Transport
for NSW

Biodiversity assessment report for REF

Sydenham Bus Layover

March 2024

NSW GOVERNMENT

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Executive summary

Connect Sydney, on behalf of Transport for NSW, proposes to construct a bus layover in Sydenham. Key features of the proposal include:

- Construction of a bus layover within the site at 117 Railway Road to accommodate 6 bus bays
- Provision of driver toilets and meal-room facilities
- Removal of 0.08ha of degraded vegetation
- Removal of on-street car spaces
- Provision of a noise wall along the eastern extent of the site
- Landscaping and drainage works
- Utility relocation
- Removal of 6 trees, and
- Pavement and finishing works in discrete sections of Railway Road and Burrows Avenue.

Construction is expected to commence in approximately Q2 2024 and would take around 6 months to complete.

East Coast Ecology Pty Ltd was commissioned by Hutchison Weller to prepare a Biodiversity Assessment Report, including assessments of significant impact (BC Act and EPBC Act), for the proposed activity. This Biodiversity Assessment Report forms part of the Review of Environmental Factors being prepared for the proposal and assesses the biodiversity impacts of the proposal to meet the requirements of the *Environmental Planning and Assessment Act 1979* (NSW).

To facilitate the proposal, approximately 0.08ha of vegetation will be impacted, including 0.06ha of Exotic Grassland and 0.02ha Urban Exotic/ Native vegetation that could not be assigned to a Plant Community Type.

A suite of BC Act and EPBC Act listed threatened species were assessed for their potential to be impacted by the proposal. One threatened species was considered likely to occur within the proposed area of works:

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

Assessments of significant impact under BC Act and EPBC Act were undertaken, and it was determined that no significant impact to this, or any threatened species was likely occur.

Given the nature of the proposed activity (i.e. located within a small, historically disturbed site with limited biodiversity value), opportunities to change the project design in favour of vegetation retention are limited. Laydown and storage areas will be positioned outside of native vegetation to avoid any additional impacts to native vegetation beyond the unavoidable impacts associated with the proposed activity. To further minimise and mitigate the potential impacts of the proposal on local biodiversity values, a series of measures have been identified including comprehensive pre-clearing surveys and the supervision of all vegetation/ habitat clearing. Residual impacts associated with the proposal will be assessed against the requirements of the Tree and Hollow Replacement Guideline (TfNSW, 2022c) and offset prior to the commencement of construction.

1. Introduction

1.1 The proposal

Connect Sydney, on behalf of Transport for NSW, proposes to construct a bus layover in Sydenham (**Figure 1-1**). Key features of the proposal include:

- Construction of a bus layover within the site at 117 Railway Road to accommodate 6 bus bays
- Provision of driver toilets and meal-room facilities
- Removal of 0.08ha of degraded vegetation
- Removal of on-street car spaces
- Provision of a noise wall along the eastern extent of the site
- Landscaping and drainage works
- Utility relocation
- Tree clearing, and
- Pavement and finishing works in discrete sections of Railway Road and Burrows Avenue.

Construction is expected to commence in approximately Q2 2024 and would take around 6 months to complete.

1.1.1 Assessment areas

The area that has been assessed as part of this Biodiversity Assessment Report (BAR) is referred to as the Subject Land (**Figure 1-2**) and has been defined using the detailed designs in consultation with representatives from Hutchison Weller and Connect Sydney.

This BAR including 5-Part Test and Assessment of Significance was prepared to evaluate the ecological values that occur within the Subject Land and identify how the proposed activity satisfies the relevant planning framework. This report discerns the likelihood of occurrence of any threatened entities (i.e. ecological communities and species) listed under the *Biodiversity Conservation Act 2016* (NSW) (BC Act) and the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Figure 1-1. The Proposal

Figure 1-2: The Subject Land

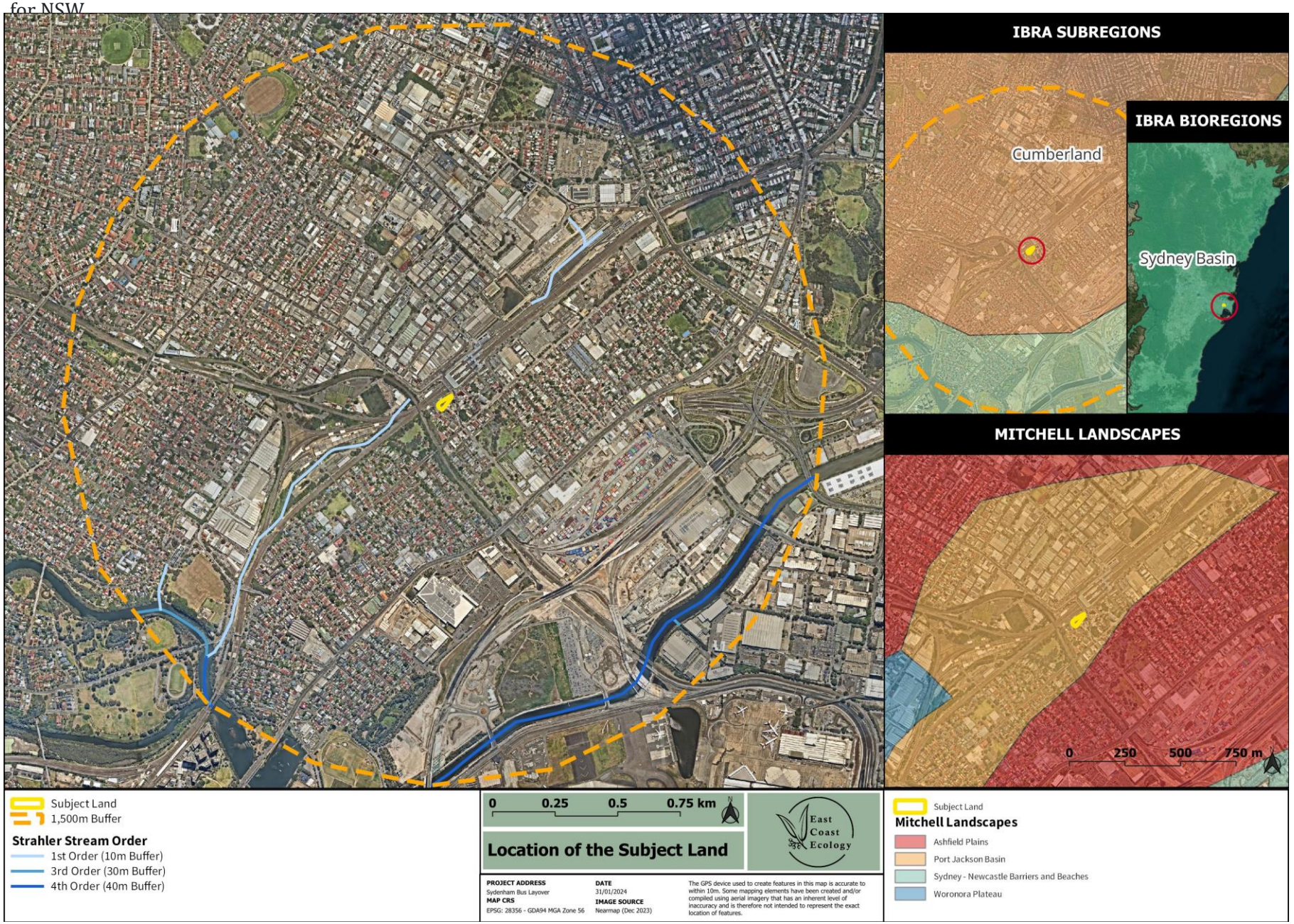

Figure 1-3: Proposal context

1.2 Legislative context

A Review of Environmental Factors (REF) is prepared to satisfy Transport for NSW (TfNSW) duties under s.5.5 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) (NSW) to "examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity" and s.5.5 in making decisions on the likely significance of any environmental impacts. This BAR forms part of the REF being prepared for the Sydenham Bus Layover and assesses the biodiversity impacts of the proposal to meet the requirements of the EP&A Act.

The BC Act requires that the significance of the impact on threatened species, populations and threatened ecological communities is assessed using the test listed in Section 7.3 of the BC Act. Similarly, Part 7A of the FM Act requires that significance assessments are undertaken in accordance with Division 12 of the FM Act. Where a significant impact is likely to occur, a species impact statement (SIS) must be prepared in accordance with the Environment Agency Head's requirements, or a biodiversity development assessment report (BDAR) must be prepared by an accredited assessor in accordance with the biodiversity assessment method (BAM) (DPE, 2020a).

In September 2015, a 'strategic assessment' approval was granted by the Federal Minister in accordance with the EPBC Act. The approval applies to TfNSW road activities being assessed under Division 5.1 (formerly Part 5) of the EP&A Act with respect to potential impacts on nationally listed threatened species, ecological communities and migratory species.

As a result, TfNSW road proposals assessed via an REF:

- Must address and consider potential impacts on EPBC Act listed threatened species, populations, ecological communities and migratory species, including application of the "avoid, minimise, mitigate and offset" hierarchy
- Do not require referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) for these matters, even if the activity is likely to have a significant impact
- Must use the Biodiversity Assessment Method (BAM) to calculate credits that would offset significant impacts on EPBC Act listed threatened species, populations, ecological communities and migratory species.

Assessments of impact significance are required for all relevant biodiversity values in accordance with the Matters of National Environmental Significance: Significant impact guidelines 1.1. Environment Protection and Biodiversity Conservation Act 1999 (DoE 2013).

1.2.1 Fisheries Management Act 1994

The Fisheries Management Act 1994 (NSW) (FM Act) aims to conserve, develop, and share the fishery resources of NSW for the benefit of present and future generations including conserving fish stocks and key fish habitats and promoting ecologically sustainable development.

The closest Key Fish Habitat (KFH) occurs within approximately 1.2km of the Subject Land, within Alexandra Canal. The proposed activity does not require works within mapped KFH, nor did marine vegetation protected under the FM Act occur within the Subject Land. As such, the activity would not impact upon KFH, nor are there any legislative requirements or notifications required under this Act.

1.2.2 Biosecurity Act 2015

The *Biosecurity Act 2015* (NSW) provides a framework for the prevention, elimination and minimisation of biosecurity risks posed by an activity as a matter of biosecurity. As defined in Part 3, section 23 of this Act, any non-conformance by an individual is defined as guilty of an offence.

Two priority weeds, *Lantana camara* and *Cestrum parqui,* were identified within the Subject Land. Suitable mitigation measures (**Section 6**) have been provided to appropriately manage weeds within the impact areas in accordance with the *Biosecurity Act 2015*.

1.2.3 Water Management Act 2000

The main objective of the *Water Management Act 2000* (NSW) (WM Act) is to manage NSW water in a sustainable and integrated manner that will benefit today's generations without compromising future generations' ability to meet their needs. Section 91E of the Act establishes an approval regime for controlled activities within waterfront land. However, clause 41 of the Water Management (General) Regulation 2018 provides an exemption for public authorities in relation to all controlled activities on waterfront land. Therefore, approval under the WM Act is not required.

2. Methods

2.1 Personnel

Table 2-1: Personnel

Name	Role	Qualifications
Alex Graham	Principal Ecologist	BSc (Biology), Grad. Dip. Bushfire Protection
Jack Tatler	Principal Ecologist	BSc (Zoology & Entomology), Hons (Zoology), PhD (Ecology)
Samantha Everett	Ecologist	BSc (Zoology)

2.2 Background research

A thorough literature review of local information relevant to the Subject Land was undertaken. Searches using NSW Wildlife Atlas (BioNet) (NSW DCCEEW, 2024a) and the Commonwealth Protected Matters Search Tool (PMST) (DCCEEW, 2024) were conducted to identify all current threatened flora and fauna, as well as migratory fauna records, within a 5km radius of the Subject Land. These data were used to assist in establishing the presence or likelihood of any ecological values as occurring on or adjacent to the Subject Land and helped inform what to look for during the site assessment.

