Digital Signage - Pacific Highway, Hornsby

Test of Significance

JCDecaux

3 May 2024

Version 2.0

Document Status

Version	Doc type	Approved by	Date issued
0.0	Draft	Clayton Woods	9/04/2024
1.0	Final	Kat Duchatel	12/04/2024
2.0	Final amended	Kat Duchatel	3/05/2024

Project Details

Project Name	Pacific Highway, Hornsby Test of Significance for Signage
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Document Number	20240503 Pacific Highway, Hornsby Test of Significance for Signage.docx

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3 May 2024

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Pacific Highway, Hornsby Test of Significance for Signage

JCDecaux are working on a development application for a large format digital sign at Pacific Highway, Hornsby (PAN-385796, DA23/15294). The proposed works involve a conversion from an existing in-situ static sign to a smaller digital sign. The development application is subject to an RFI from the Department of Planning, Housing and Infrastructure. This largely relates to whether the proposed development is likely to impact on biodiversity / threatened species. The department has requested that a Test of Significance be produced and included as part of the development application.

The objective of a Test of Significance under Section 7.3 of the *Biodiversity Conservation Act 2016* (BC Act) is to provide standardised and transparent consideration during the development assessment process of whether the proposed development is likely to significantly affect threatened species or ecological communities, or their habitats.

Development is considered likely to significantly affect threatened species if:

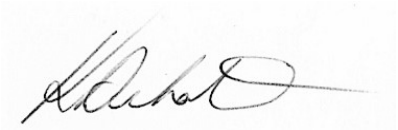
- it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in Section 7.3 of the *Biodiversity Conservation Act 2016*, or
- the development exceeds the biodiversity offsets scheme threshold if the biodiversity offsets scheme applies to the impacts of the development on biodiversity values, or
- it is carried out in a declared area of outstanding biodiversity value.

The following Test of Significance was prepared by Environmental Services & Education Australia (ESEA) and écologique in accordance with section 7.3 of the BC Act.

This assessment has found that the proposed development will not have a significant impact on any threatened species, populations or communities either directly or indirectly. Mapped Biodiversity Values will not be cleared and therefore the BOS threshold has not been exceeded. Application of the Biodiversity Assessment Method (OEH 2020) and preparation of a Biodiversity Development Assessment Report is not required to support the development application.

Yours faithfully

Clayton Woods
Director – Environment Services & Education Australia



Kat Duchatel
Director écologique

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1 SITE DESCRIPTION

The subject site is described as Lot 1023 DP 1192060 and occurs on the corner of Government Road and Pacific Highway, Hornsby. It is located within an established Sydney Trains corridor. The site contains an existing advertisement sign (dimensions 12.66 x 3.35 m), block retaining wall, and electrical box. These are abutted by a wire fence and bridge balustrade to the north. There is a planted garden bed immediately underneath and to the south of the existing signage, consisting of planted amenity groundcover species and introduced weeds. Mature native trees are present immediately to the north and west of the existing signage (Figure 1).

The surrounding area is characterised by the presence of Pacific Highway immediately to the east of the subject site and an established Sydney Trains rail track immediately to the north. It is also surrounded by mixed use buildings to the southwest and southeast, and high-density residential flat buildings to the west. A large retail shopping centre is present approximately 86 m north of the subject site.

The subject site has a very low level of connectivity to any areas of surrounding native vegetation and is considered subject to a high level of disturbance from pedestrian and vehicle activity.

Figure 1 Existing characteristic of site.

2 PROPOSED DEVELOPMENT

The proposed development comprises the removal of the existing static sign (dimensions 12.66 x 3.35 m) and installation of a new digital monopole advertising sign (dimension 3.172m x 4.708 m) (Figure 2).

The new digital advertising sign provides:

- an advertising display area of 14.93 m^2,
- the continued display of illuminated advertisements (24-hour operation), and
- a maximum night time luminance of 250 cd / m^2.

The proposed digital advertising sign has a 65% smaller advertising display area than the existing 42.41 m^2 illuminated static sign, reducing the extent of signage in the area.

The new sign will be constructed in the vegetated area, adjacent to the Pacific Highway bridge overpass and above the railway line. The Arboricultural Impact Appraisal and Method Statement (Naturally Trees, 2023) confirms no trees are required to be removed as part of the proposed development.

