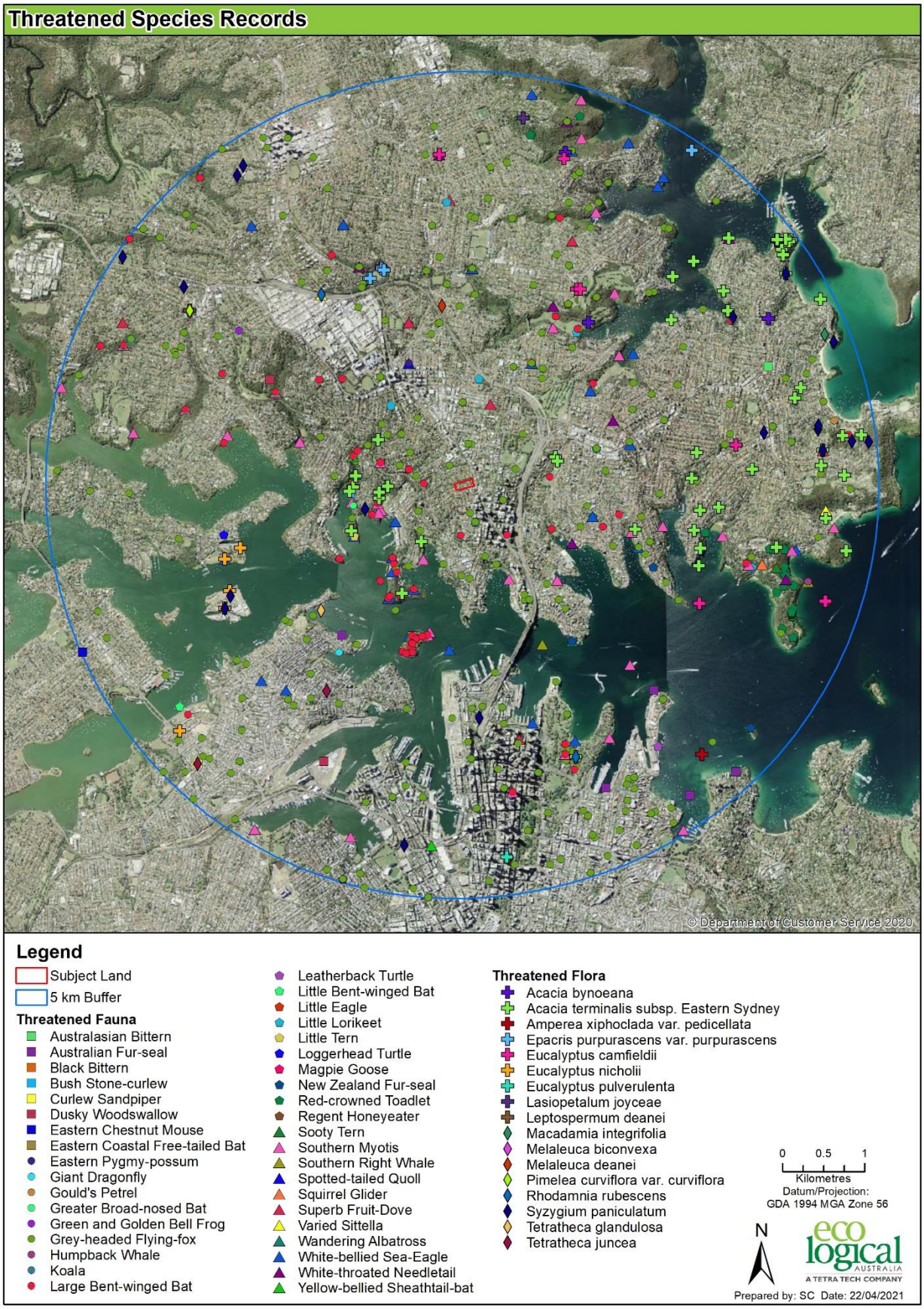

Figure 8: Threatened flora and fauna records within 5 km radius of the subject land

Appendix A – Species List

Table 3: Flora species identified during field survey

Family	Scientific name	Common name	Native (N) / Exotic (E)
Altingiaceae	*Liquidambar styraciflua*	American Sweetgum	E
Amaryllidaceae	*Agapanthus praecox*	African Lily	E
Anthericaceae	*Chlorophytum comosum*	Spider Plant	E
Apocynaceae	*Plumeria* sp.	Frangipani	E
Araliaceae	*Hedera helix*	English Ivy	E
Arecaceae	*Phoenix canariensis*	Canary Island Date Palm	E (PW***)
Asparagaceae	*Agave* sp.	Agave	E
Asparagaceae	*Asparagus asparagoides*	Bridal Creeper	E (PW*, WoNS)
Asteraceae	*Bidens pilosa*	Cobbler's Pegs	E
Asteraceae	*Conyza bonariensis*	Flax-leaf Fleabane	E
Asteraceae	*Cotula australis*	Common Cotula	N
Asteraceae	*Hypochaeris radicata*	Catsear	E
Asteraceae	*Taraxacum officinale*	Dandelion	E
Binoniaceae	*Jacaranda mimosifolia*	Jacaranda	E
Cannabaceae	*Celtis australis*		E (PW***)
Casuarinaceae	*Allocasuarina littoralis*	Black Sheoak	N
Commelinaceae	*Commelina cyanea*	Scurvy Weed	N
Convolvulaceae	*Dichondra repens*	Kidney Weed	N
Dennstaedtiaceae	*Pteridium esculentum*	Bracken	N
Elaeocarpaceae	*Elaeocarpus reticulatus*	Blueberry Ash	N
Euphorbiaceae	*Triadica sebifera*	Chinese Tallowood	E (PW***)
Fabaceae (Faboideae)	*Genista monspessulana*	Montpellior Broom	E(PW*, WoNS)
Fabaceae (Faboideae)	*Robinia pseudoacacia*	Black Locust	E (PW***)
Fabaceae (Faboideae)	*Senna pendula*		E (PW***)
Fabaceae (Faboideae)	*Trifolium repens*	White Clover	E
Haemodoraceae	*Anigozanthos* sp.	Kangaroo Paw	N (Planted)
Lamiaceae	*Salvia rosmarinus*	Rosemary	E
Lauraceae	*Cinnamomum camphora*	Camphor Laurel	E (PW***)
Lomandraceae	*Lomandra longifolia*	Spiny-headed Mat-rush	N (Planted)
Lomariopsidaceae	*Nephrolepis cordifolia*	Fishbone Fern	E
Malvaceae	*Brachychiton acerifolius*	Flame Tree	N (Planted)
Meliaceae	*Melia azedarach*	White Cedar	N (Planted)
Myrtaceae	*Angophora costata*	Smooth-barked Apple	N (Planted)