Soil landscape and geological mapping, as well as existing vegetation mapping, was examined to assist in determining whether any threatened flora or ecological communities could be present. The following technical resources were used in the preparation of this report:

- State and Commonwealth datasets:
  - BAM Important Habitat Maps
  - Commonwealth Atlas of Groundwater Dependent Ecosystems (BOM, 2024b)
  - EPBC Protected Matters Search Tool (DCCEEW, 2024)
  - Key Fish Habitats – Sydney Metro (DPI, 2024)
  - NSW BioNet. The website of the Atlas of NSW Wildlife (NSW DCCEEW, 2024a)
  - NSW BioNet. Threatened Biodiversity Data Collection (NSW DCCEEW, 2024b)
  - NSW BioNet. Vegetation Classification System (NSW DCCEEW, 2024c)
  - NSW Government Spatial Services: Search and Discovery - Historical, Aerial and Satellite Imagery (Spatial Services, 2024a)
  - NSW Government Spatial Services: Six Maps Clip & Ship (Spatial Services, 2024b)
  - National Flying Fox Monitoring-viewer (DCCEEW, 2024)
- Vegetation and soil mapping:
  - The NSW State Vegetation Type Map (NSW DCCEEW, 2024f)
  - eSPADE v2.2.0 (DPIE, 2024)
- NSW State guidelines:
  - Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method (DPE, 2020b)
  - Threatened Species Survey and Assessment: Guidelines for developments and activities. Working Draft (DEC, 2004b)

Species from both the BioNet and PMST online searches were combined to produce a list of threatened species, populations and communities that may occur within the Subject Land (**Appendix B: Habitat suitability assessment**).

2.3 Vegetation assessment

2.3.1 Vegetation mapping

A review of the State Vegetation Type Map (NSW DCCEEW, 2024f) was used to assist in the identification of Plant Community Types (PCTs) within and surrounding the Subject Land. The PCT of 'best-fit' was determined based on the floristic descriptions within the Vegetation Classification System database (BioNet) (NSW DCCEEW, 2024c) and the vegetation integrity plot data collected from field surveys. The extent of native vegetation within the Subject Land was determined through a field assessment with the aid of a GPS-enabled tablet. Native vegetation assigned to a PCT was then stratified into vegetation zones based on its condition and structure.

2.3.2 Vegetation survey and classification

A systematic floristic vegetation survey was undertaken in accordance with BAM subsection 4.2.1.

2.3.3 Patch size

A patch is defined by the BAM (DPE, 2020a) as an area of native vegetation that occurs on the Subject Land and includes native vegetation that has a gap of less than 100m from the next area of native vegetation (or $\leq$ 30m for non-woody ecosystems). A patch may extend onto adjoining land. For each vegetation zone, the assessor must determine the patch size in hectares and assign it to one of the following classes:

- <5ha
- 5–<25ha
- 25–<100ha, and
- ≥100ha.

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

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

The patch size class of the vegetation in the Subject Land is listed in **Table 3-1**.

2.3.4 Native vegetation cover

Native vegetation cover and connectivity have been assessed in accordance with Sections 3.1.3 and 3.2 of the BAM (DPE, 2020a). The native vegetation cover was used to assess the habitat suitability of the Subject Land for threatened species. Areas of connectivity determined the extent of habitat that may facilitate the movement of threatened species across their range. A 1,500m buffer around the boundary of the Subject Land was assessed to determine the extent of native vegetation and habitat connectivity. Areas of native vegetation were confirmed using information collected during the site assessment, as well as aerial imagery and Google Street View. Areas not included as native vegetation included waterbodies, pine plantations, built areas and exposed soil.

Table 2-2: Native vegetation cover in the assessment area

Assessment area (ha)	718.39
Total area of native vegetation cover (ha)	5.85
Percentage of native vegetation cover (%)	1%
Class (0-10, >10-30, >30-70 or >70%)	0-10

2.4 Threatened species assessment

2.4.1 Habitat suitability assessment

Threatened species with potential to occur within the Subject Land and immediate surrounds were identified following review of BioNet using a 10km x 10km search area centred on the Subject Land. Soil mapping (DPIE, 2024), historical aerial imagery and topography (Google Earth) were also used to provide further context on habitat constraints for threatened species.

A field survey was undertaken to identify any habitat constraints (e.g. waterbodies, rocky areas, tree hollows), including microhabitat, present within the Subject Land and immediate surrounds. Potential habitat constraints within the broader area (1,500m buffer) were assessed using Google Earth, historical aerial imagery, soil landscape mapping (DPIE, 2024) and recent vegetation mapping (NSW DCCEEW, 2024f).

2.4.2 Targeted flora surveys

To determine whether any suitable habitat for threatened flora species was present, a survey was undertaken using parallel field traverses in accordance with the 'Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method' (DPE, 2020b).

Flora surveys were undertaken on 21st December 2023 (4-hours) by Ecologist, Samantha Everett. Any tentative threatened flora specimens were photographed, and specimens taken for identification against formal keys, or sent to the National Herbarium for expert identification.

2.4.3 Targeted fauna surveys

Threatened fauna were surveyed opportunistically however, their habitats were targeted during the parallel field traverses.

Habitat of all fauna (particularly threatened fauna) including:

- Habitat Trees including hollow-bearing trees, decorticating bark, existing nest boxes and bird nests (that could provide habitat for birds, frogs, reptiles, small mammals and microbats)
- Caves, crevices and culverts (habitat for frogs, reptiles, small mammals and microbats)
- Fauna burrows and warrens
- Termite mounds (habitat for reptiles and birds)
- Soaks and moist areas (habitat for frogs)
- Wetlands, dams and drainage lines (habitat for fish, frogs and water birds)
- Trees and shrubs supporting nest structures (habitat for birds and arboreal mammals)
- Locations of any suitable threatened fauna habitat
- Any other habitat features that may support fauna species

After carrying out a field assessment of the habitat constraints and microhabitats on the Subject Land, it was determined that the habitat is substantially degraded such that the species are unlikely to utilise the Subject (as per Section 6.4.1.17 of the BAM; DPE, 2020a).

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2.4.4 Weather Conditions

Weather conditions were taken from the nearest station (Sydney Airport AWS (066037)) in the lead up and during the field survey are outlined in Table 2-3.

Table 2-3: Weather conditions taken from the nearest weather station (Sydney Airport AWS (066037)) (BOM, 2024b)

Timing/activities	Date	Day	Temperature		Rainfall (mm)
			Min	Max	
Lead up to the survey	15/12/2023	Friday	20.6	27.3	0
	16/12/2023	Saturday	19.8	33.5	0
	17/12/2023	Sunday	19.9	27.5	0
	18/12/2023	Monday	20.9	29.2	0
	19/12/2023	Tuesday	21.7	36.2	0
	20/12/2023	Wednesday	17.4	19.4	10.8
	21/12/2023	Thursday	15.9	21.9	9.8

2.5 Aquatic surveys

Waterways and aquatic habitats were absent within the Subject Land

2.6 Limitations

Not all flora and fauna species could be directly surveyed for during the site assessment. These species include nocturnal fauna and cryptic flora with flowering times outside of the survey period. The presence of nocturnal and cryptic species was assessed based on habitat constraints and historical records.

In addition, as no aquatic threatened species, populations or ecological communities under listed under the FM Act occur within the Subject Land, aquatic surveys were not required.

3. Existing environment

The Subject Land occurs within the 'Cumberland' Interim Biogeographic Regionalisation for Australia (IBRA) Subregion, which is part of the 'Sydney Basin' IBRA Bioregion (**Figure 1-3**).

NSW (Mitchell) Landscapes (Mitchell, 2002) groups ecosystems into meso-ecosystems representing larger natural entities based on topography and geology. The naming of ecosystems and meso-ecosystems was standardised so that each name provided location information and a meaningful descriptive landscape term. The Subject Land occurs within the 'Port Jackson Basin' Mitchell Landscape Ecosystem (**Figure 1-3**). This landscape is described as deep elongated harbour with steep cliffed margins on horizontal Triassic quartz sandstone. Small pocket beaches and more extensive Quaternary estuary fill of muddy sand at the head of most tributary streams. General elevation 0 to 80m, local relief 10 to 50m. Sandstone slopes and cliffs have patches of uniform or gradational sandy soil on narrow benches and within joint crevices that support forest and woodland of Sydney Peppermint (*Eucalyptus piperita*), Smooth-barked Apple (*Angophora costata*), Red Bloodwood (*Corymbia gummifera*) and Blackbutt (*Eucalyptus pilularis*). Sheltered gullies contain some Turpentine (*Syncarpia glomulifera*), Coachwood (*Ceratopetalum apetalum*) and Water Gum (*Tristaniopsis laurina*). Estuarine sands were originally dominated by saltmarsh but have been taken over by Grey Mangrove (*Avicennia marina*) in the past century.

The Subject Land is mapped as occurring on the Birrong soil landscape (DPIE, 2024). The Birrong soil landscape is characterised by level to gently undulating alluvial floodplain draining Wianamatta Group shales. Local relief to 5 m, slopes <3%. Broad valley flats. Extensively cleared tall open-forest and woodland. The Subject Land occurs on a mostly flat landscape, gently rising from 7m above sea level (ASL) in the southern elevation to 10m ASL in the northern elevation (Google Earth). The Subject Land did not contain any areas of geological significance, such as karsts, caves, cliffs or crevices. There are no areas of geological significance within the 1,500m buffer area. The Subject Land was cleared prior to 1943 (Spatial Services, 2024a).

3.1 Plant community types and vegetation zones

The State Vegetation Type Map (NSW DCCEEW, 2023f) indicated the presence of two Plant Community Types (PCT) within 1,500m of the Subject Land:

- PCT 3963: Estuarine Reedland, and
- PCT 4028: Estuarine Swamp Oak Twig-rush Forest

Historical Imagery (Spatial Services, 2024a) indicated that the Subject Land was cleared of vegetation prior to 1943. This is supported by the absence of large trees within the Subject Land.

Native species within the Subject Land were comprised of two *Casuarina glauca*, two *Acacia longifolia* and two *Melaleuca quinquenervia.* Both *Melaleuca quinquenervia* were planted on Railway Road in 1986 (Spatial Services, 2024a), and the *Casuarina glauca* and *Acacia longifolia* have self-sown or been planted within the Subject Land in 2019 (NearMap, 2019).

These species are unlikely to reflect the original vegetation that would naturally occupy the Subject Land and are commonly planted and/or display a semi-invasive habit in disturbed sites. On this basis, the vegetation within the Subject Land was assigned to two novel community types:

- Urban Exotic/ Native, and
- Exotic Grassland.

This vegetation is displayed in **Figure 3-1**. Urban Exotic/ Native was dominated by *Cinnamomum camphora* (Camphor Laurel), *Lonicera japonica* (Japanese Honeysuckle) and *Ochna serrulate* (Mickey Mouse Plant). Exotic Grassland was dominated by *Stenotaphrum secundatum* (Buffalo Gras), *Taraxicum officinale* (Dandelion) and *Plantago lanceolata*, Although vegetation within the Subject Land could not be assigned to a PCT, this alone does not diminish the value of this vegetation as a resource for protected and threatened species occurring within the locality.

Table 3-1: Plant community types and vegetation zones including patch size and vegetation integrity (VI) score

Plant community type (PCT)	Threatened ecological community	Area (ha)	Patch size class
		Subject land	

Urban Exotic/ Native	Not Listed	0.02	<5 ha
Exotic Grassland	Not Listed	0.06	<5 ha

Figure 3-1: Plant community types and vegetation zones

3.2 Threatened ecological communities

No Threatened Ecological Communities (TEC) were identified within the Subject Land.