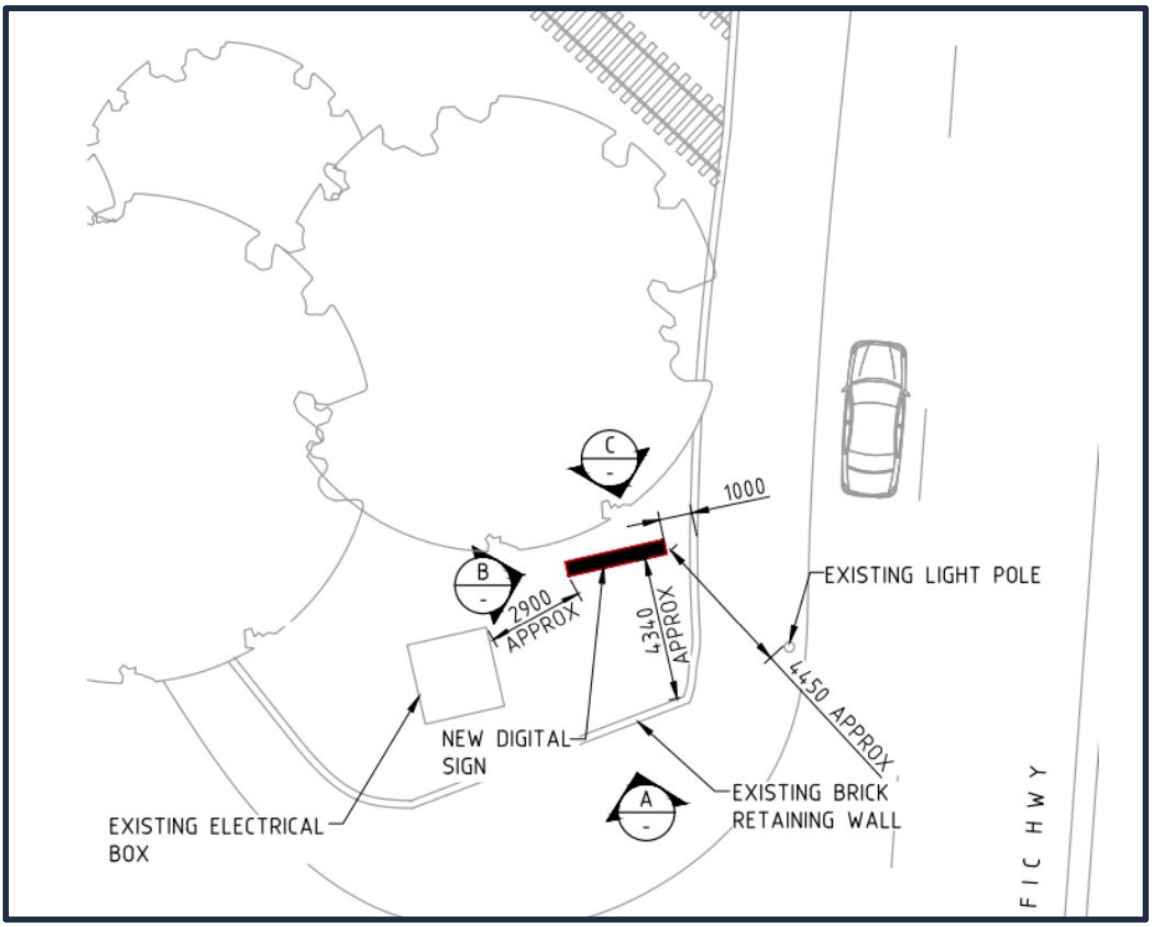


Figure 2 Proposed location of new signage.

3 DESKTOP RESEARCH AND ANALYSIS

ESEA has reviewed background information and data and undertake searches of relevant online databases and mapping of the subject site. The following resources were accessed to develop a comprehensive list of threatened species and ecological communities with potential to occur on the site:

- NSW Biodiversity Values Map (NSW OEH)
- NSW State Vegetation Type Map (NSW DPE)
- BioNet Vegetation Classification (NSW OEH)
- BioNet Atlas of NSW Wildlife (NSW OEH)
- EPBC Protected Matters Search Tool (DAWE)
- NSW Threatened Species Profile Database (DPIE 2020b)

3.1.1 Biodiversity Values Map

The Biodiversity Values (BV) Map is prepared under Part 7 of the BC Act. It identifies land with high biodiversity value that is particularly sensitive to impacts from development and clearing. The map forms part of the Biodiversity Offsets Scheme (BOS) threshold, which is one of the triggers for determining whether the Biodiversity Offset Scheme applies to a clearing or development proposal.

As shown in (Figure 3) the subject site is identified on the BV map. The proposal does not however involve the clearing of vegetation that would trigger entry into the BOS.

3.1.2 BioNet Vegetation Classification

The NSW State Vegetation Type Map is a regional-scale map of NSW Plant Community Types. The map represents the current extent of each Plant Community Type (PCT), Vegetation Class and Vegetation Formation, across all tenures in NSW. PCT mapping provides an indication of the vegetation communities present within the vicinity of the subject site, and a possible reason for the presence of mapped Biodiversity Values areas within the subject site.

According to the NSW State Vegetation Type Mapping, no PCTs are mapped as occurring within the subject site. The nearest mapped PCT (PCT 3136 - Blue Gum High Forest) is approximately 190 m to the south east of the subject site (Figure 4). This area of mapped PCT will not be impacted by the proposed works.

PCT 3136 - Blue Gum High Forest is associated with the following threatened ecological communities:

- Blue Gum High Forest in the Sydney Basin Bioregion (Critically Endangered - BC Act; Critically Endangered - EPBC Act).

The state vegetation mapping indicates that mapped areas of PCT 3136 - Blue Gum High Forest occur in a similar context to vegetation within the subject site, being small remnant patches with a low level of connectivity.

Analysis of historical imagery from the 1940s shows that the subject site and nearest mapped PCT 3136 were located on cleared land, with vegetation evident by the 1960s in the subject site, which is most likely of planted origin (see Figure 5).