Family	Scientific name	Common name	Native (N) / Exotic (E)
Myrtaceae	*Callistemon citrinus*	Crimson Bottlebrush	N (Planted)
Myrtaceae	*Corymbia calophylla*		N (Planted)
Myrtaceae	*Corymbia citriodora*	Lemon-scented Gum	N (Planted)
Myrtaceae	*Corymbia maculata*	Spotted Gum	N (Planted)
Myrtaceae	*Eucalyptus botrioydes*	Bangalay	N (Planted)
Myrtaceae	*Eucalyptus camaldulensis*	River Gum	N (Planted)
Myrtaceae	*Eucalyptus nicholii*	Narrow-leaved Black Peppermint	N (Planted)
Myrtaceae	*Eucalyptus paniculata*	Grey Ironbark	N (Planted)
Myrtaceae	*Eucalyptus punctata*	Grey Gum	N (Planted)
Myrtaceae	*Eucalyptus* sp.		N
Myrtaceae	*Lophostemon* confertus	Brush Box	N (Planted)
Myrtaceae	*Melaleuca quinquenervia*	Broad-leaved Paperbark	N (Planted)
Myrtaceae	*Melaleuca styphelioides*	Prickly-leaved Tea Tree	N (Planted)
Myrtaceae	*Syzygium* sp.		N (Planted)
Ochnaceae	*Ochna serrulata*	Mickey Mouse Plant	E (PW***)
Oleaceae	*Fraxinus* sp.		E
Oleaceae	*Jasminum mesnyi*	Primrose Jasmine	E
Oleaceae	*Ligustrum lucidum*	Broad-leaf Privet	E (PW***)
Oleaceae	*Olea europaea* subsp. *cuspidata*	African Olive	E (PW**)
Passifloraceae	*Passiflora* sp.		E
Phormiaceae	*Dianella caerulea* var. *producta*		N (Planted)
Pinaceae	*Pinus patula*	Mexican Weeping Pine	E (PW***)
Pittosporaceae	*Bursaria spinosa* subsp. *spinosa*	Blackthorn	N (Planted)
Pittosporaceae	*Pittosporum undulatum*	Sweet Pittosporum	N (Planted)
Plantaginaceae	*Plantago lanceolata*	Plantain	E
Poaceae	*Cenchrus clandestinus*	Kikuyu	E (PW***)
Poaceae	*Ehrharta erecta*	Vasey Grass	E
Poaceae	*Eleusine tristachya*		E
Poaceae	*Stenotaphrum secundatum*	Buffalo Grass	E
Proteaceae	*Banksia integrifolia*	Coast Banksia	N (Planted)
Rosaceae	*Cotoneaster glaucophyllus*	Cotoneaster	E (PW***)
Rosaceae	*Rhaphiolepis indica*	Indian Hawthorn	E (PW***)
Rutaceae	*Citrus* spp.		E
Rutaceae	*Murraya paniculata*	Murraya	E

Family	Scientific name	Common name	Native (N) / Exotic (E)
Strelitziaceae	*Strelitzia* sp.	Bird of Paradise	E
Theaceae	*Cammellia* sp.	Camellia	E

Key: PW = Priority Weed: * State Level, ** Regional Level, *** Other Weed of Regional Concern, WoNS = Weeds of National Significance.

Table 4: Fauna species identified during field survey

Class	Scientific name	Common name	Observation Type
Aves	*Alectura lathami*	Australian Brush-turkey	Observed
Aves	*Corvus coronoides*	Australian Raven	Heard
Aves	*Cracticus tibicen*	Australian Magpie	Heard
Aves	*Manorina melanocephala*	Noisy Miner	Heard

Appendix B – Likelihood of occurrence

An assessment of likelihood of occurrence was made for threatened and migratory species identified from the database search. Five terms for the likelihood of occurrence of species are used in this report. This assessment was based on database or other records, presence or absence of suitable habitat, features of the proposal site, results of the site inspection and professional judgement. Some Migratory or Marine species identified from the Commonwealth database search have been excluded from the assessment, due to lack of habitat. The terms for likelihood of occurrence are defined below:

- "known" = the species was or has been observed on the site
- "likely" = a medium to high probability that a species uses the site
- "potential" = suitable habitat for a species occurs on the site, but there is insufficient information to categorise the species as likely to occur, or unlikely to occur
- "unlikely" = a very low to low probability that a species uses the site
- "no" = habitat on site and in the vicinity is unsuitable for the species.

A test of significance was conducted for threatened species or ecological communities that were recorded within the study area or had a higher likelihood of occurring and were not recorded during the site visit. It is noted that some threatened fauna species that are highly mobile, wide ranging and vagrant may use portions of the study area intermittently for foraging. For these fauna species, the habitat present and likely to be impacted is not considered to be important to the threatened species, particularly in relation to the amount of similar habitat remaining in the surrounding landscape. As such, a test of significance in reference to State or Commonwealth legislation was not considered necessary.

The records column refers to the number of records occurring within 5 km of the study area, as provided by the Atlas of NSW Wildlife (BioNet) and Protected Matters Search Tool database search.

Information provided in the habitat associations' column has primarily been extracted (and modified) from the Commonwealth Species Profile and Threats Database and the NSW Threatened Species Profiles.