3.3 Groundwater dependent ecosystems

Assessment of the potential for the Subject Land to support groundwater dependent ecosystems was carried out using the Commonwealth's Bureau of Meteorology Groundwater Dependent Ecosystems Atlas (BOM, 2024a). No vegetation within or directly adjoining the Subject Land has been mapped as a Groundwater Dependent Ecosystem.

3.4 Threatened species

3.4.1 Threatened flora

Database searches revealed 10 threatened flora have potential to occur within a 5km radius of the Subject Land (**Table 3-2**; **Figure 3-2**). Species were assessed for their potential to occur within the Subject Land (**Appendix B: Habitat suitability assessment**).

Table 3-2. Threatened flora with potential to occur within the Subject Land.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Acacia bynoeana	Bynoe's Wattle	E	V	2
Acacia pubescens	Downy Wattle	V	V	5
Acacia terminalis subsp. Eastern Sydney	Sunshine wattle	E	E	9
Caladenia tessellata	Thick Lip Spider Orchid	E	V	2
Melaleuca deanei	Deane's Paperbark	V	V	10
Persoonia hirsuta	Hairy Geebung	E	E	2
Pimelea curviflora var. curviflora	-	V	V	1
Syzygium paniculatum	Magenta Lilly Pilly	E	V	26
Tetratheca juncea	Black-eyed Susan	V	V	14
Wilsonia backhousei	Narrow-leafed Wilsonia	V	-	1

V – Vulnerable; E – Endangered; EP – Endangered Population; CE – Critically Endangered

Within 1,500m of the Subject Land, no threatened flora have been recorded within the previous 100 years. As the Subject Land has been heavily modified and severely disturbed, it is considered highly unlikely that habitat for any of these species would persist, nor were any identified during a site inspection.

3.4.2 Threatened fauna

Database searches revealed 45 threatened fauna occur, or have potential to occur, within a 5km radius of the Subject Land (**Table 3-3**; **Figure 3 2**). Species were assessed for their potential to occur within the Subject Land (**Appendix B: Habitat suitability assessment**).

Table 3-3. Threatened fauna with potential to occur within the Subject Land.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Crinia tinnula	Wallum Froglet	V	-	1
Litoria aurea	Green and Golden Bell Frog	E	V	677

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Anthochaera phrygia	Regent Honeyeater	E	CE	1
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	5
Botaurus poiciloptilus	Australasian Bittern	E	E	1
Burhinus grallarius	Bush Stone-curlew	E	-	5
Calidris alba	Sanderling	V	-	3
Calidris canutus	Red Knot	P	E	11
Calidris ferruginea	Curlew Sandpiper	E	CE	161
Calidris tenuirostris	Great Knot	V	CE	12
Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	V	V	1
Charadrius leschenaultii	Greater Sand-plover	V	V	4
Charadrius mongolus	Lesser Sand-plover	V	E	4
Glossopsitta pusilla	Little Lorikeet	V	-	1
Grantiella picta	Painted Honeyeater	V	V	1
Haematopus fuliginosus	Sooty Oystercatcher	V	-	1
Haematopus longirostris	Pied Oystercatcher	E	-	8
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	-	4
Hieraaetus morphnoides	Little Eagle	V	-	1
Hirundapus caudacutus	White-throated Needletail	-	V	5
Ixobrychus flavicollis	Black Bittern	V	-	2
Limicola falcinellus	Broad-billed Sandpiper	V	-	2
Limosa limosa	Black-tailed Godwit	V	-	8
Lophoictinia isura	Square-tailed Kite	V	-	1
Neophema pulchella	Turquoise Parrot	V	-	1
Ninox strenua	Powerful Owl	V	-	45
Numenius madagascariensis	Eastern Curlew	-	CE	1
Petroica boodang	Scarlet Robin	V	-	3
Petroica phoenicea	Flame Robin	V	-	1
Ptilinopus regina	Rose-crowned Fruit-Dove	V	-	1
Ptilinopus superbus	Superb Fruit-Dove	V	-	6
Stagonopleura guttata	Diamond Firetail	V	-	1
Sternula albifrons	Little Tern	E	-	50
Xenus cinereus	Terek Sandpiper	V	-	5

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	1
Dasyurus maculatus	Spotted-tailed Quoll	V	E	1
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	5
Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V	-	1
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	34
Myotis macropus	Southern Myotis	V	-	10
Perameles nasuta	Long-nosed Bandicoot population in inner western Sydney	E	-	24
Phascolarctos cinereus	Koala	E	E	7
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	1860
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	9
Hoplocephalus bitorquatus	Pale-headed Snake	V	-	1

V – Vulnerable; E – Endangered; EP – Endangered Population; CE – Critically Endangered

No threatened fauna species were identified within the Subject Land however, this does not rule out the potential for threatened species to still exist within the Subject Land, particularly highly-mobile species. Based on the lack of habitat constraints (foraging and breeding habitats), historical records and/or the level of human-made disturbance within and directly adjoining the Subject Land, it was determined that the proposed works are not likely to significantly impact upon any threatened fauna.

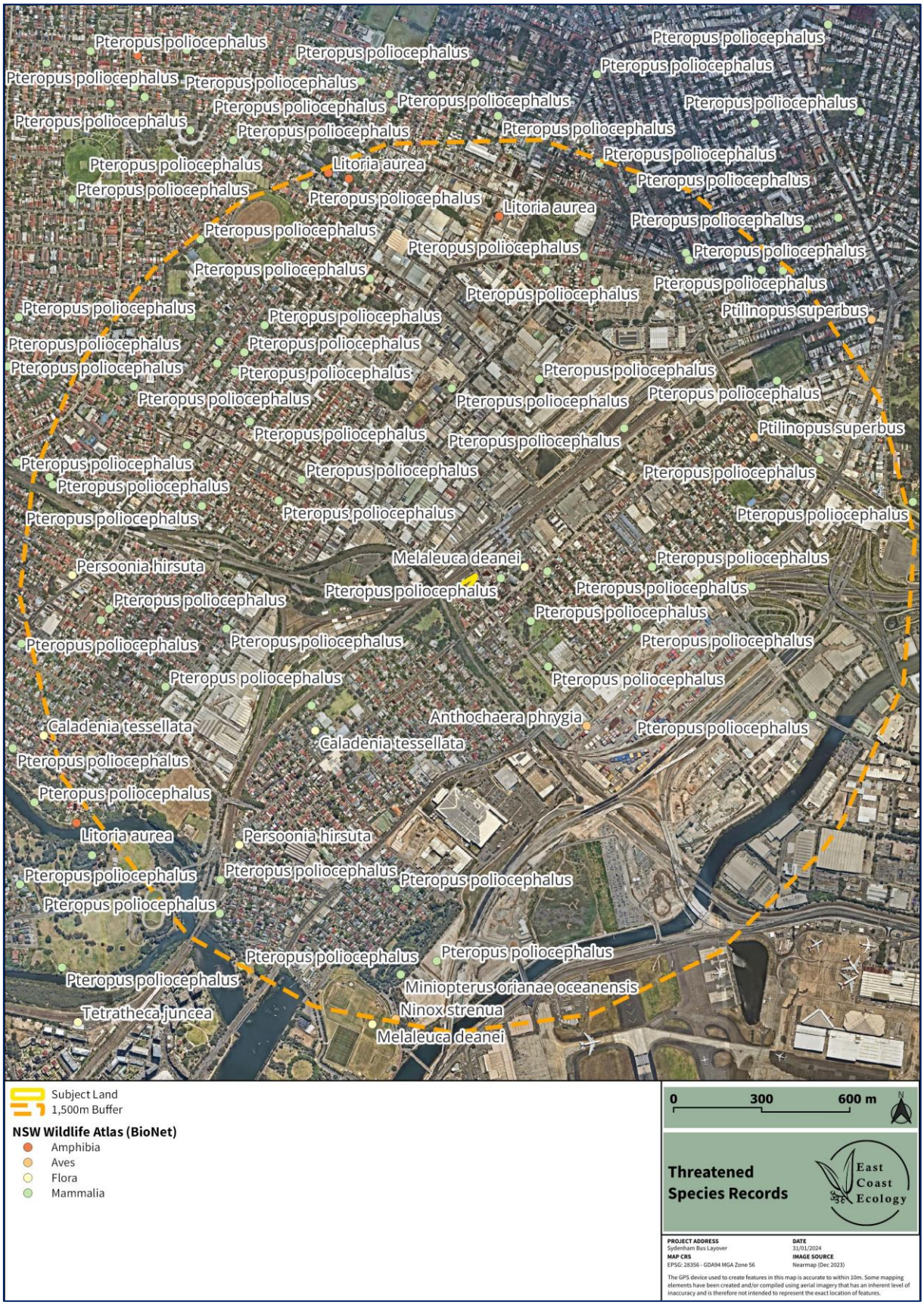

Figure 3-2: Recorded threatened species

3.5 Areas of outstanding biodiversity value

No Areas of Outstanding Biodiversity Value (AOBV) occur on the Subject Land or surrounding 1,500m buffer area. The closest AOBV, the Little penguin population in Sydney's North Harbour, occurs >15km north of the Subject Land.

3.6 Wildlife connectivity corridors

Terrestrial habitat connectivity to the Subject Land is limited, provided only by planted street trees throughout the surrounding streetscape likely to be used only by highly mobile species.

3.7 State Environmental Planning Policies

3.7.1 State Environmental Planning Policy (Resilience and Hazards) 2021

The State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP) commenced on the 1st of March 2022 and replaces the following former SEPPs:

- State Environmental Planning Policy (Coastal Management) 2018
- State Environmental Planning Policy 33 – Hazardous and Offensive Development, and
- State Environmental Planning Policy 55 – Remediation of Land.

The Subject Land is not situated within the 'Coastal Zone' therefore this SEPP does not apply.

3.7.2 State Environmental Planning Policy (Biodiversity and Conservation) 2021

Section 2.7(1) of this SEPP states that an authority to clear vegetation under this policy is not required if it is a clearing authorised under s60(O) of the Local Land Services Act 2013. Section 60(O) provides an exemption for clearing under Part 5 of the EP&A Act and therefore consent is not required under the SEPP (Biodiversity and Conservation).

The Subject Land is not located within Core Koala Habitat.

3.8 Matters of national environmental significance

Under the EPBC Act, a proponent must not take an action if that action will have, or is likely to have, a significant impact on matters protected under the EPBC Act, referred to as Matters of National Environmental Significance (MNES). The EPBC Act identifies eight MNES:

- World Heritage properties
- National Heritage places
- Wetlands of international importance (those listed under the Ramsar Convention)
- Listed threatened species and communities
- Migratory species listed under international agreements
- Great Barrier Reef Marine Park
- Commonwealth marine areas
- Nuclear actions

The Protected Matters Search Tool identified the following as potentially occurring within the Subject Land (or within the area):

- 8 Threatened Ecological Communities
- 49 threatened species
- 18 Migratory species

No MNES were identified within or adjoining the Subject Land.

4. Avoidance and minimisation

A key part of TfNSW's management of biodiversity for this proposal is the application of the 'avoid, minimise, mitigate and offset' hierarchy as follows:

1. Avoid and minimise impacts.
2. Mitigate impacts.
3. Offset impacts in accordance with TfNSW guidelines.

Section 4 and **Section 7** of the BAR demonstrates the efforts taken to avoid and minimise impacts on biodiversity values. These three approaches are listed in a descending order of best biodiversity outcomes:

- Avoid: measures taken by a proponent such as careful site selection, or actions taken through the design, planning, construction and operational phases of the development to completely prevent impacts on biodiversity values, or certain areas of biodiversity
- Minimise: a process applied throughout the development planning and design life cycle that seeks to reduce the residual impacts of development on biodiversity values
- Compensate: measures in a proposed activity to compensate for the biodiversity values lost. This can be achieved through offsets (financial or not).