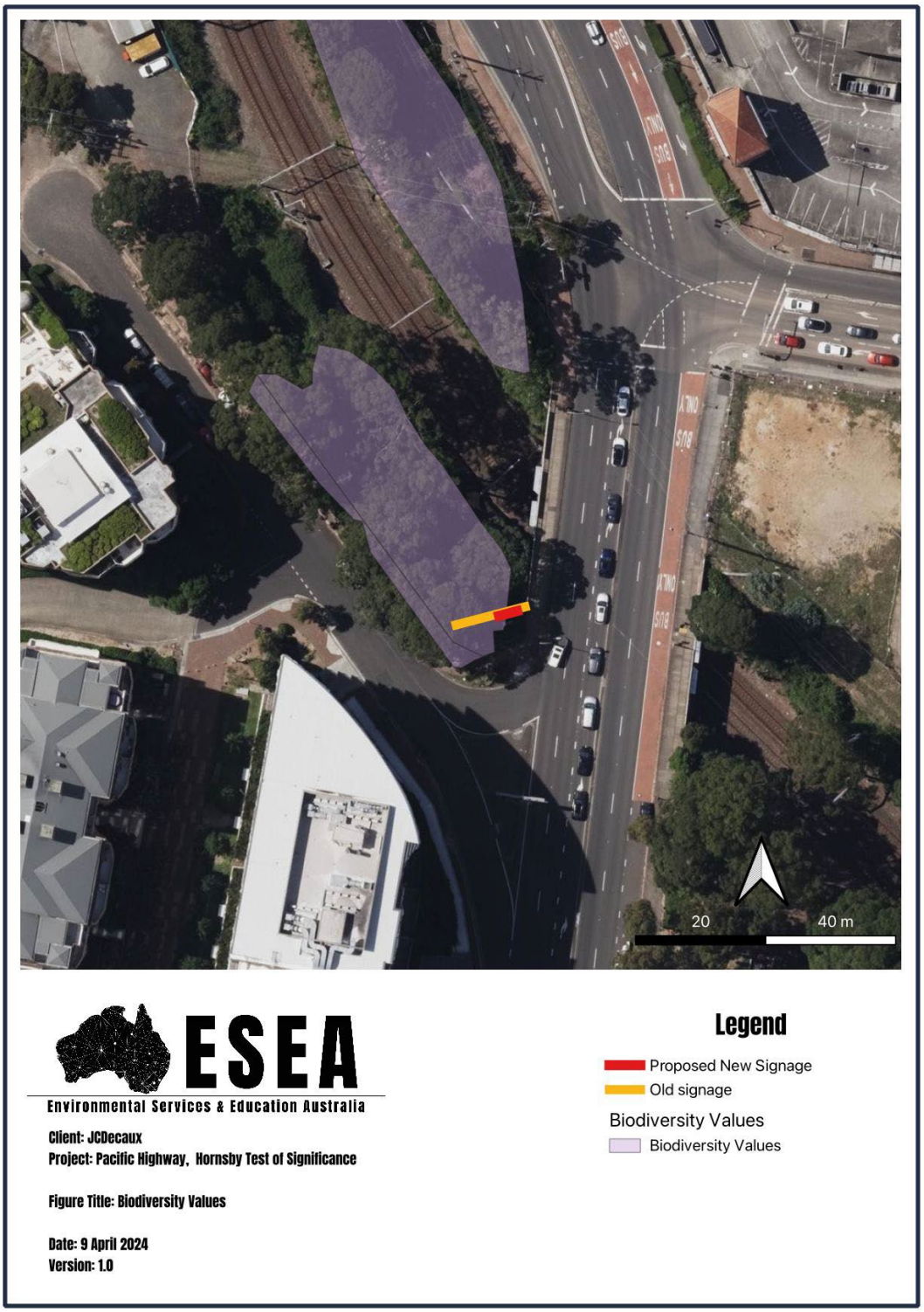


Figure 3 Biodiversity Values Areas

Figure 4 PCT Mapping

Figure 5 1946 historical imagery

3.1.3 NSW Threatened Biodiversity Data Collection

A search of NSW Threatened Biodiversity Data Collection (TBDC) found 1,770 records of 49 species from within 10 kms of the subject site over the past 10 years. Species with a relatively high number of previous records include:

- Red-crowned Toadlet (*Pseudophryne australis*) (Vulnerable – BC Act) (136 records),
- Powerful Owl (*Ninox strenua*) (Vulnerable – BC Act) (517 records),
- Eastern Pygmy Possum (*Cercartetus nanus*) (Vulnerable – BC Act) (104 records),
- Grey-headed Flying Fox (*Pteropus poliocephalus*) (Vulnerable – BC Act; Vulnerable – EPBC Act) (104 records),
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*) (Vulnerable – BC Act) (127 records), and
- *Darwinia biflora* (Vulnerable – BC Act; Vulnerable – EPBC Act) (283 records),

Analysis of the TBDC indicates that the following species have been previously recorded as occurring in close proximity to the subject site (Figure 5):

- Red-crowned Toadlet (*Pseudophryne australis*) (Vulnerable – BC Act),
- Little Lorikeet (*Glossopsitta pusilla*) (Vulnerable – BC Act),

No other threatened species have previously been recorded in close proximity to the subject site.

3.1.4 Likelihood of Occurrence

A Likelihood of Occurrence (Appendix A) has been compiled using information obtained from the TBDC, species profiles and the site characteristics that have been assessed in the desktop review and site inspection. This informs which species have a high probability of occurring within the subject site and guides whether any Test of Significance should be conducted.

The likelihood of occurrence indicates that only Little Lorikeet (*Glossopsitta pusilla*) and Miniopteridae (*Miniopterus australis* – Little Bent-winged Bat & *Miniopterus orianae oceanensis* – Large Bent-winged Bat) have a high likelihood of occurrence within the subject site. These species have been assessed in the Test of Significance in Section 5.

Figure 6 Threatened species records.

4 SITE ASSESSMENT

4.1 Ecological assessment

An ecological assessment of the subject site was conducted by ESEA's ecologist Clayton Woods (BSc Hons – Ecology and Environmental Science – 1st Class, University of Edinburgh).

The site inspection was conducted on Monday 8th April 2024. The purpose of the site inspection was to classify and verify any PCTs / ecological communities present within the site, and to conduct a habitat assessment / identify microhabitats that may support threatened species.

The site assessment found the immediate development area is highly modified and is contained within a small retaining wall to the south, east and west, and boundary fencing to the north.

Vegetation within the footprint of the existing signage, that is likely to be impacted by the proposed works, consisted of groundcover species only – including the native *Lomandra longifolia* (spiny mat rush) and introduced *Ipomoea indica* (blue morning glory), *Sida rhombifolia* (paddy's lucerne), *Cenchrus setaceus* (fountain grass), *Eragrostis curvula* (African lovegrass), *Lantana camara* (lantana), *Asparagus aethiopicus* (ground asparagus), and *Agapanthus praecox* (Agapanthus).

Several trees occur proximal to the works area, which include mature specimens of *Eucalyptus paniculata* (grey ironbark) and mature *Eucalyptus saligna* (Sydney blue gum) and a juvenile *Angophora floribunda* (rough-barked apple).

Boundary fencing protects the surrounding areas of native vegetation and canopy trees from impacts that will likely be caused by the proposed development. Canopy species in this surrounding area include additional *E.saligna*, *A. floribunda*, and *E. paniculata*. Midstratum species included *Pittosporum undulatum* (sweet pittosporum) and the woody weed lantana.

Groundcover species could not be accurately assessed due to access limitations, though appeared to primarily consist of introduced blue morning glory and Paddy's lucerne, with significant leaf litter groundcover present. The vegetation in this area appeared highly degraded and weed infested. It was also small in extent and highly fragmented from any other patches of native vegetation.

The results of the field survey found that the footprint area likely to be impacted by the removal of the old signage and installation of new signage is not representative of any PCT.

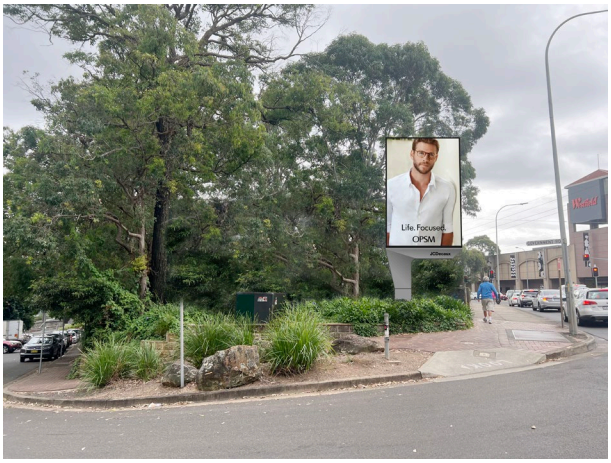
Vegetation immediately surrounding the proposed works area, to the north and west, is representative of low condition PCT 3136 - Blue Gum High Forest. This is based on the presence of the canopy trees *E. saligna*, *A. floribunda*, and *E. paniculata*, and midstratum of *Pittosporum undulatum*.

As such, the Critically Endangered ecological community, Blue Gum High Forest in the Sydney Basin Bioregion has been considered as part of the Test of Significance.

The site inspection determined that the proposed development area does not contain any potential habitat features for threatened fauna such as waterbodies and riparian areas, rocky outcrops, cliffs, or hollow-bearing trees.

In addition, the existing signage does not constitute a potential habitat feature in of itself.