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
FLORA							
Acacia bynoeana	Bynoe's Wattle	E1	V	Found in central eastern NSW, from the Hunter District (Morisset) south to the Southern Highlands and west to the Blue Mountains. Heath or dry sclerophyll forest on sandy soils.	0	No - suitable habitat not recorded within the development site, no local records.	No
Acacia pubescens	Downy Wattle	V	V	Restricted to the Sydney region around the Bankstown-Fairfield-Rookwood and Pitt Town area, with outliers occurring at Barden Ridge, Oakdale and Mountain Lagoon. Open woodland and forest, including Cooks River/Castlereagh Ironbark Forest, Shale/Gravel Transition Forest and Cumberland Plain Woodland. Occurs on alluviums, shales and at the intergrade between shales and sandstones.	0	No - suitable habitat not recorded within the development site, no local records.	No
Acacia terminalis subsp. *terminalis*	Sunshine Wattle	E1	E	Limited mainly to near-coastal areas from the northern shores of Sydney Harbour south to Botany Bay. Coastal scrub and dry sclerophyll woodland on sandy soils.	81	Unlikely - suitable habitat not recorded within the development site.	No
Allocasuarina glareicola	-	E1	E	Primarily restricted to the Richmond (NW Cumberland Plain) district, but with an outlier population found at Voyager Point, Liverpool. Castlereagh woodland on lateritic soil.	0	No - suitable habitat not recorded within the development site, no local records.	No
Asterolasia elegans	-	E1	E	Occurs north of Sydney, in the Baulkham Hills, Hawkesbury and Hornsby local government areas. Also likely to occur in the western part of Gosford local government area. Hawkesbury sandstone. Found in sheltered forests on mid- to lower slopes and valleys.	0	No - suitable habitat not recorded within the development site, no local records.	No
Caladenia tessellata	Thick Lip Spider Orchid	E1	V	Currently known from two disjunct areas; one population near Braidwood on the Southern Tablelands and three populations in the Wyong area on the Central Coast.	0	No - suitable habitat not recorded within the	No

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
				Grassy sclerophyll woodland on clay loam or sandy soils, or low woodland with stony soil.		development site, no local records.	
Cryptostylis hunteriana	Leafless Tongue Orchid	V	V	In NSW, recorded mainly on coastal and near coastal ranges north from Victoria to near Forster, with two isolated occurrences inland north-west of Grafton. Coastal heathlands, margins of coastal swamps and sedgelands, coastal forest, dry woodland, and lowland forest.	0	No - suitable habitat not recorded within the development site, no local records.	No
Darwinia biflora	-	V	V	Recorded in Ku-ring-gai, Hornsby, Baulkham Hills and Ryde local government areas, in an area bounded by Maroota, North Ryde, Cowan and Kellyville. Woodland, open forest or scrub-heath on the edges of weathered shale-capped ridges, where these intergrade with Hawkesbury Sandstone.	0	No - suitable habitat not recorded within the development site, no local records.	No
Epacris purpurascens var. *purpurascens*	-	V	-	Recorded from Gosford in the north, to Narrabeen in the east, Silverdale in the west and Avon Dam vicinity in the South. Sclerophyll forest, scrubs and swamps. Most habitats have a strong shale soil influence.	396	Unlikely - suitable habitat not recorded within the development site.	No
Eucalyptus camfieldii	Camfield's Stringybark	V	V	Narrow band from the Raymond Terrace area south to Waterfall. Coastal heath on shallow sandy soils overlying Hawkesbury sandstone, mostly on exposed sandy ridges.	0	No - suitable habitat not recorded within the development site, no local records.	No
Eucalyptus nicholii	Narrow-leaved Black Peppermint	V	V	New England Tablelands from Nundle to north of Tenterfield. Dry grassy woodland, on shallow soils of slopes and ridges.	5	Known – this species was identified within the development site. The development site is located outside of its normal distribution as it is known from the NSW	Yes

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
						North Coast. The species is commonly planted in Sydney as an urban street tree or in gardens.	
Genoplesium baueri	Bauer's Midge Orchid	E1	E	Has been recorded from locations between Nowra and Pittwater and may occur as far north as Port Stephens. Dry sclerophyll forest and moss gardens over sandstone. Heath and shrubby woodland to open forest on sandy or light clay soils usually over thin shales.	0	No - suitable habitat not recorded within the development site, no local records.	No
Haloragodendron lucasii	-	E1	E	Confined to a very narrow distribution on the north shore of Sydney. Dry sclerophyll forest and low open woodland on sheltered slopes near creeks, in moist sandy loam soils.	0	No - suitable habitat not recorded within the development site, no local records.	No
Lasiopetalum joyceae	-	V	V	Restricted to the Hornsby Plateau south of the Hawkesbury River, between Berrilee and Duffys Forest. Heath on lateritic to shaley ridgetops over sandstone.	10	Unlikely – the development site is located outside of its normal distribution, habitat not recorded within the development site.	No
Melaleuca biconvexa	Biconvex Paperbark	V	V	Only found in NSW, populations found in the Jervis Bay area in the south and the Gosford-Wyong area in the north. Damp places, often near streams or low-lying areas on alluvial soils.	0	No - suitable habitat not recorded within the development site, no local records.	No
Melaleuca deanei	Deane's Paperbark	V	V	Ku-ring-gai/Berowra area, Holsworthy/Wedderburn area, Springwood (in the Blue Mountains), Wollemi National Park, Yalwal (west of Nowra) and Central Coast (Hawkesbury River) areas. Heath on sandstone.	0	No - suitable habitat not recorded within the development site, no local records.	No
Persicaria elatior	Tall Knotweed	V	V	Beside streams and lakes, swamp forest or disturbed areas.	0	No - suitable habitat not recorded within the	No