Given the nature of the proposed activity (i.e. located within a small, historically disturbed site with limited biodiversity value), opportunities to change the project design in favour of vegetation retention are limited. Laydown and storage areas will be positioned outside of native vegetation to avoid any additional impacts to native vegetation beyond the unavoidable impacts associated with the proposed activity.

5. Impact assessment

5.1 Construction impacts

The proposed activity will require the removal of approximately 0.08ha of degraded vegetation. No threatened ecological communities or threatened flora will be impacted by the activity. The vegetation within the Subject Land is in poor condition, fragmented, and located within a disturbed landscape that makes potential use by threatened fauna species unlikely.

The following potential threatened species habitats will be impacted:

- Foraging habitats
  - Two *Melaleuca quinquenervia*
  - Two *Casuarina glauca*, and
  - Two *Acacia longifolia*.
  - Marginal exotic grassland foraging habitats.

No impacts to breeding habitats, aquatic habitats or GDEs will result from the proposed activity.

The proposed activity has a low potential to injure or harm wildlife from construction, subject to appropriate mitigation measures. Recommendations to minimise any potential impacts to fauna and their habitats are detailed in **Section 6**. A likelihood of occurrence table for threatened flora and fauna species within the Subject Land is presented in **Appendix B: Habitat suitability assessment**.

5.2 Indirect and operational impacts

Indirect impacts occur when the proposal or activities relating to the construction or operation of the proposal affect native vegetation, threatened ecological communities and threatened species habitat beyond the Subject Land. Indirect impacts may also result from changes to land-use patterns, such as an increase in vehicular access and human activity on native vegetation, threatened ecological communities and threatened species habitat. Light and noise impacts during operation are expected to be negligible given existing levels within the surrounding landscape.

Impacts to adjacent vegetation can be prevented or minimised through appropriate exclusion fencing, implementation of a site-specific Construction Environmental Management Plan detailing best practice environmental protection measures, strict water quality practices and stormwater controls. Weeds occurring within the Subject Land are common with those occurring within adjacent vegetation to be retained. Increased transport of pathogens and weeds is unlikely to occur, however this would be managed by biosecurity measures outlined in the Construction Environmental Management Plan.

5.3 Cumulative impacts

While there would be some biodiversity impacts from the proposed modification, no significant increase to cumulative impacts would occur in the context of the existing land use of the site.

5.4 Assessments of significance

Assessments of significance (BC Act and EPBC Act) are required for each threatened species, population or ecological community that have been recorded in the Subject Land or are assumed present as they have a high likelihood of occurrence. Assessments of significance were prepared with consideration of the guidelines (OEH, 2018 & DoE, 2013) and are provided in **Appendix D: Tests of Significance (BC Act)** and **Appendix E: Assessments of significance (EPBC Act)**, with the results summarised below in **Table 5-1** and **Table 5-2**.

Table 5-1: Summary of BC Act significance assessments findings

Significance assessment question *(per Section 7.2 of the BC Act and Threatened Species Test of Significance Guidelines (OEH 2018))*

Threatened species, or communities	a	b	c	d	e	Likely significant impact?
Pteropus poliocephalus (Grey-headed Flying-fox)	N	X	N	N	N	No
***Y** = Yes (negative impact), **N** = No (no or positive impact), **X** = Yes/No answer not applicable, **?** = unknown impact.*						

Table 5-2: Summary of EPBC Act significance assessments findings

Threatened species, or communities	Important population *(per Significant Impact Guidelines 1.1 (DoE 2013))*	Likely significant impact?
Pteropus poliocephalus (Grey-headed Flying-fox)	N	N
***Y** = Yes (negative impact), **N** = No (no or positive impact), **X** = Yes/No answer not applicable, **?** = unknown impact.*		

6. Mitigation

This section details the measures to be implemented before, during and post construction to avoid and minimise the impacts of the Project (**Table 6-1**).

Table 6-1: Mitigation measures

ID	Impact	Mitigation measure	Timing and duration	Likely efficacy of mitigation	Residual impacts anticipated?	Responsibility
B01	Removal of native vegetation	Native vegetation removal will be minimised through detailed design.	Detailed design	Effective	Identify the loss of native vegetation	Contractor
B02		Pre-clearing surveys will be undertaken in accordance with *Guide 1: Pre-clearing process* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	Prior to construction	Effective		Contractor
B03		Vegetation removal will be undertaken in accordance with *Guide 4: Clearing of vegetation and removal of bushrock* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	During construction	Effective		Contractor
B04		Native vegetation will be re-established in accordance with *Guide 3: Re-establishment of native vegetation* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	Post construction	Effective		Contractor
B05		The unexpected species find procedure is to be followed under *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011) if threatened ecological communities, not assessed in the biodiversity assessment, are identified in the proposal site.	During construction	Proven		Contractor
B06	Removal of threatened fauna habitat	Threatened fauna habitat removal will be minimised through detailed design.	Detailed design	Effective	Identify the loss of threatened fauna habitat	
B07		Fauna will be managed in accordance with *Guide 9: Fauna handling* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	During construction	Effective		Contractor
B08		Habitat removal will be undertaken in accordance with *Guide 4: Clearing of vegetation and removal of bushrock* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	During construction	Effective		Contractor
B09		Pre-clearing surveys will be undertaken in accordance with *Guide 1: Pre-clearing process* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	During construction	Proven		Contractor

B10		The unexpected species find procedure is to be followed under *Guide 1: Pre-clearing process* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011) if threatened fauna, not assessed in the biodiversity assessment, are identified in the proposal site.	During construction	Proven		Contractor
B12	Removal of threatened flora	Pre-clearing surveys will be undertaken in accordance with *Guide 1: Pre-clearing process* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	During construction	Proven	Identify loss of threatened flora	Contractor
B13		The unexpected species find procedure is to be followed under *Guide 1: Pre-clearing process* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011) if threatened flora species, not assessed in the biodiversity assessment, are identified in the proposal site.	During construction	Proven		Contractor
B14	Edge effects on adjacent native vegetation and habitat	Exclusion zones will be set up at the limit of clearing in accordance *with Guide 2: Exclusion zones* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	During construction	Effective	Identify uncertain impacts on adjacent native vegetation and habitat	Contractor
B15	Injury and mortality of fauna	Fauna will be managed in accordance with *Guide 9: Fauna* handling of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	During construction	Effective	Identify uncertain impacts on biodiversity by Injury and mortality of fauna	Contractor
B16	Invasion and spread of weeds	Weed species will be managed in accordance *with Guide 6: Weed management* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	During construction	Effective	Identify uncertain impacts on biodiversity by invasion and spread of weeds	Contractor
B17	Invasion and spread of pests	Pest species will be managed within the proposal site.	During construction	Effective	Identify uncertain impacts on biodiversity by invasion and spread of pests	Contractor
B18	Invasion and spread of pathogens and disease	Pathogens will be managed in accordance with *Guide 2: Exclusion zones* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA 2011).	During construction	Effective	Identify uncertain impacts on biodiversity by invasion and spread of pathogens and disease	Contractor

B19	Noise, light, dust, and vibration	Shading and artificial light impacts will be minimised through detailed design.	During construction	Effective	Identify uncertain impacts on biodiversity by changes in noise, light, dust and vibration	Contractor

7. Offsets and other measures

Consider whether any impacts require the provision of biodiversity offsets, conservation measures or tree and hollow replacement in accordance with the TfNSW:

- No Net Loss Guidelines and supporting resources, and
- Tree and Hollow Replacement Guidelines and supporting resources.

7.1 Thresholds

Residual impacts from the proposal that do not exceed offset thresholds set out by No Net Loss Guidelines (TfNSW, 2022b) must consider the requirements of the Tree and Hollow Replacement Guidelines (TfNSW, 2022c). Offset thresholds are presented in **Table 7-1.**

Table 7-1: Offset thresholds (TfNSW No Net Loss Guidelines)

Impact	Threshold	Applicable to the Proposal?
Works involving clearing of a CEEC	Where there is any clearing of an CEEC in 'moderate to good' condition	No. No CEEC will be impacted.
Works involving clearing of an EEC	Where clearing of a EEC ≥ 2 ha in 'moderate to good' condition	No. No EECs will be cleared.
Works involving clearing of VEC	Where clearing of VEC ≥ 5 ha in 'moderate to good' condition	No. No VEC will be cleared.
Works involving clearing of any habitat for a known species credit fauna species or clearing of breeding habitat (as defined by the TBDC) for dual-credit fauna species (excluding exotic and planted vegetation that cannot be assigned to a plant community type)	Where clearing ≥ 1 ha in 'moderate to good' condition	No. No species credit fauna species or breeding habitat for dual credit fauna species are known from within the Subject Land.
Works involving removal of known threatened flora species and their habitat	Where loss of individuals is ≥10 or where clearing of habitat is ≥ 1 ha	No. No threatened flora species will be removed.
Type 1 or Type 2 key fish habitats	Where there is a net loss of habitat	No. No Type 1 or 2 KFH will be impacted.
Any residual biodiversity impact that doesn't require offsets in accordance with the No Net Loss Guideline is to be assessed against the requirements of the Tree and Hollow Replacement Guideline.	**Any clearing of hollows and/or trees ≥5cm DBH**	**Yes.**

7.2 Biodiversity offset strategy/tree and hollow replacement plan

Tree removal cannot be avoided to facilitate the proposal and therefore, the number of native and amenity trees and individual hollows to be removed must be counted and used to calculate the number of replacement trees and hollows as per **Table 7-2**. This should be undertaken by or verified by environment staff in consultation with the project manager. Replacement requirements should be included in a Tree and Hollow Replacement Plan.

Figure 7-2: Trees marked for removal

Table 7-2: Tree and hollow replacement requirements

Impact	Threshold	Applicable to the Proposal?	Replacement Assessment completed	Unique Tree Identifiers
Very large tree (DBH greater than 100cm)	Plant minimum 16 trees	Not applicable. No very large trees present	Not applicable.	Not applicable.
Large tree (DBH between 50cm and 100cm)	Plant minimum eight trees	Not applicable. No large trees present	Not applicable.	Not applicable.
Medium tree (DBH greater than 20 cm, but less than 50cm)	Plant minimum four trees	1 *Melaleuca quinquenervia*	Plant minimum 4 trees	MT1
Small tree (DBH greater than 5cm, but less than 20cm)	Plant minimum two trees	1 *Melaleuca quinquenervia* 2 *Casuarina glauca* 2 *Acacia longifolia*	Plant minimum 8 trees	ST3 ST1, ST4 ST2, ST5
Hollow replacement requirement	Provide three artificial hollows for every occupied hollow removed	Not applicable. No hollow-bearing trees present	Not applicable.	Not applicable.

* For trees with multiple stems/trunks, calculate the payment required for the largest stem DBH. Only one stem requires replacement/payment

Once opportunities for delivery of tree and hollow replacement within the project boundary or on land in the proximity have been determined (as per section 2.4), any remaining requirement can be met by transferring funds into the TfNSW Conservation Fund as per the rates set out at Table 2-2. Transfer of funds to the TfNSW Conservation Fund must occur prior to commencement of works.

Table 7-3: Tree and hollow fund contributions

Tree size	Contribution required per tree/hollow
Very large tree (DBH greater than 100cm)	$2500
Large tree (DBH between 50cm and 100cm)	$1000
Medium tree (DBH greater than 20 cm, but less than 50cm)	$500
Small tree (DBH greater than 5cm, but less than 20cm)	$125
Hollow	$500

8. Conclusion

The proposal will impact approximately 0.06ha of Exotic Grassland and 0.02ha Urban Exotic/ Native vegetation that could not be assigned to a PCT, which includes the removal of six native trees.