The existing static sign is considerably larger than the newly proposed digital sign as shown in the photo plates below:

	
Existing signage	Proposed signage

Potential impacts on trees will be avoided through the following:

- Using existing service provisions where possible,
- Installation of tree protection measures,
- Locating new ancillary services outside of each tree's structural zone (i.e., associated isolation transformer and pillar) and where unable to avoid tree protection zones the location will be subject to arboriculturist review,
- Cabling will be run underground in chosen routes that will not impact on trees or any species in or around tree protection zones, and
- Supervision of the works by the project arboriculturist (see Section 4.2)

4.2 Arboricultural assessment

An arboricultural assessment was undertaken on 19 July 2023 by Naturally Trees, which identified seven high category and two low category trees located within the garden bed containing the subject site (Table 4-1).

Naturally Trees (2023) concluded that the proposal will not impact on these trees providing the precautions specified in Appendix 6 of the Arboricultural Impact Appraisal and Method Statement (Naturally Trees, July 2023) are implemented.

The precautions include arboriculturalist supervision of all works proximal and within the tree protection zones shown in Figure 7.

Table 4-1. Trees within the subject site

No.	Genus species	Height	Spread	DBH	TPZ	Foliage %	Age class	Defects | Comment	Location	Services	Significance
1	*Angophora floribunda*	8	5	250	**3.0**	70%	S	Nil	Garden	Adjacent structure	L
2	*Eucalyptus paniculata*	22	18	700	**8.4**	80%	M	Nil	Garden	Nil	H
3	*Angophora floribunda*	3	2	100	**2.0**	20%	S	Lopped | Acute dieback	Garden	Nil	L
4	*Angophora floribunda*	8	5	250	**3.0**	70%	S	Nil	Garden	Adjacent structure	L
5	*Angophora floribunda*	9	9	450	**5.4**	80%	M	Nil	Garden	Nil	M
6	*Angophora floribunda*	16	12	450	**5.4**	80%	M	Nil	Garden	Nil	H
7	*Eucalyptus saligna*	14	10	450	**5.4**	80%	M	Nil	Garden	Nil	H
8	*Eucalyptus saligna*	16	14	500	**6.0**	80%	M	Nil	Garden	Nil	H
9	*Angophora floribunda*	2	1	100	**2.0**	20%	S	Lopped | Acute dieback	Garden	Nil	L

Source: Arboricultural assessment, Naturally Trees July 2023)

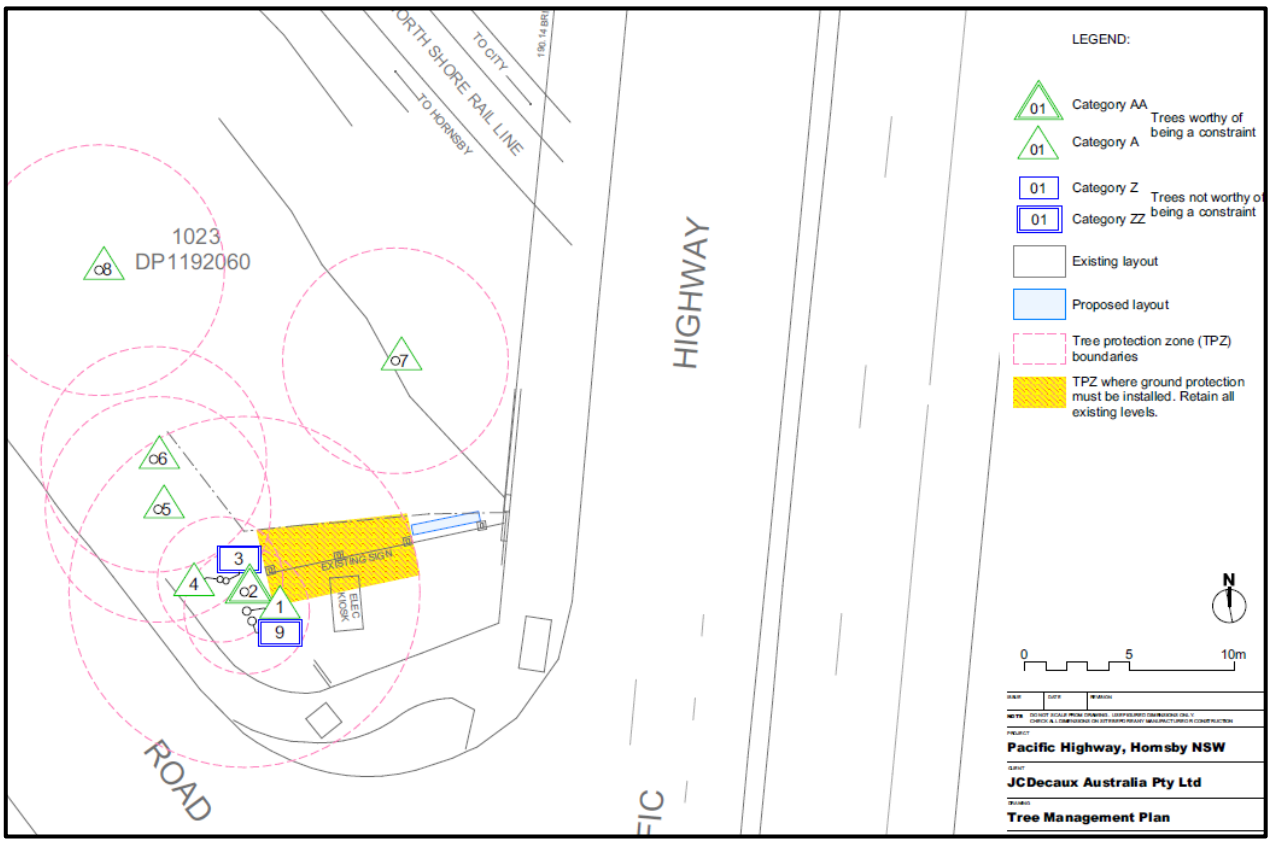


Figure 7 Tree management plan

5 TEST OF SIGNIFICANCE

All species and ecological communities considered likely to occur in the subject site, and known to use that type of habitat, have been considered in the test of significance. Species and ecological communities included in the test of significance include:

- Blue Gum High Forest in the Sydney Basin Bioregion,
- Little Lorikeet (*Glossopsitta pusilla*), and
- Miniopteridae (*Miniopterus australis* – Little Bent-winged Bat & *Miniopterus orianae oceanensis* – Large Bent-winged Bat).

All other species and ecological communities have been excluded from the Test of Significance as recent and reliable data, relating to the subject site and derived from field surveys consistent with NSW guidelines, clearly show that the species:

- does not occur in the subject site, and
- will not use on-site habitats on occasion, and
- will not be influenced by off-site impacts of the proposal.