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
						development site, no local records.	
Persoonia hirsuta	Hairy Geebung	E1	E	Scattered distribution around Sydney, from Singleton in the north, along the east coast to Bargo in the south and the Blue Mountains to the west. Sandy soils in dry sclerophyll open forest, woodland and heath on sandstone.	0	No - suitable habitat not recorded within the development site, no local records.	No
Pimelea curviflora var. *curviflora*	-	V	V	Confined to the coastal area of the Sydney and Illawarra regions between northern Sydney and Maroota in the north-west and Croom Reserve near Albion Park in the south. Woodland, mostly on shaley/lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes.	0	No - suitable habitat not recorded within the development site, no local records.	No
Pimelea spicata	Spiked Rice-flower	E1	E	Two disjunct areas; the Cumberland Plain (Marayong and Prospect Reservoir south to Narellan and Douglas Park) and the Illawarra (Landsdowne to Shellharbour to northern Kiama). Well-structured clay soils. *Eucalyptus moluccana* (Grey Box) communities and in areas of ironbark on the Cumberland Plain. Coast Banksia open woodland or coastal grassland in the Illawarra.	0	No - suitable habitat not recorded within the development site, no local records.	No
Prostanthera junonis	Somersby Mintbush	E1	E	Restricted to the Somersby Plateau in the Gosford and Wyong local government areas. Open forest, low woodland and open scrub on gently undulating country over weathered Hawkesbury sandstone.	0	No - suitable habitat not recorded within the development site, no local records.	No
Syzygium paniculatum	Magenta Lilly Pilly	E1	V	Only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest. Subtropical and littoral rainforest on gravels, sands, silts and clays.	20	Unlikely - suitable habitat not recorded within the development site. The development site is not located	No

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
						within the species' natural range. The species is commonly planted in Sydney, however it was not identified during survey.	
Thesium australe	Austral Toadflax	V	V	In eastern NSW it is found in very small populations scattered along the coast, and from the Northern to Southern Tablelands. Grassland on coastal headlands or grassland and grassy woodland away from the coast.	0	No - suitable habitat not recorded within the development site, no local records.	No

BC Act key: E1 = endangered, E2= endangered population, E4 = Extinct, E4A = critically endangered, V = vulnerable.

EPBC Act Key: M = migratory, Mar = marine CE = critically endangered, E = endangered, V = vulnerable, X = extinct.

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
FAUNA							
Anthochaera phrygia	Regent Honeyeater	E4A	CE	Inland slopes of south-east Australia, and less frequently in coastal areas. In NSW, most records are from the North-West Plains, North-West and South-West Slopes, Northern Tablelands, Central Tablelands and Southern Tablelands regions; also recorded in the Central Coast and Hunter Valley regions. Eucalypt woodland and open forest, wooded farmland and urban areas with mature eucalypts, and riparian forests of *Casuarina cunninghamiana* (River Oak).	0	No - suitable habitat not recorded within the development site, no local records.	No
Apus pacificus	Fork-tailed Swift	-	M	Recorded in all regions of NSW. Riparian woodland., swamps, low scrub, heathland, saltmarsh, grassland, Spinifex sandplains, open farmland and inland and coastal sand-dunes.	0	No - suitable habitat not recorded within the development site, no local records.	No
Ardea ibis	Cattle Egret	-	Marine	Widespread and common across NSW. Grasslands, wooded lands and terrestrial wetlands. Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. It has also been recorded in shrublands, heathlands and very occasionally in moist forest or rainforest. Also found in farmland, usually at the edges of forest or woodland.	0	No - suitable habitat not recorded within the development site, no local records.	No
Burhinus grallarius	Bush Stone-curlew	E1	-	In NSW, found sporadically in coastal areas, and west of the divide throughout the sheep-wheat belt. In NSW, it occurs in lowland grassy woodland and open forest.	1	Unlikely - suitable habitat not recorded within the development site.	No
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	-	In NSW, widespread along coast and inland to the southern tablelands and central western plains, with a small population	19	Unlikely - suitable habitat not recorded	No

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
				in the Riverina. Open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur.		within the development site.	
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	Recorded from Rockhampton in Qld south to Ulladulla in NSW. Largest concentrations of populations occur in the sandstone escarpments of the Sydney basin and the NSW north-west slopes. Wet and dry sclerophyll forests, Cyprus Pine dominated forest, woodland, sub-alpine woodland, edges of rainforests and sandstone outcrop country.	0	No - suitable habitat not recorded within the development site, no local records.	No
Daphoenositta chrysoptera	Varied Sittella	V		Distribution in NSW is nearly continuous from the coast to the far west. Inhabits eucalypt forests and woodlands, mallee and Acacia woodland.	1	Unlikely - suitable habitat not recorded within the development site.	No
Dasyurus maculatus (SE mainland population)	Spotted-tailed Quoll	V	E	Found on the east coast of NSW, Tasmania, eastern Victoria and north-eastern Qld. Rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline.	0	No - suitable habitat not recorded within the development site, no local records.	No
Falco hypoleucos	Grey Falcon	E1	-	Arid and semi-arid zones. In NSW, found chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. Shrubland, grassland and wooded watercourses, occasionally in open woodlands near the coast, and near wetlands.	0	No - suitable habitat not recorded within the development site, no local records.	No
Gallinago hardwickii	Latham's Snipe	-	M	Migrant to east coast of Australia, extending inland west of the Great Dividing Range in NSW. Freshwater, saline or brackish wetlands up to 2000 m above sea-level; usually freshwater swamps, flooded grasslands or heathlands.	0	No - suitable habitat not recorded within the development site, no local records.	No
Glossopsitta pusilla	Little Lorikeet	V	-	In NSW, found from the coast westward as far as Dubbo and Albury. Dry, open eucalypt forests and woodlands, including remnant woodland patches and roadside vegetation.	48	Unlikely - suitable habitat not recorded	No