No threatened flora or fauna species were identified within the Subject Land however, this does not rule out the potential for threatened species to still exist within the Subject Land, particularly cryptic species. One (1) threatened fauna species has the potential to utlise foraging habitat within the Subject Land, based on habitat constraints and/ or historical records:

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

Assessments of significant impact under BC Act and EPBC Act were undertaken, and it was determined that no significant impact to this, or any threatened species was likely occur. As such, no species impact statement (SIS) or a Biodiversity Development Assessment Report (BDAR) is required to be prepared, nor is an EPBC Act strategic assessment required.

This assessment demonstrates that the relevant provisions of the *Environmental Planning and Assessment Act 1979*, *Biodiversity Conservation Act 2016* and the *Environment Protection and Biodiversity Conservation Act 1999* have been satisfied. If the appropriate recommendations in this report are followed, the proposed activity will have a non-significant impact to protected biodiversity and is unlikely to significantly impact any threatened ecological community or species.

9. Glossary

Term	Definition
Accredited person or assessor	Means as person accredited under section 6.10 (of the BC Act) to prepare reports in accordance with the BAM.
Biodiversity Assessment Method	The Biodiversity Assessment Method is established under section 6.7 of the BC Act. The BAM is established for the purpose of assessing certain impacts on threatened species and threatened ecological communities (TECs), and their habitats, and the impact on biodiversity values.
Biodiversity Assessment Method Calculator	Biodiversity Assessment Method Calculator (BAM-C) – the online computer program that provides decision support to assessors and proponents by applying the BAM and referred to as the BAM-C. The BAM-C contains biodiversity data from the BioNet Vegetation Classification and the Threatened Biodiversity Data Collection that the assessor is required to use in a BAM assessment. The BAM-C applies the equations used in the BAM, including those to determine the number and class of biodiversity credits required to offset the impacts of a development, or created at a biodiversity stewardship site. It is published by the Department.
Biodiversity credit report	The report produced by the BAM-C that sets out the number and class of biodiversity credits required to offset the remaining adverse impacts on biodiversity values at a development site, or on land to be biodiversity certified, or that sets out the number and class of biodiversity credits that are created at a biodiversity stewardship site.
Biodiversity offsets	The gain in biodiversity values achieved from the implementation of management actions on areas of land, to compensate for losses to biodiversity values from the impacts of development.
Biodiversity Offsets and Agreement Management System	The online system used to administer the Biodiversity Offsets Scheme. The BOAMS is used by accredited assessors (to carry out specific BAM-related tasks involving access to the BAM-C to perform assessments, submit data, generate credits and calculate a credit price), by landholders (to apply for a Biodiversity Stewardship Agreement and manage ongoing reporting obligations for their agreement) and by proponents of developments (to view their credit obligation or the payment required to the Biodiversity Conservation Fund).
Biodiversity risk weighting	A factor of the formulas used by the BAM to calculate credits. The biodiversity risk weighting (BRW) is a score given to each vegetation zone and species based on the 'sensitivity to loss' versus the 'sensitivity to gain'. The value is set for threatened species and listed in the TBDC. The BRW for vegetation is calculated for each vegetation zone by the BAM-C using a factor of the 'sensitivity to loss' of the PCT or TEC (located in the BioNet vegetation classification) and the 'sensitivity to gain' of the ecosystem credit species (in the TBDC) that are predicted to occur.
Biodiversity Stewardship site	Refers to land which is the subject to a Biodiversity Stewardship Agreement under the BC Act.
BioNet Atlas	The DPIE database of flora and fauna records (formerly known as the NSW Wildlife Atlas). The Atlas contains records of plants, mammals, birds, reptiles, amphibians, some fungi, some invertebrates (such as insects and snails listed under the BC Act) and some fish.
BioNet Vegetation classification	Refers to the vegetation community-level classification for use in vegetation mapping programs and regulatory biodiversity impact assessment frameworks in NSW. Refer About BioNet Vegetation Classification | NSW Environment and Heritage.
Construction footprint	The area to be directly impacted by the proposal during construction activities. See also definition for subject land.

Cumulative impact	The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Refer to Clause 228(2) of the EP&A Regulation 2000 for cumulative impact assessment requirements.
Direct impact	Direct impacts on biodiversity values include those related to clearing native vegetation and threatened species habitat and impacts on biodiversity values prescribed by the Biodiversity Conservation Regulation 2017 (the BC Regulation).
Ecosystem credit species	Threatened species or components of species habitat that are identified in the Threatened Species Data Collection as requiring assessment for ecosystem credits. This is analogous with the definition of 'predicted species'.
Ecosystem credits	A measurement of the value of threatened ecological communities, threatened species habitat for species that can be reliably predicted to occur with a PCT, and PCTs generally. Ecosystem credits measure the loss in biodiversity values at a development, activity, clearing or biodiversity certification site and the gain in biodiversity values at a biodiversity stewardship site.
Habitat	An area or areas occupied, or periodically or occasionally occupied, by a species, population or ecological community, including any biotic or abiotic component.
Indirect impact	Impacts that occur when the proposal affects native vegetation and threatened species habitat beyond the development footprint or within retained areas (e.g. transporting weeds or pathogens, dumping rubbish). This includes impacts from activities related to the construction or operational phase of the proposal and prescribed impacts.
Landscape assessment area	The area which includes the subject land and a 1500 m buffer surrounding the outside edge of the boundary of the subject land or 500 m along each side of the centre line of a linear-shaped proposal
Local population	The population that occurs in the study area. The assessment of the local population may be extended to include individuals beyond the study area if it can be clearly demonstrated that contiguous or interconnecting parts of the population continue beyond the study area, according to the following definitions: • *The local population of a threatened plant species comprises those individuals occurring in the study area or the cluster of individuals that extend into habitat adjoining and contiguous with the study area that could reasonably be expected to be cross-pollinating with those in the study area.* • *The local population of resident fauna species comprises those individuals known or likely to occur in the study area, as well as any individuals occurring in adjoining areas (contiguous or otherwise) that are known or likely to utilise habitats in the study area.* • *The local population of migratory or nomadic fauna species comprises those individuals that are likely to occur in the study area from time to time or return year to year (OEH 2018).*
Matter of national environmental significance	A matter of national environmental significance (MNES) is any of the nine defined components protected by a provision of Part 3 of the EPBC Act (Commonwealth).
Mitigation	Action to reduce the severity of an impact.
Native vegetation	Has the same meaning as in section 1.6 of the BC Act and section 60B of the LLS Act. In summary, a) trees (including any sapling or shrub or any scrub) b) understorey plants c) groundcover (being any type of herbaceous vegetation)

	d) plants occurring in a wetland. A plant is native to New South Wales if it was established in New South Wales before European settlement (BC Act). Native vegetation does not extend to marine vegetation (being mangroves, seagrasses or any other species of plant that at any time in its life cycle must inhabit water other than fresh water). Marine vegetation is covered by the provisions of the FM Act.
NSW (Mitchell) landscape	Landscapes with relatively homogeneous geomorphology, soils and broad vegetation types, mapped at a scale of 1:250,000.
Operational footprint	The area that will be subject to ongoing operational impacts from the proposal. This includes the road, surrounding safety verges and infrastructure, fauna connectivity structures and maintenance access tracks and compounds.
Patch size	An area of native vegetation that: • *occurs on the development site or biodiversity stewardship site* • *includes native vegetation that has a gap of less than 100 m from the next area of native vegetation (or ≤30 m for non-woody ecosystems).* Patch size may extend onto adjoining land that is not part of the development site or biodiversity stewardship site.
PlantNET	An online database of the flora of New South Wales which contains currently accepted taxonomy for plants found in the State, both native and exotic.
Population	A group of organisms, all of the same species, occupying a particular area.
Spatial datasets	Spatial databases required to prepare a BAR • *BioNet NSW (Mitchell) Landscapes – Version 3.1* • *NSW Interim Biogeographic Regions of Australia (IBRA region and sub-regions) – Version 7* • *NSW soil profiles* • *hydrogeological landscapes* • *acid sulfate soils risk* • *digital cadastral database* • *Vegetation Information Systems maps* • *Geological sites of NSW.*
Species credit species	Threatened species or components of species habitat that are identified in the Threatened Species Data Collection as requiring assessment for species credits. This is analogous with the definition of 'candidate species'.
Species credits	The class of biodiversity credits created or required for the impact on threatened species that cannot be reliably predicted to use an area of land based on habitat surrogates. Species that require species credits are listed in the Threatened Biodiversity Data Collection.
Species polygon	An area of land identified in Chapter 5 (of the BAM) that contains habitat or is occupied by a threatened species.
Study area	The area directly affected by the proposal (subject land or construction footprint) and any additional areas likely to be affected by the proposal, either directly or indirectly.
Subject land	Land subject to a development, activity, clearing, biodiversity certification or a biodiversity stewardship proposal. It excludes the landscape assessment area which surrounds the subject land (i.e., the area of land in the 1500 m buffer zone around the subject land or 500m buffer zone for linear proposals). In the case of a biodiversity certification proposal, subject land includes the biodiversity certification assessment area. See also definition for construction footprint.

Threatened Biodiversity Data Collection	A publicly assessable online database (registration required) which contains information for listed threatened species, populations and ecological communities. Part of the BioNet database, published by the EHG and accessible from the BioNet website at www.bionet.nsw.gov.au.
Vegetation integrity (score)	The condition of native vegetation assessed for each vegetation zone against the benchmark for the PCT. The vegetation integrity score is the quantitative measure of vegetation condition calculated by the BAM-C.
Vegetation zone	A relatively homogeneous area of native vegetation on a development site, clearing site, land to be biodiversity certified or biodiversity stewardship site that is the same PCT and has the same broad condition state.

10. Abbreviations

Term	Definition
AOBV	Area of Outstanding Biodiversity Value
BAM	Biodiversity Assessment Method
BAM-C	Biodiversity Assessment Method calculator
BC Act	Biodiversity Conservation Act 2016 (NSW)
BC Regulation	Biodiversity Conservation Regulation 2017 (NSW)
BDAR	Biodiversity Development Assessment Report
BOAMS	Biodiversity Offsets and Agreement Management System
BOS	Biodiversity Offset Scheme
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DIWA	Directory of Important Wetlands in Australia
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
EEC	Endangered ecological community
EHG	NSW Environment and Heritage Group within the Department of Planning and Environment
EIS	Environmental Impact Statement
EP&A Act	*Environment Planning and Assessment Act 1979* (NSW)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
Fisheries NSW Policy and guidelines	Fisheries NSW Policy and guidelines for fish habitat conservation and management (Update 2013)
FM Act	Fisheries Management Act 1994 (NSW)
GDE	Groundwater dependent ecosystems
IBRA	Interim Biogeographically Regionalisation of Australia
MNES	Matters of national environmental significance
NSW DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
PCT	Plant community type
PMST	Protected Matters Search Tool
REF	Review of Environmental Factors
SAII	Serious and Irreversible Impacts
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SSD	State Significant Development
SSI	State Significant Infrastructure
TBDC	Threatened Biodiversity Data Collection
TECs	Threatened ecological communities (VECs, EECs and CEECs)
TfNSW	Transport for NSW
VEC	Vulnerable Ecological Community

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Transport for NSW (2022c) Tree and hollow replacement guidelines

Transport for NSW (2023) Microbat management guidelines

Appendix A: Species recorded

Recorded flora

Scientific name	Common name	Status	
		BC Act	EPBC Act
Acacia longifolia	Sydney Golden Wattle	-	-
Casuarina glauca	Swamp Oak	-	-
*Cestrum parqui***	Green Cestrum	-	-
*Cinnamomum camphora**	Camphor Laurel	-	-
*Delairea odorata**	Cape Ivy	-	-
*Ehrharta erecta**	Panic Veldtgrass	-	-
*Erigeron bonariensis**	Fleabane	-	-
*Lantana camara***	Lantana	-	-
*Lonicera japonica**	Japanese Honeysuckle	-	-
Melaleuca quinquenervia	Broad-leaved Paperbark	-	-
*Monstera deliciosa**	Swiss Cheese Plant	-	-
*Ochna serrulata**	Mickey Mouse Plant	-	-
Pittosporum undulatum	Sweet Daphne	-	-
*Plantago lanceolata**	Ribwort Plantain	-	-
*Stenotaphrum secundatum**	Buffalo Grass	-	-
*Taraxicum officinale**	Dandelion	-	-

*exotic species; **priority weed

Appendix B: Habitat suitability assessment

Use the below criteria to determine the likelihood that a threatened species could occur in the study area. The criteria are designed for use in a BAR only and is not applicable for use in a BDAR (i.e., where the BAM-C is being used). Only recorded sightings from BioNet are valid for these criteria.