Species / Ecological Community Blue Gum High Forest in the Sydney Basin Bioregion	
Species Listing Status Critically Endangered - BC Act; Critically Endangered - EPBC Act	
Adverse effects on the life cycle of a species	
(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	N/A
Adverse effects on ecological communities	
(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	The proposed development will not have an adverse effect on the extent of the ecological community. The results of the field survey found that the footprint area that will be disturbed is not representative of a naturally occurring PCT. Vegetation within the disturbance footprint consists of groundcover species only, which is dominated by exotic species and the commonly planted native mat rush. The proposal does not require the removal of any trees and the location of ancillary services will be located outside of Structural Root Zones (SRZs) and wherever possible outside of TPZs. All works will be supervised by the project Arboriculturist and the tree management plan provided by Naturally Trees (July 2023) shall be implemented. Consequently, no adverse impacts are expected.

(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	The proposed development is not likely to substantially or adversely modify the composition of the ecological community. Vegetation within the footprint of the existing signage that will be disturbed during the proposed works consists primarily of introduced species. Other than *Lomandra longifolia,* these species are introduced species that have been planted for amenity value or are invasive weeds that have likely been spread along the adjacent railway line. They are not diagnostic of Blue Gum High Forest in the Sydney Basin Bioregion and their disturbance / removal from the subject site would not constitute damage or loss to the ecological community. The proposed works are small in nature and will not extend beyond the protective fencing that has previously been installed around the mapped BV area. Works within the subject site are not likely to introduce a significant number of weed species beyond what is already present within the area.
Adverse effects on habitats	
(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	No areas of potential habitat for the ecological community will be removed or modified for the proposed development. The subject site has previously been disturbed and modified during the installing of existing signage and landscaping. The existing signage and landscaping have a larger footprint than the proposed new signage. Potential adverse effects on trees will be avoided through the implementation of tree protection measures specified by Naturally Trees (2023). As such, no areas of potential habitat for the ecological community is expected to be disturbed.

(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	No area of potential habitat for the ecological will become fragmented as a result of the proposed development. The subject site is on the edge of a small patch of vegetation within a garden. The subject site has previously been disturbed and modified during the installing of existing signage and landscaping. The existing signage and landscaping have a larger footprint than the proposed new signage. As such, no area of potential habitat for the ecological community is expected to be disturbed. The patch of native vegetation is already fragmented by an existing Sydney Rail corridor, Pacific Highway, pathways and residential developments and shopping facilities.
(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 immediate area of impact is not considered representative of the ecological community Blue Gum High Forest in the Sydney Basin Bioregion. Vegetation within the development footprint consist of non-native species that have been planted for amenity value, or are invasive weed species. As such, the proposed works is not considered likely to remove, fragment, or modify Blue Gum High Forest in the Sydney Basin Bioregion. Vegetation immediately surrounding the subject site will not be impacted by the proposed works.
Adverse effects on areas of outstanding biodiversity value	
(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)	The proposed development will not have an adverse effect on any declared area of outstanding biodiversity value.
Key threatening processes	
(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 proposed development is not part of a key threatening process. The Arboricultural Impact Appraisal and Method Statement confirms no trees are required to be removed for the removal of old signage and installation of new signage.

Species / Ecological Community Little Lorikeet (*Glossopsitta pusilla*)	
Species Listing Status Vulnerable - BC Act	
Adverse effects on the life cycle of a species	
(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	Little Lorikeet forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. The area immediately surrounding the proposed development site contains Angophora species, and potentially provides very poor-quality potential feeding habitat for the species. It is unlikely to be used regularly for feeding activities. The Arboricultural Impact Appraisal and Method Statement confirms no trees are required to be removed for the removal of old signage and installation of new signage. As such, no potential feeding habitat for Little Lorikeet is considered likely to be impacted by the proposed works. Further, no native fruits such as mistletoe and orchards occur within the subject site. Little Lorikeet roost in treetops and nest in hollows in the limb or trunk of smooth-barked Eucalypts. No hollow-bearing trees are present within the subject site. As such, potential nesting habitat is not considered present within the subject site. No potential roosting habitat will be impacted by the proposed works, as no trees are required to be removed for the removal of old signage and installation of new signage. The proposed development is not considered likely to have an adverse effect on the life cycle of the Little Lorikeet such that a viable local population of the species is likely to be placed at risk of extinction
Adverse effects on ecological communities	
(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	N/A

(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	N/A
Adverse effects on habitats	
(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	The Arboricultural Impact Appraisal and Method Statement confirms no trees are required to be removed for the removal of old signage and installation of new signage. As such, no potential feeding habitat for Little Lorikeet is considered likely to be impacted by the proposed works. Further, no native fruits such as mistletoe and orchards occur within the subject site. Little Lorikeet roost in treetops and nest in hollows in the limb or trunk of smooth-barked Eucalypts. No hollow-bearing trees are present within the subject site. As such, potential nesting habitat is not considered present within the subject site. No potential roosting habitat will be impacted by the proposed works, as no trees are required to be removed for the removal of old signage and installation of new signage.

(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	No area of potential habitat for Little Lorikeet is expected to become fragmented as a result of the proposed development. The subject site is on the edge of a very small patch of native vegetation, which possesses an extremely low level of connectivity to surrounding areas of native vegetation. There is no similar area of vegetation to the south, east, or west of the subject site. The surrounding area is characterised by the presence of Pacific Highway immediately east of the subject site and an established Sydney Trains corridor immediately north of the subject site. It is also surrounded by mixed use buildings to the southwest and southeast, and high density residential flat buildings to the west. A large retail shopping centre is present approximately 86 m north of the subject site. These features result in the subject site having a very low level of connectivity to any areas of surrounding native vegetation, and cause the subject site to have a constant, high level of disturbance. For these reasons, the vegetation surrounding the subject site constitute very poor-quality potential feeding habitat. Any damage or loss of this habitat is not likely to significantly affect the species. The subject site has previously been disturbed and modified during the installing of existing signage and landscaping. The existing signage and landscaping have a larger footprint than the proposed new signage. As such, not additional area of potential habitat for the species is expected to be disturbed.
(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 area to be impacted is considered poor quality potential feeding habitat that is not likely to be used regularly by Little Lorikeet. The proposed works does not constitute a loss of important habitat for the species.
Adverse effects on areas of outstanding biodiversity value	
(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)	The proposed development will not have an adverse effect on any declared area of outstanding biodiversity value.
Key threatening processes	
(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 proposed development is not part of a key threatening process. The Arboricultural Impact Appraisal and Method Statement confirms no trees are required to be removed for the removal of old signage and installation of new signage.