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
						within the development site.	
Grantiella picta	Painted Honeyeater	V	V	Widely distributed in NSW, predominantly on the inland side of the Great Dividing Range but avoiding arid areas. Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests.	0	No - suitable habitat not recorded within the development site, no local records.	No
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	Marine	Distributed along the coastline of mainland Australia and Tasmania, extending inland along some of the larger waterways, especially in eastern Australia. Freshwater swamps, rivers, lakes, reservoirs, billabongs, saltmarsh and sewage ponds and coastal waters. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, forest and urban areas.	46	Unlikely - suitable habitat not recorded within the development site.	No
Heleioporus australiacus	Giant Burrowing Frog	V	V	South eastern NSW and Victoria, in two distinct populations: a northern population in the sandstone geology of the Sydney Basin as far south as Ulladulla, and a southern population occurring from north of Narooma through to Walhalla, Victoria. Heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based.	0	No - suitable habitat not recorded within the development site, no local records.	No
Hirundapus caudacutus	White-throated Needletail	-	M	All coastal regions of NSW, inland to the western slopes and inland plains of the Great Divide. Occur most often over open forest and rainforest, as well as heathland, and remnant vegetation in farmland.	232	Unlikely - suitable habitat not recorded within the development site.	No
Hoplocephalus bungaroides	Broad-headed Snake	E1	V	Largely confined to Triassic and Permian sandstones within the coast and ranges in an area within approximately 250 km of Sydney. Dry and wet sclerophyll forests, riverine forests, coastal heath swamps, rocky outcrops, heaths, grassy woodlands.	0	No - suitable habitat not recorded within the development site, no local records.	No

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	E1	E	Found in south-eastern NSW, east of the Great Dividing Range south from the Hawkesbury River. Heath or open forest with a heathy understorey on sandy or friable soils.	0	No - suitable habitat not recorded within the development site, no local records.	No
Lathamus discolor	Swift Parrot	E1	CE	Migrates from Tasmania to mainland in Autumn-Winter. In NSW, the species mostly occurs on the coast and south west slopes. Box-ironbark forests and woodlands.	42	Unlikely – the subject land contains, Corymbia maculata, which is listed as a key tree species in the National Recovery Plan for this species, however these trees would not be removed as part of the proposed upgrades. .	No
Litoria aurea	Green and Golden Bell Frog	E1	V	Since 1990, recorded from ~50 scattered sites within its former range in NSW, from the north coast near Brunswick Heads, south along the coast to Victoria. Records exist west to Bathurst, Tumut and the ACT region. Marshes, dams and stream-sides, particularly those containing *Typha* spp. (bullrushes) or *Eleocharis* spp. (spikerushes). Some populations occur in highly disturbed areas.	0	No - suitable habitat not recorded within the development site, no local records.	No
Lophoictinia isura	Square-tailed Kite	V	-	In NSW, it is a regular resident in the north, north-east and along the major west-flowing river systems. It is a summer breeding migrant to the south-east, including the NSW south coast. Timbered habitats including dry woodlands and open forests, particularly timbered watercourses.	1	Unlikely - suitable habitat not recorded within the development site.	No
Merops ornatus	Rainbow Bee-eater	-	Marine	Distributed across much of mainland Australia, including NSW. Open forests and woodlands, shrublands, farmland,	0	No - suitable habitat not recorded within the	No

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
				areas of human habitation, inland and coastal sand dune systems, heathland, sedgeland, vine forest and vine thicket.		development site, no local records.	
Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V	-	Found along the east coast from south Qld to southern NSW. Dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range.	10	Unlikely - lack of hollow bearing trees, which represent suitable habitat, for this species within the development site. Human-made structures within the development site do not represent suitable habitat for this species.	No
Miniopterus australis	Little Bent-winged Bat	V	-	East coast and ranges south to Wollongong in NSW. Moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub.	8	Unlikely - lack of hollow bearing trees, which represent suitable habitat, for this species within the development site. Human-made structures within the development site do not represent suitable habitat for this species.	No
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	In NSW it occurs on both sides of the Great Dividing Range, from the coast inland to Moree, Dubbo and Wagga Wagga. Rainforest, wet and dry sclerophyll forest, monsoon forest, open woodland, paperbark forests and open grassland.	204	Unlikely - lack of caves which represent primary roosting habitat for this species within the development site. Human-made structures within the	No

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
						development site do not represent suitable habitat for this species.	
Monarcha melanopsis	Black-faced Monarch	-	M	In NSW, occurs around the eastern slopes and tablelands of the Great Divide, inland to Coutts Crossing, Armidale, Widden Valley, Wollemi National Park and Wombeyan Caves. It is rarely recorded farther inland. Rainforest, open eucalypt forests, dry sclerophyll forests and woodlands, gullies in mountain areas or coastal foothills, Brigalow scrub, coastal scrub, mangroves, parks and gardens.	0	No - suitable habitat not recorded within the development site, no local records.	No
Motacilla flava	Yellow Wagtail	-	M	Regular summer migrant to mostly coastal Australia. In NSW recorded Sydney to Newcastle, the Hawkesbury and inland in the Bogan LGA. Swamp margins, sewage ponds, saltmarshes, playing fields, airfields, ploughed land, lawns.	0	No - suitable habitat not recorded within the development site, no local records.	No
Myiagra cyanoleuca	Satin Flycatcher	-	M	In NSW, widespread on and east of the Great Divide and sparsely scattered on the western slopes, with very occasional records on the western plains. Eucalypt-dominated forests, especially near wetlands watercourses, and heavily vegetated gullies.	0	No - suitable habitat not recorded within the development site, no local records.	No
Myotis macropus	Southern Myotis	V	-	In NSW, found in the coastal band. It is rarely found more than 100 km inland, except along major rivers. Foraging habitat is waterbodies (including streams, or lakes or reservoirs) and fringing areas of vegetation up to 20 m.	42	Unlikely – human-made structures within the development site do not represent suitable habitat for this species.	No
Ninox connivens	Barking Owl	V	-	Wide but sparse distribution in NSW, avoiding the most central arid regions. Core populations exist on the western slopes and plains and in some northeast coastal and escarpment forests. Woodland and open forest, including	6	Unlikely - suitable habitat not recorded within the development site.	No