Likelihood	Criteria
Recorded	The species was observed in the study area during the current survey or has been recorded within the past five years (known from a reputable source).
High	A species is considered highly likely to occur in the study area if: • *There are previous credible records on BioNet within the study area from the last 10 years and suitable habitat is present.* **OR** • *The species is highly mobile, is dependent on identified suitable habitat within the study area (i.e., for breeding or important life cycle periods such as winter flowering resources) and has been recorded recently (within five years) on BioNet in the locality. This also includes species known or likely to visit the study area during regular seasonal movements or migration.*
Moderate	A species is considered moderately likely to occur in the study area if: • *Any suitable habitat (e.g., foraging) is present in the study area, the species is highly mobile and has been recorded in the locality in the last 10 years on BioNet. The species may be unlikely to maintain sedentary populations, however, may seasonally use resources within the study area opportunistically or during migration. The species is unlikely to be dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitat within the study area.* **OR** • *The species is not highly mobile, is dependent on identified suitable habitat features (e.g., hollows, rocky outcrops) within the study area and has been recorded in the locality in the last 10 years on BioNet.* **OR** • *For flora species that are associated with PCTs in the study area (see TBDC) or have been recorded in the locality in the last 10 years on BioNet – the associated PCT/habitat present in the study area is not degraded and the species was not targeted by surveys in accordance with the BAM and relevant survey guidelines. In addition, for flora species known to occur in disturbed areas (e.g., orchids), records from any time within the locality may warrant inclusion in this category.*
Low	A species is considered to have a low likelihood of occurring in the study area if: • *For highly mobile species, the species may be an occasional visitor, but habitat similar to the study area is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the study area and the species has not been recorded in the locality in the last 10 years on BioNet.* **OR** • *The species is not highly mobile, is dependent on identified suitable habitat features (e.g., hollows, rocky outcrops) within the study area and has not been recorded in the locality in the last 10 years on BioNet.* **OR** • *For flora species that are associated with PCTs in the study area (see TBDC) and the species was not identified following targeted surveys in accordance with the BAM and relevant survey guidelines. Flora species that have been recorded in the locality on BioNet at any time, associated suitable habitat (see the TBDC) is not present in the study area, though similar habitats of the same vegetation formation is present in the study area.*

Unlikely	Suitable habitat for the species is absent from the study area.

Habitat suitability assessment table

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
Plants							
Acacia bynoeana	E	V	Species	-	Bynoe's wattle is found in central eastern NSW, from the Hunter District (Morisset) south to the Southern Highlands and west to the Blue Mountains. The species is currently known from about 30 locations, with the size of the populations at most locations being very small (1-5 plants). It has recently been found in the Colymea and Parma Creek areas west of Nowra. Occurs in heath or dry sclerophyll forest on sandy soils. Seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches.	2 (BioNet)	Low. Targeted flora surveys during the NSW DCCEEW endorsed survey months did not detect this species. Within 1,500m of the Subject Land, no threatened flora have been recorded within the previous 100 years. The habitat within and adjoining the Subject Land was determined to be substantially degraded in accordance with section 6.4.1.17 of the BAM. No further assessment is required.
Acacia pubescens	V	V	Species	-	Distribution: Concentrated around the Bankstown-Fairfield-Rookwood area and the Pitt Town area, with outliers occurring at Barden Ridge, Oakdale and Mountain Lagoon. Habitat: Occurs on alluviums, shales and at the intergrade between shales and sandstones. The soils are characteristically gravely soils, often with ironstone. Occurs in open woodland and forest, in a variety of plant communities, including Cooks River/ Castlereagh Ironbark Forest, Shale/ Gravel Transition Forest and Cumberland Plain Woodland.	5 (BioNet)	Low. Targeted flora surveys during NSW DCCEEW endorsed survey months did not detect this species. Within 1,500m of the Subject Land, no threatened flora have been recorded within the previous 100 years. The habitat within and adjoining the Subject Land was determined to be substantially degraded in accordance with section 6.4.1.17 of the BAM. No further assessment is required.
Acacia terminalis subsp. Eastern Sydney	E	E	Species	-	Very limited distribution, mainly in near-coastal areas from the northern shores of Sydney Harbour S to Botany Bay, with most records from the Port Jackson area and the eastern suburbs of Sydney. Coastal scrub and dry sclerophyll woodland on sandy soils. Habitat is generally sparse and scattered.	9 (BioNet)	Low. No Acacia terminalis were identified within the Subject Land. Further, the habitat within and adjoining the Subject Land was determined to be substantially degraded in accordance with section 6.4.1.17 of the BAM

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
							No further assessment is required.
Caladenia tessellata	E	V	Species	-	The Tessellated Spider Orchid is found in grassy sclerophyll woodland on clay loam or sandy soils, though the population near Braidwood is in low woodland with stony soil. Known from the Sydney area (old records), Wyong, Ulladulla and Braidwood in NSW. Populations in Kiama and Queanbeyan are presumed extinct.	2 (BioNet)	Low. This species is presumed extinct from the Sydney Area. Within 1,500m of the Subject Land, no threatened flora have been recorded within the previous 100 years. The habitat within and adjoining the Subject Land was determined to be substantially degraded in accordance with section 6.4.1.17 of the BAM No further assessment is required.
Melaleuca deanei	V	V	Species	-	Distribution: Deane's Paperbark occurs in two distinct areas, in the Ku-ring-gai/Berowra and Holsworthy/Wedderburn areas respectively. There are also more isolated occurrences at Springwood (in the Blue Mountains), Wollemi National Park, Yalwal (west of Nowra) and Central Coast (Hawkesbury River) areas. Habitat: The species occurs mostly in ridgetop woodland, with only 5% of sites in heath on sandstone.	10 (BioNet)	Low. Targeted flora surveys during NSW DCCEEW endorsed survey months did not detect this species. Within 1,500m of the Subject Land, no threatened flora have been recorded within the previous 100 years. The habitat within and adjoining the Subject Land was determined to be substantially degraded in accordance with section 6.4.1.17 of the BAM No further assessment is required.
Persoonia hirsuta	E	E	Species	-	Distribution: Persoonia hirsuta has a scattered distribution around Sydney. The species is distributed from Singleton in the north, along the east coast to Hilltop in the south west, Dombarton in the south east and the Blue Mountains to the west. Habitat: The Hairy Geebung is found in clayey and sandy soils in dry sclerophyll open forest, woodland and heath, primarily on the Mittagong Formation and on the upper Hawkesbury Sandstone.	2 (BioNet)	Low. Targeted flora surveys during NSW DCCEEW endorsed survey months did not detect this species. Within 1,500m of the Subject Land, no threatened flora have been recorded within the previous 100 years. The habitat within and adjoining the Subject Land was determined to be substantially degraded in accordance with section 6.4.1.17 of the BAM No further assessment is required.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
Pimelea curviflora var. curviflora	V	V	Species	-	Confined to the coastal area of Sydney between northern Sydney in the south and Maroota in the north-west. Former range extended south to the Parramatta River and Port Jackson region including Five Dock, Bellevue Hill and Manly. Occurs on shaley-lateritic soils over sandstone and shale-sandstone transition soils on ridgetops and upper slopes amongst woodlands.	1 (BioNet)	Low. Targeted flora surveys during NSW DCCEEW endorsed survey months did not detect this species. Within 1,500m of the Subject Land, no threatened flora have been recorded within the previous 100 years. The habitat within and adjoining the Subject Land was determined to be substantially degraded in accordance with section 6.4.1.17 of the BAM No further assessment is required.
Syzygium paniculatum	E	V	Species	-	Distribution: The Magenta Lilly Pilly is found only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest. Habitat: On the south coast the Magenta Lilly Pilly occurs on grey soils over sandstone, restricted mainly to remnant stands of littoral (coastal) rainforest.	26 (BioNet)	Low. No *Syzygium* spp. were identified within the Subject Land. Further, the habitat within and adjoining the Subject Land was determined to be substantially degraded in accordance with section 6.4.1.17 of the BAM No further assessment is required.
Tetratheca juncea	V	V	Species	-	Confined to the northern portion of the Sydney Basin bioregion and the southern portion of the North Coast bioregion in the local government areas of Wyong, Lake Macquarie, Newcastle, Port Stephens, Great Lakes and Cessnock. It is usually found in low open forest-woodland with a mixed shrub understorey and grassy groundcover. The majority of populations occur on low nutrient soils associated with the Awaba Soil Landscape. Cryptic species that requires survey in September-October.	14 (BioNet)	Low. There was no suitable habitat for this species within the Subject Land. The habitat within and adjoining the Subject Land was determined to be substantially degraded in accordance with section 6.4.1.17 of the BAM No further assessment is required.
Wilsonia backhousei	V	-	Species	Beaches and rock platforms adjacent to beaches, or anywhere saline. Margins of salt marshes and	In NSW Narrow-leaf Wilsonia is found on the coast between Mimosa Rocks National Park and Wamberal north of Sydney. This is a species of the margins of salt marshes and lakes.	1 (BioNet)	Low. Targeted flora surveys during NSW DCCEEW endorsed survey months did not detect this species. Within 1,500m of the Subject Land, no threatened flora have been recorded within the previous 100 years. The habitat within and adjoining the Subject Land was determined to be substantially degraded