Species / Ecological Community (Miniopteridae) *Miniopterus australis* – Little Bent-winged Bat *Miniopterus orianae oceanensis* – Large Bent-winged Bat	
Species Listing Status Vulnerable - BC Act	
Adverse effects on the life cycle of a species	
(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	Miniopteridae can be found roosting in tunnels, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats. These habitat features may be present within the nearby railway corridor, and within the underpass of Pacific Highway. Miniopteridae, may on occasion, feed within the native vegetation surrounding the subject site. Although in close proximity to the proposed works, these potential habitat features will not be impacted by the removal of old signage and installation of new signage. The Arboricultural Impact Appraisal and Method Statement confirms no trees are required to be removed for the removal of old signage and installation of new signage. As such, no potential roosting habitat for Miniopteridae is considered likely to be impacted by the proposed works. The proposed development is not considered likely to have an adverse effect on the life cycle of Miniopteridae such that a viable local species population is likely to be placed at risk of extinction.
Adverse effects on ecological communities	
(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	N/A

(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	N/A
Adverse effects on habitats	
(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	Miniopteridae can be found roosting in tunnels, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats. These habitat features may be present within the nearby railway corridor, and within the underpass of Pacific Highway. Although in close proximity to the proposed works, these potential habitat features will not be impacted by the removal of old signage and installation of new signage. No potential roosting habitat for Miniopteridae is considered likely to be impacted by the proposed works. Both the old and new signage will be subject to 24-hour illumination. Light pollution may have impacts on food availability due to insects being attracted to light sources. The illumination effect of the new signage will be less than that of the old signage. It is of note, that the subject site is already subject to high levels of light pollution due to surrounding street lighting along Pacific Highway and Government Road, as well as from surrounding residential buildings and shopping complexes. A slight decrease in the level of light pollution caused by the smaller size of the new signage may result in a decreased risk of predation on Miniopteridae, reducing pressures on the species. The proposed development is not considered likely to have an adverse effect on the life cycle of Miniopteridae such that a viable local species population is likely to be placed at risk of extinction.

(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	No area of potential habitat for Miniopteridae is expected to become fragmented as a result of the proposed development. The surrounding area is characterised by the presence of Pacific Highway immediately east of the subject site and an established Sydney Trains corridor immediately north of the subject site. It is also surrounded by mixed use buildings to the southwest and southeast, and high density residential flat buildings to the west. A large retail shopping centre is present approximately 86 m north of the subject site. These features result in the subject site having a very low level of connectivity to any areas of surrounding native vegetation, and cause the subject site to have a constant, high level of disturbance. The subject site has previously been disturbed and modified during the installing of existing signage and landscaping. The existing signage and landscaping has a larger footprint than the proposed new signage. As such, not additional area of potential habitat for the species is expected to be disturbed.
(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	No area of potential roosting habitat for Miniopteridae is expected to be removed, modified or fragmented as a result of the proposed development.
Adverse effects on areas of outstanding biodiversity value	
(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)	The proposed development will not have an adverse effect on any declared area of outstanding biodiversity value.
Key threatening processes	
(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 proposed development is not part of a key threatening process.

6 CONCLUSION

This assessment has found that the proposed development will not have a significant impact on any threatened species, populations or communities either directly or indirectly.

Mapped Biodiversity Values will not be cleared and therefore the BOS threshold has not been exceeded. Application of the Biodiversity Assessment Method (OEH 2020) and preparation of a Biodiversity Development Assessment Report is not required to support the development application.

Clayton Woods
Director – Environment Services & Education Australia

Kat Duchatel
Director écologique

APPENDIX A – LIKELIHOOD OF OCCURRENCE

Class	Family	*Scientific Name*	Common Name	NSW Status	Comm. Status	Records	Description	Likelihood
Amphibia	Myobatrachidae	*Pseudophryne australis*	Red-crowned Toadlet	V,P		136	Occurs in open forests, mostly on Hawkesbury and Narrabeen Sandstones. Inhabits periodically wet drainage lines below sandstone ridges that often have shale lenses or cappings. Shelters under rocks and amongst masses of dense vegetation or thick piles of leaf litter. Breeding congregations occur in dense vegetation and debris beside ephemeral creeks and gutters. Red-crowned Toadlets have not been recorded breeding in waters that are even mildly polluted or with a pH outside the range 5.5 to 6.5.	Moderate (High number of previous sightings, and previously recorded in proximity to subject site, but no potential habitat present)
Amphibia	Limnodynastidae	*Heleioporus australiacus*	Giant Burrowing Frog	V,P	V	1	Found in heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based. Spends more than 95% of its time in non-breeding habitat in areas up to 300 m from breeding sites. Whilst in non-breeding habitat it burrows below the soil surface or in the leaf litter.	Low (Few records & no potential habitat)
Reptilia	Varanidae	*Varanus rosenbergi*	Rosenberg's Goanna	V,P		4	Found in heath, open forest and woodland. Associated with termites, the mounds of which this species nests in; termite mounds are a critical habitat component. Individuals require large areas of habitat.	Low (Few records & no potential habitat)
Aves	Apodidae	*Hirundapus caudacutus*	White-throated Needletail	P	V,C,J,K	6	In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable, but there are, nevertheless, certain preferences exhibited by the species. They are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland.	Low (Few records & no potential habitat)

Class	Family	*Scientific Name*	Common Name	NSW Status	Comm. Status	Records	Description	Likelihood
Aves	Procellariidae	*Ardenna tenuirostris*	Short-tailed Shearwater	P	C,J,K	1	The Short-tailed Shearwater is found in coastal waters. The Short-tailed Shearwater establishes massive breeding colonies off the southern and south-eastern coasts of Australia each year.	Low (Few records & no potential habitat)
Aves	Accipitridae	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P		1	Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Occurs at sites near the sea or sea-shore, such as around bays and inlets, beaches, reefs, lagoons, estuaries and mangroves; and at, or in the vicinity of freshwater swamps, lakes, reservoirs, billabongs and saltmarsh. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, and forest (including rainforest). Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat. Nest trees are typically large emergent eucalypts and often have emergent dead branches or large dead trees nearby which are used as 'guard roosts'. Nests are large structures built from sticks and lined with leaves or grass.	Low (Few records & no potential habitat)
Aves	Accipitridae	^^*Lophoictinia isura*	Square-tailed Kite	V,P,3		10	Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses. In arid north-western NSW, has been observed in stony country with a ground cover of chenopods and grasses, open acacia scrub and patches of low open eucalypt woodland. Appears to occupy large hunting ranges of more than 100 km^2.	Low (Few records & no potential habitat)
Aves	Charadriidae	*Pluvialis squatarola*	Grey Plover	P	C,J,K	2	In Australia, the Grey Plover has been recorded in all states, where it is found along the coasts. The species is only occasionally recorded along the coast of NSW	Low (Few records & no potential habitat)