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
				fragmented remnants and partly cleared farmland, wetland and riverine forest.			
Ninox strenua	Powerful Owl	V	-	In NSW, it is widely distributed throughout the eastern forests from the coast inland to tablelands, with scattered records on the western slopes and plains. Woodland, open sclerophyll forest, tall open wet forest and rainforest.	589	Unlikely – this highly mobile species may occasionally fly over the study area on feeding forays. However, more suitable habitat is available for this species beyond the development site.	No
Numenius madagascariensis	Eastern Curlew	-	CE, M	Summer migrant to Australia. Primarily coastal distribution in NSW, with some scattered inland records. Estuaries, bays, harbours, inlets and coastal lagoons, intertidal mudflats or sandflats, ocean beaches, coral reefs, rock platforms, saltmarsh, mangroves, freshwater/brackish lakes, saltworks and sewage farms.	0	No - suitable habitat not recorded within the development site, no local records.	No
Petauroides volans	Greater Glider	-	V	In Eastern Australia, it is found from the Windsor Tableland in north Queensland through to central Victoria (Wombat State Forest). Eucalypt forests and woodlands. It is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows.	0	No - suitable habitat not recorded within the development site, no local records.	No
Petaurus norfolcensis	Squirrel Glider	V	-	Widely though sparsely distributed on both sides of the Great Dividing Range in eastern Australia, from northern Qld to western Victoria. 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.	1	Unlikely - suitable habitat not recorded within the development site.	No

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
Petrogale penicillata	Brush-tailed Rock-wallaby	E1	V	In NSW they occur from the Qld border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. Rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges.	0	No - suitable habitat not recorded within the development site, no local records.	No
Phascolarctos cinereus	Koala	V	V	In NSW it mainly occurs on the central and north coasts with some populations in the west of the Great Dividing Range. There are sparse and possibly disjunct populations in the Bega District, and at several sites on the southern tablelands. Eucalypt woodlands and forests.	2	Unlikely - suitable habitat not recorded within the development site.	No
Pseudomys novaehollandiae	New Holland Mouse	-	V	Fragmented distribution across eastern NSW. Open heathlands, woodlands and forests with a heathland understorey, vegetated sand dunes.	0	No - suitable habitat not recorded within the development site, no local records.	No
Pseudophryne australis	Red-crowned Toadlet	V	-	Confined to the Sydney Basin, from Pokolbin in the north, the Nowra area to the south, and west to Mt Victoria in the Blue Mountains. Open forests, mostly on Hawkesbury and Narrabeen Sandstones. Inhabits periodically wet drainage lines below sandstone ridges that often have shale lenses or cappings.	73	Unlikely - suitable habitat not recorded within the development site.	No
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	Along the eastern coast of Australia, from Bundaberg in Qld to Melbourne in Victoria. Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.	177252	Potential – suitable foraging habitat for this species was identified within the development site and is proposed for removal.	Yes
Rhipidura rufifrons	Rufous Fantail	-	M	Coastal and near coastal districts of northern and eastern Australia, including on and east of the Great Divide in NSW.	0	No - suitable habitat not recorded within the	No

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
				Wet sclerophyll forests, subtropical and temperate rainforests. Sometimes drier sclerophyll forests and woodlands.		development site, no local records.	
Rostratula australis	Australian Painted Snipe	E1	E	In NSW most records are from the Murray-Darling Basin. Other recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. Swamps, dams and nearby marshy areas.	0	No - suitable habitat not recorded within the development site, no local records.	No
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	There are scattered records of this species across the New England Tablelands and North West Slopes. Rare visitor in late summer and autumn to south-western NSW. Almost all habitats, including wet and dry sclerophyll forest, open woodland, open country, mallee, rainforests, heathland and waterbodies.	5	Unlikely - lack of hollow bearing trees, which represent suitable habitat for this species, within the development site. Human-made structures within the development site do not represent suitable habitat for this species.	No
Scoteanax rueppellii	Greater Broad-nosed Bat	V	-	Both sides of the great divide, from the Atherton Tableland in Qld to north-eastern Victoria, mainly along river systems and gullies. In NSW it is widespread on the New England Tablelands. Woodland, moist and dry eucalypt forest and rainforest.	4	Unlikely - lack of hollow bearing trees, which represent suitable habitat for this species, within the development site. Human-made structures within the development site do not represent suitable habitat for this species.	No
BC Act key: E1 = endangered, E2= endangered population, E4 = Extinct, E4A = critically endangered, V = vulnerable.							

Scientific name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Number of Records within 5 km	Likelihood of Occurrence	Impact Assessment Required
EPBC Act Key: M = migratory, Mar = marine CE = critically endangered, E = endangered, V = vulnerable, X = extinct.							

Appendix C – *Biodiversity Conservation Act 2016* Test of Significance

Section 7.3 of the *Biodiversity Conservation Act 2016* (BC Act) requires a number of factors to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats. These factors are addressed below for the species likely to be impacted by the proposed development.

C1 *Eucalyptus nicholii* (Narrow-leaved Black Peppermint)

Eucalyptus nicholii is listed as vulnerable under the BC Act and EPBC Act. The distribution and habitat of this species are presented in Appendix B. The species was identified on the southern boundary of the development site during survey. The development site would encroach upon the tree's protection zone, therefore requiring that the tree be removed. The development site is located outside of the normal distribution for this species, which is known from the NSW North Coast. The species is commonly planted in Sydney as an urban street tree or in gardens.

BC Act	Question	Response
7.3.1 a)	In the case of a threatened species: whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction	The proposed development would remove one *Eucalyptus nicholii* individual. This development site is outside of the known distribution and habitat for the species and the species is commonly planted as an urban street tree. Therefore, it is considered unlikely that its removal would place a viable local population of the species at risk of extinction.
7.3.1 b) i	In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: 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	Not applicable
7.3.1 b) ii	In the case of an endangered ecological community or critically endangered ecological community: Whether the proposed development or activity 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
7.3.1 c) i	In relation to the habitat of a threatened species or ecological community: The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity	The proposed development would remove one planted *Eucalyptus nicholii* individual. The development site does not contain habitat for the species (grassy woodland on shallow soils of slopes and ridges) and is located significantly outside of the known distribution (northern NSW).
7.3.1 c) ii	In relation to the habitat of a threatened species or ecological community: Whether an area of habitat is likely to become fragmented or isolated from other	The proposed development would remove one planted *Eucalyptus nicholii* individual. The proposed development would not result in an area of habitat becoming fragments or isolated from another area of habitat.