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
				lakes on the coast			in accordance with section 6.4.1.17 of the BAM. No further assessment is required.
Birds							
Anthochaera phrygia	E	CE	Species/ Ecosystem	As per Important Habitat Map.	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. The species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak.	1 (BioNet)	Low. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. The Subject Land is not within the Important Areas Map. No further assessment is required.
Artamus cyanopterus cyanopterus	V	-	Ecosystem	-	Dusky woodswallows are widespread in eastern, southern and south western Australia. The species occurs throughout most of New South Wales, but is sparsely scattered in, or largely absent from, much of the upper western region. Most breeding activity occurs on the western slopes of the Great Dividing Range. 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.	5 (BioNet)	Low. This highly mobile species would be an unlikely visitor and habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods) on habitats in the Subject Land. No further assessment is required.
Botaurus poiciloptilus	E	E	Ecosystem	Brackish or freshwater wetlands.	Australasian Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. Favours permanent freshwater wetlands with tall, dense	1 (BioNet)	Unlikely. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
					vegetation, particularly bullrushes (*Typha* spp.) and spikerushes (*Eleocharis* spp.).		No further assessment is required.
Burhinus grallarius	E	-	Species	-	The Bush Stone-curlew is found throughout Australia except for the central southern coast and inland, the far south-east corner, and Tasmania. Inhabits open forests and woodlands with a sparse grassy groundlayer and fallen timber.	5 (BioNet)	Unlikely. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. No further assessment is required.
Calidris alba	V	-	Species/ Ecosystem	As per Important Habitat Map	Found in coastal areas on low beaches of firm sand, near reefs and inlets, along tidal mudflats and bare open coastal lagoons; individuals are rarely recorded in near-coastal wetlands.	3 (BioNet)	Unlikely. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. The Subject Land is not within the Important Areas Map. No further assessment is required.
Calidris canutus	-	E	Species/ Ecosystem	As per Important Habitat Map	The Red Knot is common in all the main suitable habitats around the coast of Australia. Very large numbers are regularly recorded in north-west Australia, with 80 Mile Beach and Roebuck Bay being particular strongholds. The only places it is not found in significant numbers are the northern part of the Great Australian Bight in South Australia and Western Australia, and along much of the NSW coast, where wader habitat is rather scarce (excluding the Hunter Estuary). It is widespread along the coast south of Townsville and along the coasts of NSW and Victoria. In Australasia the Red Knot mainly inhabit intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs.	11 (BioNet)	Unlikely. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. The Subject Land is not within the Important Areas Map. No further assessment is required.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
					They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps.		
Calidris ferruginea	E	CE	Species/ Ecosystem	As per Important Habitat Map	It occurs along the entire coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray-Darling Basin. It generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts.	161 (BioNet)	Unlikely. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. The Subject Land is not within the Important Areas Map. No further assessment is required.
Calidris tenuirostris	V	CE	Species/ Ecosystem	As per Important Habitat Map	In NSW, the species has been recorded at scattered sites along the coast to about Narooma. It has also been observed inland at Tullakool, Armidale, Gilgandra and Griffith. Occurs within sheltered, coastal habitats containing large, intertidal mudflats or sandflats, including inlets, bays, harbours, estuaries and lagoons. Often recorded on sandy beaches with mudflats nearby, sandy spits and islets and sometimes on exposed reefs or rock platforms.	12 (BioNet)	Unlikely. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. The Subject Land is not within the Important Areas Map. No further assessment is required.
Calyptorhynchus lathami lathami	V	V	Species/ Ecosystem	Presence of Allocasuarina and casuarina species. Hollow bearing trees. Living or dead tree with hollows greater than 15cm diameter and greater than 8m above ground.	The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (*Allocasuarina littoralis*) and Forest Sheoak (*A. torulosa*) are important foods.	1 (BioNet)	Low. This highly mobile species would be an unlikely visitor and habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods) on habitats in the Subject Land. No further assessment is required.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
Charadrius leschenaultii	V	V	Ecosystem	Mistletoes present at a density of greater than five mistletoes per hectare	Inhabits large intertidal sandflats or mudflats in sheltered bays, harbours and estuaries, and occasionally sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops. Non-breeding in Australia.	4 (BioNet)	Low. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. No further assessment is required.
Charadrius mongolus	V	E	Species/ Ecosystem	As per Important Habitat Map	Inhabits large intertidal sandflats or mudflats in sheltered bays, harbours and estuaries, and occasionally sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops. Non-breeding in Australia.	4 (BioNet)	Unlikely. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. The Subject Land is not within the Important Areas Map. No further assessment is required.
Glossopsitta pusilla	V	-	Ecosystem	-	NSW provides a large portion of the species' core habitat, with lorikeets found westward as far as Dubbo and Albury. Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity.	1 (BioNet)	Low. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. No further assessment is required.
Grantiella picta	V	V	Ecosystem	Mistletoes present at a density of greater than five mistletoes per hectare	The greatest concentrations of the bird and almost all breeding occurs on the inland slopes of the Great Dividing Range in NSW, Victoria and southern Queensland. Inhabits Boree/ Weeping Myall (*Acacia pendula*), Brigalow (*A. harpophylla*) and Box-Gum Woodlands and Box-Ironbark Forests.	1 (BioNet)	Low. This highly mobile species would be an unlikely visitor and habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods) on habitats in the Subject Land. No further assessment is required.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
Haematopus fuliginosus	V	-	Species	Within 100m of estuarine areas and the ocean	In NSW the Sooty Oystercatcher occupies rocky headlands, reefs and offshore islands along the entire coast, apparently as a single continuous population.	1 (BioNet)	Unlikely. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. No further assessment is required.
Haematopus longirostris	E	-	Species	Within 100m of estuarine areas and the ocean	The Pied Oystercatcher inhabits marine littoral habitats, including islands. It occupies muddy, sandy, stony or rocky estuaries, inlets and beaches, particularly intertidal mudflats and sandbanks in large marine bays.	8 (BioNet)	Unlikely. No suitable foraging or breeding habitat was observed within the Subject Land. No further assessment is required.
Haliaeetus leucogaster	V	-	Species/ Ecosystem	Living or dead mature trees within suitable vegetation within 1km of a rivers, lakes, large dams or creeks, wetlands and coastlines.	In New South Wales it is widespread along the east coast, and along all major inland rivers and waterways. Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea.	4 (BioNet)	Low. This highly mobile species would be an unlikely visitor and habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods) on habitats in the Subject Land. No further assessment is required.
Hieraaetus morphnoides	V	-	Species/ Ecosystem	Nest trees - live (occasionally dead) large old trees within vegetation).	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used.	1 (BioNet)	Low. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. No further assessment is required.
Hirundapus caudacutus	-	V	Ecosystem	-	Migratory and usually seen in eastern Australia from October to April. Open forest and rainforest.	5 (BioNet)	Moderate. This species may forage aerially over the Subject Land, but aerial habitats will not be impacted by the activity.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
							No further assessment is required.
Ixobrychus flavicollis	V	-	Ecosystem	Land within 40 m of freshwater and estuarine wetlands, in areas of permanent water and dense vegetation	Usually found on coastal plains below 200 m. Often found along timbered watercourses, in wetlands with fringing trees and shrub vegetation. The sites where they occur are characterized by dense waterside vegetation.	2 (BioNet)	Unlikely. No suitable foraging or breeding habitat was observed within the Subject Land. No further assessment is required.
Limicola falcinellus	V	-	Species/ Ecosystem	As per Important Habitat Map	Broad-billed Sandpipers favour sheltered parts of the coast such as estuarine sandflats and mudflats, harbours, embayments, lagoons, saltmarshes and reefs as feeding and roosting habitat. Occasionally, individuals may be recorded in sewage farms or within shallow freshwater lagoons. Broad-billed Sandpipers roost on banks on sheltered sand, shell or shingle beaches.	2 (BioNet)	Unlikely. No suitable foraging or breeding habitat was observed within the Subject Land. The Subject Land is not within the Important Areas Map. No further assessment is required.
Limosa limosa	V	-	Species/ Ecosystem	As per Important Habitat Map	Primarily a coastal species. Usually found in sheltered bays, estuaries and lagoons with large intertidal mudflats and-or sandflats. Further inland, it can also be found on mudflats and in water less than 10 cm deep, around muddy lakes and swamps.	8 (BioNet)	Unlikely. No suitable foraging or breeding habitat was observed within the Subject Land. The Subject Land is not within the Important Areas Map. No further assessment is required.
Lophoictinia isura	V	-	Species/ Ecosystem	Nest trees	Typically inhabits coastal forested and wooded lands of tropical and temperate Australia. In NSW it is often associated with ridge and gully forests dominated by Eucalyptus longifolia, Corymbia maculata, E. elata or E. smithii. Individuals appear to occupy large hunting ranges of more than 100km2. They require large living trees for breeding, particularly near water with surrounding woodland -forest close by for foraging habitat. Nest sites are generally located along or near watercourses, in a tree fork or on large horizontal limbs.	1 (BioNet)	Low. This highly mobile species would be an unlikely visitor and habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods) on habitats in the Subject Land. No further assessment is required.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
Neophema pulchella	V	-	Ecosystem	-	The Turquoise Parrot's range extends from southern Queensland through to northern Victoria, from the coastal plains to the western slopes of the Great Dividing Range. Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland.	1 (BioNet)	Low. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. No further assessment is required.
Ninox strenua	V	-	Species/ Ecosystem	Hollow bearing trees. Living or dead trees with hollow greater than 20cm diameter.	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 suggesting occupancy prior to land clearing. The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest.	45 (BioNet)	Low. Minor habitat (e.g., foraging) may be present in the Subject Land for this highly mobile species. However, this species is unlikely to be dependent on habitat within the Subject Land. No breeding habitat is present. Aside from being located within a highly urbanised area, the location of Powerful Owl breeding sites are well-documented by Birdlife Australia. No further assessment is required.
Numenius madagascariensis	-	CE	Species/ Ecosystem	As per Important Habitat Map	Within Australia, the Eastern Curlew has a primarily coastal distribution. It generally occupies coastal lakes, inlets, bays and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats and sometimes saltmarsh of sheltered coasts.	1 (BioNet)	Unlikely. No suitable foraging or breeding habitat was observed within the Subject Land. The Subject Land is not within the Important Areas Map. No further assessment is required.
Petroica boodang	V	-	Ecosystem	-	In NSW, it occurs from the coast to the inland slopes. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs.	3 (BioNet)	Low. This highly mobile species would be an unlikely visitor and habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods) on habitats in the Subject Land. No further assessment is required.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
Petroica phoenicea	V	-	Ecosystem	-	In NSW, it breeds in upland areas and in winter, many birds move to the inland slopes and plains. Prefers clearings or areas with open understoreys.	1 (BioNet)	Low. This highly mobile species would be an unlikely visitor and habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods) on habitats in the Subject Land. No further assessment is required.
Ptilinopus regina	V	-	Ecosystem	-	Coast and ranges of eastern NSW and Queensland, from Newcastle to Cape York. Vagrants are occasionally found further south to Victoria. 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.	1 (BioNet)	Low. This highly mobile species would be an unlikely visitor and habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods) on habitats in the Subject Land. No further assessment is required.
Ptilinopus superbus	V	-	Ecosystem	-	The Superb Fruit-dove occurs principally from north-eastern in Queensland to north-eastern NSW. It is much less common further south, where it is largely confined to pockets of suitable habitat as far south as Moruya. There are records of vagrants as far south as eastern Victoria and Tasmania. 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.	6 (BioNet)	Low. This highly mobile species would be an unlikely visitor and habitat similar to the Subject Land is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods) on habitats in the Subject Land. No further assessment is required.
Stagonopleura guttata	V	-	Ecosystem	-	It is widely distributed in NSW, with a concentration of records from the Northern, Central and Southern Tablelands, the Northern, Central and South Western Slopes and the North West Plains and Riverina. Found in grassy eucalypt woodlands, including Box-Gum	1 (BioNet)	Low. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. No further assessment is required.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
					Woodlands and Snow Gum *Eucalyptus pauciflora* Woodlands.		
Sternula albifrons	E	-	Species/ Ecosystem	-	Almost exclusively coastal, preferring sheltered environments; however may occur several hundred kilometres from the sea in harbours, inlets and rivers.	50 (BioNet)	Unlikely. Suitable habitat for coastal species is absent within the Subject Land. No further assessment is required.
Xenus cinereus	V	-	Species/ Ecosystem	As per Important Habitat Map	The Terek Sandpiper mostly forages in the open, on soft wet intertidal mudflats or in sheltered estuaries, embayments, harbours or lagoons.	5 (BioNet)	Unlikely. This species has not been recorded in the locality in the last 10 years on BioNet, and no suitable foraging or breeding habitat was observed within the Subject Land. The Subject Land is not within the Important Areas Map. No further assessment is required.
Mammals							
Chalinolobus dwyeri	V	V	Species	Cliffs. Within two kilometres of rocky areas containing caves, overhangs, escarpments, outcrops, or crevices, or within two kilometres of old mines or tunnels.	Found mainly in areas with extensive cliffs and caves, from Rockhampton in Queensland south to Bungonia in the NSW Southern Highlands. 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*), frequenting low to mid-elevation dry open forest and woodland close to these features.	1 (BioNet)	Moderate. Suitable habitat (e.g., aerial foraging habitat) is present in the Subject Land and the species is highly mobile and has been recorded in the locality in the last 10 years on BioNet. The species may seasonally use resources within the Subject Land opportunistically. The species is not dependent (i.e., for breeding or important life cycle periods) on habitat within the Subject Land. No further assessment is required.
Dasyurus maculatus	V	E	Ecosystem	-	It is now found in eastern NSW, eastern Victoria, south-east and north-eastern Queensland, and Tasmania. Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and	1 (BioNet)	Unlikely. The Subject Land did not contain suitable habitat for this species, and it is fragmented from habitats that would potentially harbour this species.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
					inland riparian forest, from the sub-alpine zone to the coastline.		No further assessment is required.
Falsistrellus tasmaniensis	V	-	Ecosystem	-	Inhabit sclerophyll forests, preferring wet habitats where trees are more than 20 m high. Two observations have been made of roosts in stem holes of living eucalypts. There is debate about whether or not this species moves to lower altitudes during winter, or whether they remain sedentary but enter torpor . This species also appears to be highly mobile and records showing movements of up to 12 km between roosting and foraging sites .	5 (BioNet)	Moderate. Suitable habitat (e.g., aerial foraging habitat) is present in the Subject Land and the species is highly mobile and has been recorded in the locality in the last 10 years on BioNet. The species may seasonally use resources within the Subject Land opportunistically. The species is not dependent (i.e., for breeding or important life cycle periods) on habitat within the Subject Land. No further assessment is required.
Micronomus norfolkensis	V	-	Ecosystem	-	The Eastern False Pipistrelle is found on the south-east coast and ranges of Australia, from southern Queensland to Victoria and Tasmania. Prefers moist habitats, with trees taller than 20 m.	1 (BioNet)	Moderate. Suitable habitat (e.g., aerial foraging habitat) is present in the Subject Land and the species is highly mobile and has been recorded in the locality in the last 10 years on BioNet. The species may seasonally use resources within the Subject Land opportunistically. The species is not dependent (i.e., for breeding or important life cycle periods) on habitat within the Subject Land. No further assessment is required.
Miniopterus orianae oceanensis	V	-	Species/ Ecosystem	Cave, tunnel, mine, culvert or other structure known or suspected to be used for breeding including species	East coast and ranges of Australia from Cape York in Queensland to Wollongong in NSW. 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.	34 (BioNet)	Moderate. Suitable habitat (e.g., aerial foraging habitat) is present in the Subject Land and the species is highly mobile and has been recorded in the locality in the last 10 years on BioNet. The species may seasonally use resources within the Subject Land