Class	Family	*Scientific Name*	Common Name	NSW Status	Comm. Status	Records	Description	Likelihood
Aves	Cacatuidae	^^*Callocephalon fimbriatum*	Gang-gang Cockatoo	V,P,3	E	1	In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests.In autumn and winter, the species often moves to lower altitudes in drier more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas. Nests are located in hollows that are 10 cm in diameter or larger and at least 9 m above the ground in eucalypts.	Low (Few records & limited potential habitat)
Aves	Cacatuidae	^*Calyptorhynchus lathami lathami*	South-eastern Glossy Black-Cockatoo	V,P,2	V	5	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. Dependent on large hollow-bearing eucalypts for nest sites.	Low (Few records & limited potential habitat)
Aves	Psittacidae	*Glossopsitta pusilla*	Little Lorikeet	V,P		2	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. Isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also help sustain viable populations of the species. Feeds mostly on nectar and pollen, occasionally on native fruits such as mistletoe, and only rarely in orchards	High (Previously recorded in close proximity to site and low-quality potential habitat present)
Aves	Psittacidae	*Lathamus discolor*	Swift Parrot	E1,P	CE	5	Migrates to the Australian south-east mainland between February and October. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany, Spotted Gum, Red Bloodwood, Forest Red Gum, Mugga Ironbark, and White Box.	Low (Few records & limited potential habitat)

Class	Family	*Scientific Name*	Common Name	NSW Status	Comm. Status	Records	Description	Likelihood
Aves	Psittacidae	^^*Neophema pulchella*	Turquoise Parrot	V,P,3		1	Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. Usually seen in pairs or small, possibly family, groups and have also been reported in flocks of up to thirty individuals. Prefers to feed in the shade of a tree and spends most of the day on the ground searching for the seeds or grasses and herbaceous plants, or browsing on vegetable matter.	Low (Few records & limited potential habitat)
Aves	Strigidae	^^*Ninox connivens*	Barking Owl	V,P,3		1	Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats (e.g. western NSW) due to the higher density of prey found on these fertile riparian soils. Roost in shaded portions of tree canopies, including tall midstorey trees with dense foliage such as Acacia and Casuarina species. Requires very large permanent territories in most habitats due to sparse prey densities.	Low (Few records & limited potential habitat)
Aves	Strigidae	^^*Ninox strenua*	Powerful Owl	V,P,3		517	The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. The Powerful Owl requires large tracts of forest or woodland habitat but can occur in fragmented landscapes as well. The species breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. It roosts by day in dense vegetation comprising species such as Turpentine, Black She-oak, Blackwood, Rough-barked Apple, Cherry Ballart and a number of eucalypt species.	Moderate (high number of previous recordings, but limited potential habitat)
Aves	Tytonidae	^^*Tyto novaehollandiae*	Masked Owl	V,P,3		2	Lives in dry eucalypt forests and woodlands from sea level to 1100 m. A forest owl, but often hunts along the edges of forests, including roadsides.	Low (Few records & limited potential habitat)

Class	Family	*Scientific Name*	Common Name	NSW Status	Comm. Status	Records	Description	Likelihood
Mammalia	Dasyuridae	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	2	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites.	Low (Few records & limited potential habitat)
Mammalia	Phascolarctidae	*Phascolarctos cinereus*	Koala	E1,P	E	11	Inhabit eucalypt woodlands and forests. Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species.	Low (Few records & limited potential habitat)
Mammalia	Burramyidae	*Cercartetus nanus*	Eastern Pygmy-possum	V,P		104	Found in a broad range of habitats from rainforest through sclerophyll forest and woodland to heath, but in most areas woodlands and heath appear to be preferred. Feeds largely on nectar and pollen collected from banksias, eucalypts and bottlebrushes; an important pollinator of heathland plants such as banksias; soft fruits are eaten when flowers are unavailable.	Low (No potential habitat)
Mammalia	Pteropodidae	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	104	Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.	Moderate (High number of previous records, but limited potential habitat)
Mammalia	Emballonuridae	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		1	Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.	Low (Few records & limited potential habitat)
Mammalia	Molossidae	*Micronomus norfolkensis*	Eastern Coastal Free-tailed Bat	V,P		11	Occur in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roost mainly in tree hollows but will also roost under bark or in man-made structures.	Low (No potential habitat)

Class	Family	*Scientific Name*	Common Name	NSW Status	Comm. Status	Records	Description	Likelihood
Mammalia	Vespertilionidae	*Chalinolobus dwyeri*	Large-eared Pied Bat	V,P	E	2	Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin, frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in sandstone caves and overhangs. Also found in well-timbered areas containing gullies.	Low (Few records & limited potential habitat)
Mammalia	Vespertilionidae	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V,P		2	Prefers moist habitats, with trees taller than 20 m. Generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings.	Low (Few records & limited potential habitat)
Mammalia	Vespertilionidae	*Myotis macropus*	Southern Myotis	V,P		10	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.	Low (Few records & limited potential habitat)
Mammalia	Vespertilionidae	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		11	Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects; this species has been known to eat other bat species.	Low (Few records & limited potential habitat)

Class	Family	*Scientific Name*	Common Name	NSW Status	Comm. Status	Records	Description	Likelihood
Mammalia	Miniopteridae	*Miniopterus australis*	Little Bent-winged Bat	V,P		70	Found in moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Generally found in well-timbered areas. Little Bentwing-bats roost in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats. They often share roosting sites with the Common Bentwing-bat and, in winter, the two species may form mixed clusters. Only five nursery sites /maternity colonies are known in Australia.	High (High number of previous sightings, but limited suitable habitat)
Mammalia	Miniopteridae	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V,P		127	Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. At other times of the year, populations disperse within about 300 km range of maternity caves. Cold caves are used for hibernation in southern Australia. Hunt in forested areas, catching moths and other flying insects above the tree tops.	High (High number of previous sightings, but limited suitable habitat)
Gastropoda	Camaenidae	*Pommerhelix duralensis*	Dural Land Snail	E1	E	2	The species has a strong affinity for communities in the interface region between shale-derived and sandstone-derived soils, with forested habitats that have good native cover and woody debris. It favours sheltering under rocks or inside curled-up bark. It does not burrow nor climb. The species has also been observed resting in exposed areas, such as on exposed rock or leaf litter, however it will also shelter beneath leaves, rocks and light woody debris.	Low (Limited previous sightings, No potential habitat)