BC Act	Question	Response
	areas of habitat as a result of the proposed development or activity	
7.3.1 c) iii	In relation to the habitat of a threatened species or ecological community: The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.	The proposed development would remove one planted *Eucalyptus nicholii* individual. The development site does not contain habitat for the species (grassy woodland on shallow soils of slopes and ridges) and is located significantly outside of the known distribution (northern NSW). Therefore, the proposed development is unlikely to result in impacts to the long-term survival of the species.
7.3.1 d)	Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).	The proposed development would not directly or indirectly impact any declared area of outstanding biodiversity value.
7.3.1 e)	Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.	The clearing of native vegetation is one key threatening process relevant to the proposed development. The proposed development is unlikely to contribute significantly to this process given that only 0.13 ha of planted native/exotic vegetation is proposed to be removed.
Conclusion	Is there likely to be a significant impact?	No. The proposed removal of one planted *Eucalyptus nicholii* individual is unlikely to have a significant impact on the species for the following reasons: • The development site does not contain habitat for the species (grassy woodland on shallow soils of slopes and ridges). • The individual is located significantly outside of the known distribution (northern NSW) and was likely planted.

C2 *Pteropus poliocephalus* (Grey-headed Flying-fox)

The Grey-headed Flying-fox is listed as vulnerable under the BC Act and EPBC Act. The distribution and habitat of this species are presented in Appendix B. This species was not recorded on site during the survey but has been recorded within 5 km of the site. There are two Nationally Important Flying-fox Camps within 10 km of the development site in Gordon (estimated at 16,000-49,999 individuals in August 2019) and Centennial Park (counted at 32,327 individuals in November 2020). The proposed development would remove 0.13 ha of planted native/exotic vegetation –which includes species that are potential seasonal foraging habitat for this species. No breeding habitat in the form of camps would be affected by the proposed development.

BC Act	Question	Response
7.3.1 a)	In the case of a threatened species: whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction	The proposed development would affect 0.13 ha of planted native/ exotic vegetation which may provide marginal seasonal foraging opportunities (e.g., *Eucalyptus* spp.) for the species. No breeding habitat in the form of camps would be impacted as part of the proposed development. Given the presence of similar vegetation within the subject land, the loss of vegetation within the development site is unlikely to adversely affect the Grey-headed Flying-fox such that its population would be placed at risk of extinction.
7.3.1 b) i	In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: 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	Not applicable
7.3.1 b) ii	In the case of an endangered ecological community or critically endangered ecological community: Whether the proposed development or activity 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
7.3.1 c) i	In relation to the habitat of a threatened species or ecological community: The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity	Vegetation impacts would be minimal (0.13 ha). No breeding habitat would be impacted.
7.3.1 c) ii	In relation to the habitat of a threatened species or ecological community: 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	The area of potential foraging habitat to be removed forms part of highly modified and planted urban gardens which contains a mix of planted native and exotic vegetation. There is similar vegetation available immediately adjacent to the development site. The proposed development is unlikely to have an adverse impact on habitat connectivity. The species

BC Act	Question	Response
		is highly mobile and would continue to use the surrounding locality for foraging.
7.3.1 c) iii	In relation to the habitat of a threatened species or ecological community: The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.	The proposed development would affect 0.13 ha of foraging habitat for Grey-headed Flying-fox. This small area of habitat is not considered vital to the long-term survival of these species within the locality because the species is highly mobile and would be able to continue foraging in similar vegetation directly adjacent to the development site.
7.3.1 d)	Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).	The proposed development would not directly or indirectly impact any declared area of outstanding biodiversity value.
7.3.1 e)	Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.	The clearing of native vegetation is one key threatening process relevant to the proposed development. The proposed development is unlikely to contribute significantly to this process given that only 0.13 ha of planted native/ exotic vegetation is proposed to be removed. The species is highly mobile and would be able to continue foraging in similar vegetation adjacent to the development site.
Conclusion	Is there likely to be a significant impact?	No. The proposed removal of planted native and exotic vegetation is unlikely to have a significant impact on the Grey-headed Flying Fox for the following reasons: • Foraging habitat within the development site is marginal and would provide seasonal foraging opportunities, at best. • Similar foraging habitat is abundant immediately adjacent to the development site. • Breeding habitat (camps) was not identified within the study area and would not be impacted by the proposed development.

Appendix D - *Environment Protection and Biodiversity Conservation Act 1999* Significant Impact Criteria

The following assessment was prepared in accordance with the *EPBC Act Matters of National Environmental Significance: Significant Impact Guidelines 1.1*. These guidelines have been established to assist proponents to determine whether a proposed action is likely to result in a significant impact on a matter of national environmental significance.

D1 *Eucalyptus nicholii* (Narrow-leaved Black Peppermint)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	The *Eucalyptus nicholii* proposed to be removed was identified outside of the known distribution and habitat for the species and are therefore unlikely to form part of an important population. Therefore, it is considered unlikely that the proposed action would lead to a long-term decrease in the size of an important population of the species.
2)	reduce the area of occupancy of an important population	The species is distributed on the New England Tablelands from Nundle to north of Tenterfield, in northern NSW. The species is typically found in dry grassy woodland, on shallow soils of lower slopes and ridges, primarily on infertile soils derived from granite or metasedimentary rock. The tree to be removed is outside the typical area of occupancy for the species and unlikely to form part of an important population. Consequently, it is considered that the proposed development will not reduce the area of occupancy of an important population of *Eucalyptus nicholii.*
3)	fragment an existing important population into two or more populations	The *Eucalyptus nicholii* proposed to be removed was identified outside of the known distribution and habitat for the species and is therefore unlikely to form part of an important population. Consequently, it is considered unlikely that the proposed development will lead to a long-term decrease in the size of an important population of *Eucalyptus nicholii.*
4)	adversely affect habitat critical to the survival of a species	The development site does not contain suitable habitat for this species and is not located within a confirmed naturally occurring population for this species. Therefore, the development site is unlikely to be considered important or critical to the survival of the species. Consequently, it is considered that the proposed development will not adversely affect habitat critical to the survival of this species.
5)	disrupt the breeding cycle of an important population	The tree is located within a landscaped, high-traffic area of within the grounds of an operational public school where seedling recruitment is unlikely. The proposed development is unlikely to disrupt the life cycle of the