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
				records in BioNet with microhabitat code 'IC – in cave' observation type code 'E nest-roost' with numbers of individuals >500 or from the scientific literature.			No further assessment is required.opportunistically. The species is not dependent (i.e., for breeding or important life cycle periods) on habitat within the Subject Land. No further assessment is required.
Myotis macropus	V	-	Species	Waterbodies with permanent pools/stretches 3m or wider, including rivers, large creeks, billabongs, lagoons, estuaries, dams and other waterbodies, on or within 200m of the site.	The Southern Myotis is found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. It is rarely found more than 100 km inland, except along major rivers. 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.	10 (BioNet)	Moderate. Suitable habitat (e.g., aerial foraging habitat) is present in the Subject Land and the species is highly mobile and has been recorded in the locality in the last 10 years on BioNet. The species may seasonally use resources within the Subject Land opportunistically. The species is not dependent (i.e., for breeding or important life cycle periods) on habitat within the Subject Land. No further assessment is required.
Perameles nasuta – North Head Population	E	-	Species	North Head	The exact area occupied by the population is defined as North Head, Manly NSW. Shelter mostly under older houses and buildings Forage in parkland and back-yards.	24 (BioNet)	Not applicable. The Subject Land is located outside the distribution for this Endangered Population No further assessment is required.
Phascolarctos cinereus	E	E	Species	Presence of koala use trees.	In New South Wales, koala populations are found on the central and north coasts, southern highlands, southern and northern tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the	7 (BioNet)	Unlikely. The Subject Land did not contain suitable habitat for this species, and it is fragmented from habitats that would potentially harbour this species.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
					plains west of the Great Dividing Range. Inhabit eucalypt woodlands and forests.		No further assessment is required.
Pteropus poliocephalus	V	V	Species/ Ecosystem	Breeding camps.	Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. In times of natural resource shortages, they may be found in unusual locations. Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.	1860 (BioNet)	High. Suitable habitat (i.e., Melaleuca quinquenervia and to a lesser extent Acacia longifolia) is present in the Subject Land and the species is highly mobile and has been recorded in the locality in the last 10 years on BioNet. The species may seasonally use resources within the Subject Land opportunistically. The species is not dependent (i.e., for breeding or important life cycle periods) on habitat within the Subject Land. A Test of Significance has been undertaken for this species (see Appendix D: Tests of Significance (BC Act)).
Saccolaimus flaviventris	V	-	Ecosystem	-	The Yellow-bellied Sheathtail-bat is a wide-ranging species found across northern and eastern Australia. Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows.	9 (BioNet)	Moderate. Suitable habitat (e.g., aerial foraging habitat) is present in the Subject Land and the species is highly mobile and has been recorded in the locality in the last 10 years on BioNet. The species may seasonally use resources within the Subject Land opportunistically. The species is not dependent (i.e., for breeding or important life cycle periods) on habitat within the Subject Land. No further assessment is required.
Amphibians							
Crinia tinnula	V	-	Species	-	Wallum Froglets are found in acid paperbark swamps and sedge swamps of the coastal 'wallum' country. Their tadpoles are adapted to acid conditions and may be	1 (BioNet)	Unlikely. The Subject Land did not contain suitable habitat for this species, and it is

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
					outcompeted by the Common Froglet. Males call from the base of vegetation in and around the breeding site and are almost impossible to locate. Calling occurs from Autumn to Spring, being most strongly associated with flooding following rainfall. Its range extends from SE QLD to the Kurnell Peninsular of Sydney.		fragmented from habitats that would potentially harbour this species. No further assessment is required.
Litoria aurea	E	V	Species	Semi-permanent/ ephemeral wet areas. Within 1km of wet areas. Swamps. Within 1km of swamp. Waterbodies. Within 1km of waterbody	Formerly distributed from the NSW north coast near Brunswick Heads, southwards along the NSW coast to Victoria where it extends into east Gippsland. Records from west to Bathurst, Tumut and the ACT region. Since 1990 there have been approximately 50 recorded locations in NSW, most of which are small, coastal, or near coastal populations. Inhabits marshes, dams and stream-sides, particularly those containing bullrushes (*Typha* spp.) or spikerushes (*Eleocharis* spp.).	677 (BioNet)	Unlikely. The Subject Land did not contain suitable habitat for this species, and it is fragmented from habitats that would potentially harbour this species. No further assessment is required.
Reptiles							
Hoplocephalus bitorquatus	V	-	Species	-	The Pale-Headed Snake has a patchy distribution from north-east Queensland to north-east NSW. In NSW it occurs from the coast to the western side of the Great Divide as far south as Tuggerah and out to the western plains. It is found mainly in dry eucalypt forests and woodlands, cypress woodland and occasionally in rainforest or moist eucalypt forest where it favours streamside areas, particularly in drier habitats. They shelter during under loose bark or in hollows and have a preference for frogs as prey, although lizards and small mammals are also taken. This species breeds and shelters in hollows in live and dead trees and in and under fallen timber. It is best detected from mid spring to mid autumn and is mostly nocturnal.	1 (BioNet)	Unlikely. The Subject Land did not contain suitable habitat for this species, and it is fragmented from habitats that would potentially harbour this species. No further assessment is required.

Appendix D: Tests of Significance (BC Act)

Biodiversity Conservation Act 2016 **– Test of Significance (5-part Test)** **For Threatened Frugivorous Bats**		
BC Act Status: Vulnerable - ***Pteropus poliocephalus***		
(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 action is not 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. No breeding habitat will be impacted by the activity. The closest camp (Kurnell Desalination Plant) is located >10km from the Subject Land. It is highly unlikely that a viable local population would be likely to be placed at risk of extinction given suitable habitat remaining immediately adjacent to the Subject Land and the very large areas of potential habitat in the broader locality. Patches of habitat will furthermore remain adjacent and close-by to the subject land, thereby facilitating the movement of this species between patches of more suitable habitat in the broader locality.
(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:	**(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or**	Not Applicable.
	(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,	Not Applicable.
(c) in relation to the habitat of a threatened species or ecological community:	**(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and**	Approximately 0.01ha of potential foraging habitat for this species has the potential to be impacted as a result of the proposal. This includes the removal of 4 native trees. Areas potentially containing these species, that immediately adjoin the Subject Land, will be retained.

Biodiversity Conservation Act 2016 – Test of Significance (5-part Test) For Threatened Frugivorous Bats		
BC Act Status: Vulnerable - *Pteropus poliocephalus*		
	(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and	Given this is a highly-mobile species, and the potential foraging habitat within the Subject Land is already fragmented, the proposal will not result in any additional fragmentation for this species.
	(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,	The habitat to be impacted is not expected to be of high importance to this species given the mobility of the species. Higher-quality habitat will continue to persist in the broader locality.
(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 activity proposed is not likely to have an adverse effect on any declared area of critical habitat, directly or indirectly.	
(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 following Key Threatening Processes (KTPs) are documented to impact upon the survival of the ecological community: Clearing of native vegetation. Suitable habitat will remain adjacent to the Subject Land and in the broader locality.	
Conclusion There will be no significant impact on this species therefore the proposed action should not warrant the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR).		

Appendix E: Assessments of significance (EPBC Act)

Commonwealth Environment Protection and Biodiversity Conservation Act 1999 Assessment of Significant Impact Criteria for Pteropus poliocephalus	
EPBC Act Status: Vulnerable	
Significant impact criteria **An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:**	
lead to a long-term decrease in the size of an important population of a species	The proposed action will not lead to a long-term decrease in the size of an important population of this species. No breeding habitat will be impacted. While the proposal will require the removal of approximately 0.1ha of potential foraging habitat, this species will continue to have large areas of habitat within the locality.
reduce the area of occupancy of an important population	The proposed action will not reduce the area of occupancy of an important population of this species. No breeding habitat will be impacted. While the proposal will require the removal of approximately 0.1ha of potential foraging habitat, this species will continue to have large areas of habitat within the locality.
fragment an existing important population into two or more populations	The proposed action is unlikely to fragment any existing important population into two or more populations. The Subject Land occurs in an urban area that would already be considered to fragment habitat for this species. No additional clearing is to occur beyond the Subject Land.
adversely affect habitat critical to the survival of a species	The proposed action will not adversely affect habitat critical to the survival of this species. Potential foraging habitat to be impacted is not considered critical to the survival of this species.
disrupt the breeding cycle of an important population	No breeding habitat will be impacted.
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 will lead to a decrease in the available foraging habitat for this species however, it is not expected that this will lead to decline given the large areas of potential habitat in the wider locality.
result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Subject to weed control measures, the activity will not result in the introduction of an invasive species harmful to this species.
introduce disease that may cause the species to decline	Subject to pathogen control measures, the activity will not result in the introduction of a disease that may cause this species to decline.

Commonwealth Environment Protection and Biodiversity Conservation Act 1999 Assessment of Significant Impact Criteria for Pteropus poliocephalus	
EPBC Act Status: Vulnerable	
interfere substantially with the recovery of the species	The proposal action is not expected to interfere substantially with the recovery of this species. Large areas of potential habitat will continue to exist in the broader locality.

NSW GOVERNMENT