Class	Family	*Scientific Name*	Common Name	NSW Status	Comm. Status	Records	Description	Likelihood
Flora	Dilleniaceae	*^Hibbertia spanantha*	Julian's Hibbertia	E4A,2	CE	4	Habitat of the Southern Sydney population is broadly dry eucalypt forest and woodland. This population appears to occur mainly on upper slopes and above the Woronora River gorge escarpment, at or near the interface between the Lucas Heights soil landscape and Hawkesbury sandstone. Toelken & Miller (2012) note that the species usually grows in 'gravelly loam or clay soil in heath under open woodland'.	None (Not recorded in the subject site)
Flora	Elaeocarpaceae	*Tetratheca glandulosa*		V		66	Associated with shale-sandstone transition habitat where shale-cappings occur over sandstone, with associated soil landscapes such as Lucas Heights, Gymea, Lambert and Faulconbridge. Topographically, the plant occupies ridgetops, upper-slopes and to a lesser extent mid-slope sandstone benches. Soils are generally shallow, consisting of a yellow, clayey/sandy loam. Stony lateritic fragments are also common in the soil profile on many of these ridgetops.	None (Not recorded in the subject site)
Flora	Ericaceae	*Epacris purpurascens var. purpurascens*		V		79	Recorded from Gosford in the north, to Narrabeen in the east, Silverdale in the west and Avon Dam vicinity in the South. Found in a range of habitat types, most of which have a strong shale soil influence.	None (Not recorded in the subject site)
Flora	Fabaceae (Mimosoideae)	*Acacia bynoeana*	Bynoe's Wattle	E1	V	1	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. Associated overstorey species include Red Bloodwood, Scribbly Gum, Parramatta Red Gum, Saw Banksia and Narrow-leaved Apple.	None (Not recorded in the subject site)
Flora	Fabaceae (Mimosoideae)	*Acacia pubescens*	Downy Wattle	V	V	33	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.	None (Not recorded in the subject site)

Class	Family	*Scientific Name*	Common Name	NSW Status	Comm. Status	Records	Description	Likelihood
Flora	Grammitidaceae	^^*Grammitis stenophylla*	Narrow-leaf Finger Fern	E1,3		4	Moist places, usually near streams, on rocks or in trees, in rainforest and moist eucalypt forest.	None (Not recorded in the subject site)
Flora	Haloragaceae	*Haloragodendron lucasii*		E1	E	21	Associated with dry sclerophyll forest. Reported to grow in moist sandy loam soils in sheltered aspects, and on gentle slopes below cliff-lines near creeks in low open woodland. Associated with high soil moisture and relatively high soil-phosphorus levels.	None (Not recorded in the subject site)
Flora	Hygrophoraceae	*Hygrocybe austropratensis*		E1		2	Occurs in gallery warm temperate forests dominated by Lilly Pilly, Grey Myrtle, Cheese Tree and Sweet Pittosporum. Associated with alluvial sandy soils of the Hawkesbury Soil Landscapes with naturally low fertility and erodible.	None (Not recorded in the subject site)
Flora	Myrtaceae	^^*Callistemon linearifolius*	Netted Bottle Brush	V,3		3	Recorded from the Georges River to Hawkesbury River in the Sydney area, and north to the Nelson Bay area of NSW. Recorded in 2000 at Coalcliff in the northern Illawarra. For the Sydney area, recent records are limited to the Hornsby Plateau area near the Hawkesbury River. Three of the remaining populations are reserved in Ku-ring-gai Chase National Park, Lion Island Nature Reserve and Spectacle Island Nature Reserve. The species has also been recorded from Yengo National Park.	None (Not recorded in the subject site)
Flora	Myrtaceae	*Darwinia biflora*		V	V	283	Occurs on the edges of weathered shale-capped ridges, where these intergrade with Hawkesbury Sandstone. Associated overstorey species include *Eucalyptus haemastoma, Corymbia gummifera* and/or *E. squamosa*. The vegetation structure is usually woodland, open forest or scrub-heath.	None (Not recorded in the subject site)
Flora	Myrtaceae	*Eucalyptus camfieldii*	Camfield's Stringybark	V	V	2	Poor coastal country in shallow sandy soils overlying Hawkesbury sandstone. Coastal heath mostly on exposed sandy ridges. Occurs mostly in small scattered stands near the boundary of tall coastal heaths and low open woodland of the slightly more fertile inland areas.	None (Not recorded in the subject site)

Class	Family	*Scientific Name*	Common Name	NSW Status	Comm. Status	Records	Description	Likelihood
Flora	Myrtaceae	*Melaleuca deanei*	Deane's Paperbark	V	V	23	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.	None (Not recorded in the subject site)
Flora	Myrtaceae	*Rhodamnia rubescens*	Scrub Turpentine	E4A	CE	3	Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils.	None (Not recorded in the subject site)
Flora	Myrtaceae	*Syzygium paniculatum*	Magenta Lilly Pilly	E1	V	8	On the south coast the Magenta Lilly Pilly occurs on grey soils over sandstone, restricted mainly to remnant stands of littoral (coastal) rainforest. On the central coast Magenta Lilly Pilly occurs on gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities.	None (Not recorded in the subject site)
Flora	Orchidaceae	*^Cryptostylis hunteriana*	Leafless Tongue Orchid	V,P,2	V	2	Does not appear to have well defined habitat preferences and is known from a range of communities, including swamp-heath and woodland. The larger populations typically occur in woodland dominated by Scribbly Gum, Silvertop Ash, Red Bloodwood and Black Sheoak.	None (Not recorded in the subject site)
Flora	Orchidaceae	*^Genoplesium baueri*	Bauer's Midge Orchid	E1,P,2	E	3	The species has been recorded from locations between Ulladulla and Port Stephens. About half the records were made before 1960 with most of the older records being from Sydney suburbs including Asquith, Cowan, Gladesville, Longueville and Wahroonga. No collections have been made from those sites in recent years.	None (Not recorded in the subject site)
Flora	Orchidaceae	*^Rhizanthella slateri*	Eastern Australian Underground Orchid	V,P,2	E	1	Habitat requirements are poorly understood and no particular vegetation type has been associated with the species, although it is known to occur in sclerophyll forest. Highly cryptic given that it grows almost completely below the soil surface, with flowers being the only part of the plant that can occur above ground. Therefore usually located only when the soil is disturbed.	Low

Class	Family	*Scientific Name*	Common Name	NSW Status	Comm. Status	Records	Description	Likelihood
Flora	Proteaceae	*Persoonia mollis subsp. maxima*		E1,P	E	76	Occurs in sheltered aspects of deep gullies or on the steep upper hillsides of narrow gullies on Hawkesbury Sandstone. These habitats support relatively moist, tall forest vegetation communities, often with warm temperate rainforest influences.	None (Not recorded in the subject site)