Criterion	Question	Response
		species, given that it was planted outside of its known distribution and habitat.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The development site is outside of the known distribution and habitat for *Eucalyptus nicholii.* The subject land comprised highly modified and landscaped school grounds with planted native/exotic flora. No potential habitat for the species was identified within the development site and it is considered unlikely that habitat for *Eucalyptus nicholii* is present in the site locality. Therefore the proposed development will not modify, destroy, remove or isolate or decease the availability or quality of habitat to the extent that the species is likely to decline.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	The study area is currently in a disturbed and modified condition and does not represent known habitat for this threatened species. Consequently, the proposed development is unlikely to result in the establishment of an invasive species that is harmful to *Eucalyptus nicholii*.
8)	introduce disease that may cause the species to decline, or	The proposed development is unlikely to result in the introduction of a disease that is harmful to *Eucalyptus nicholii*.
9)	interfere substantially with the recovery of the species.	There is no adopted or made Recovery Plan for this species. However, given the horticultural popularity of the species, and the location of the study area in relation to the species distribution and its habitat, it is considered that the trees to be removed was planted. Therefore, the proposed removal of *Eucalyptus nicholii* individual would not interfere substantially with the recovery of this species.
Conclusion	Is there likely to be a significant impact?	No. The proposed removal of one planted *Eucalyptus nicholii* individual is unlikely to have a significant impact on the species for the following reasons: • The development site does not contain habitat for the species (grassy woodland on shallow soils of slopes and ridges). • The individual is located significantly outside of the known distribution (northern NSW) and was likely planted.

D2 *Pteropus poliocephalus* (Grey-headed Flying-fox)

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1)	lead to a long-term decrease in the size of an important population of a species	No roosting habitat (camps) would be affected by the proposed action. However, the proposed action would remove 0.13 ha of planted native/ exotic vegetation, including marginal seasonal foraging habitat for the Grey-headed Flying-fox. The Grey-headed Flying-fox is recorded as travelling long distances (up to 20 km) on feeding forays. Given the proximity of more suitable habitat within the subject land, the removal of this potential foraging habitat would not lead to the long-term decrease in the size of an important population of Grey-headed Flying-fox.
2)	reduce the area of occupancy of an important population	The proposed action would reduce the amount of potential foraging habitat for this species by 0.13 ha. The Grey-headed Flying-fox is not known to occupy the development site in the form of a camp but may occasionally forage within the development site when feed trees are flowering. The Grey-headed Flying-fox is recorded as travelling long distances on feeding forays and would likely utilise the potential foraging habitat outside of the development site. Therefore, the proposed action would reduce the areas of occupancy by 0.13 ha of seasonal foraging habitat.
3)	fragment an existing important population into two or more populations	The proposed action would remove 0.13 ha of vegetation, including seasonal foraging habitat for the Grey-headed Flying-fox. No camps would be directly, or indirectly removed, and similar areas of foraging habitat are present directly adjacent to the development site. The species is highly mobile; therefore it is considered that the proposed action would not fragment an existing important population into two or more populations.
4)	adversely affect habitat critical to the survival of a species	The Draft Recovery Plan for the Grey-headed Flying-fox 2017 identifies 'a continuous temporal sequence of productive foraging habitats, linked by migration corridors or stopover habitats, and suitable roosting habitat within nightly commuting distance of foraging areas' as habitat critical to the survival of the species. No camps would be directly or indirectly removed by the proposed action. The proposed action would remove up to 0.13 ha of planted native/ exotic vegetation, some of which comprises seasonal foraging habitat for the Grey-headed Flying-fox. The Grey-headed Flying-fox is recorded as travelling long distances (20 km) on feeding forays and suitable habitat is available outside of the development site. Therefore, it is considered the proposed action would not adversely affect habitat critical to the survival of the species.
5)	disrupt the breeding cycle of an important population	The proposed action would remove 0.13 ha of vegetation, some of which comprises marginal seasonal foraging habitat for the Grey-headed Flying-fox. The proposed action would not disrupt the breeding cycle of the Grey-headed Flying-fox given that no camps would be removed

Criterion	Question	Response
		by the proposed action and similar areas of suitable foraging habitat are available adjacent to the development site and within the broader locality.
6)	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed action would remove 0.13 ha of vegetation, which includes seasonal foraging habitat for the Grey-headed Flying-fox. Grey-headed Flying-fox camps would not be removed or disturbed, and more suitable foraging and roosting habitat is available outside of the development site.
7)	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	The proposed action is unlikely to result in the establishment of an invasive species that is harmful to the Grey-headed Flying-fox.
8)	introduce disease that may cause the species to decline, or	Grey-headed Flying-fox are reservoirs for the Australian bat lyssavirus, Hendra Virus and Menangle virus, and can cause clinical disease and mortality in Grey-headed Flying-fox. The proposed action would not increase the incidence of this disease.
9)	interfere substantially with the recovery of the species.	A Draft National Recovery Plan for the Grey-headed Flying-fox was developed in 2017. The relatively small amount of foraging habitat to be removed would be unlikely to substantially interfere with the recovery of this species.
Conclusion	Is there likely to be a significant impact?	No. The proposed removal of planted native and exotic vegetation would be unlikely to have a significant impact on the Grey-headed Flying Fox for the following reasons: • Foraging habitat within the development site is marginal and would provide seasonal foraging opportunities, at best. • Similar foraging habitat is abundant in the locality. • Roosting habitat was not identified within the study area and would not be impacted by the proposed development.