Flora and Fauna Assessment Report - 600-660 Elizabeth Street, Redfern

NSW Land and Housing Corporation

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Template 2.8.1

Contents

List of Figures

List of Tables

Abbreviations

Abbreviation	Description
BC Act	*Biodiversity Conservation Act 2016*
BOS	Biodiversity Offset Scheme
CHP	Community Housing Project
CoS	City of Sydney
DCP	Development Control Plan
DotEE	Commonwealth Department of the Environment and Energy
DP&E	Department of Planning and Environment
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
FM Act	*Fisheries Management Act 1994*
LaHC	NSW Land and Housing Corporation
LEP	Local Environment Plan
LGA	Local Government Area
LLS	Local Land Services
LLS Act	*Local Land Services Act 2013*
MNES	Matters of national environmental significance
NP&W Act	*National Parks and Wildlife Act 1974*
SEPP	State Environmental Planning Policy
UESAP	City of Sydney Urban Ecology Strategic Action Plan

Executive Summary

This Flora and Fauna Assessment report has been prepared on behalf of NSW Land and Housing Corporation (LaHC) to accompany a Planning Proposal to be lodged with the City of Sydney (Council), which would be assessed under Part 3 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). .

This Planning Proposal relates to land at 600-660 Elizabeth Street, Redfern (the study area). The Planning Proposal seeks to rezone the study area to allow redevelopment for a mix of social, affordable and private housing in an integrated residential community. The aims of the Planning Proposal are to rezone the study area to B4 Mixed Use. In November 2019 the Minister of Planning and Public Spaces announced that the Redfern project would change from a State Significant Precinct planning pathway to a Planning Proposal pathway led by Council. Accordingly, the study requirements from the earlier planning pathway are dealt with in this report.

An indicative reference scheme and urban design report has been prepared to support the Planning Proposal and demonstrates how the study area could be redeveloped. The indicative reference scheme comprises:

- approximately 327 dwellings, with building heights ranging between 6 and 14 storeys;
- a mixed-use development, with over 1,500m^2 of non-residential floor space for local shops, cafes, community space and other services; and
- three ground floor communal courtyard spaces.

This report addresses the potential impacts of the development proposal on threatened species and ecological communities listed under the *Biodiversity Conservation Act 2016* (BC Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Field survey identified that a majority of the study area contained planted native and exotic tree species and a managed understorey. The canopy species present did not conform to any ecological community but are likely to provide foraging habitat for a range of birds which typically utilise urban environments. The study area is likely to provide foraging habitat for *Pteropus poliocephalus* (Grey-headed Flying-fox), a vulnerable species under the BC Act and EPBC Act.

No threatened ecological communities were considered likely to occur in the study area. This Flora and Fauna Assessment report has assessed potential impacts to ecological values based on a worst-case scenario. Applications of Tests of Significance consistent with Section 7.3 of the BC Act and EPBC Act Significant Impact Criteria should be applied to the Grey-headed Flying-fox when a Development Application is submitted to Council.

One threatened flora species *Syzygium paniculatum* (Magenta Lilly Pilly), listed as endangered under the BC Act and vulnerable under the EPBC Act, was identified during the survey. This individual is a planted street tree and is occurring outside of its natural range. An assessment of significance and the application of Significant Impact Criteria is not recommended.

The proposal was considered in relation to the BC Act. The assessment concluded that based on the indicative reference scheme, the proposal would not trigger the Biodiversity Offsets Scheme and is unlikely to require referral to Department of Environment and Energy for impacts to Matters of National Environmental Significance identified in the study area.

An assessment of ecological tree retention value was undertaken to inform a future master plan for the study area. Trees along the periphery of the study area were retained.

Section 3.5 of the City of Sydney Development Control Plan 2012 includes consideration of tree canopy retention for development throughout the local government area. Recommendations have been made to enable future development to remain consistent with the DCP.

1. Introduction

Eco Logical Australia Pty Ltd (ELA) was engaged by NSW Land and Housing Corporation to prepare a Flora and Fauna Assessment report to accompany a Planning Proposal to support the rezoning of 600 – 660 Elizabeth Street, Redfern (Lot 1 DP 1249145; Figure 1).

This report describes the native vegetation, threatened species, populations and communities and associated habitat features present based on information gathered from data searches and field investigations. The report sets out the legislative context, methods used, areas of high ecological retention value and recommendations to minimise these impacts. This report also considers the retention of locally significant flora species, urban native vegetation corridors and native fauna species. This Flora and Fauna assessment addresses the requirements outlined in **Section 1.3**.

1.1 Project description

600-660 Elizabeth Street, Redfern (the Site) will be transformed into a market leading build-to-rent redevelopment featuring contemporary urban and architectural design and creating a high-quality integrated community of social, affordable and private housing.

1.1.1 Communities Plus Built to Rent

Communities Plus is a key program under NSW Government's *Future Directions for Social Housing in NSW* (Future Directions), delivering integrated social, affordable and private housing by partnering with the private and not for profit sectors including registered Tier 1 or Tier 2 Community Housing Providers (CHPs).

The Redfern project aligns with Future Directions, by providing innovative options for private sector investment in social housing under a long-term lease. The project presents an opportunity to renew and increase social housing in a well-located integrated community with good access to education, training, local employment, and close to community facilities such as shopping, health services and transport.

On 6 July 2018, the NSW Government announced the study area as the pilot for Communities Plus build-to-rent. The Project provides an opportunity for the private sector, in partnership with the not-for-profit sector, to fund, design, develop and manage the buildings as rental accommodation under a long-term lease.

Build-to-rent is a new residential housing delivery framework that is capable of providing access to broader housing choices. Established in overseas markets such as the UK and the USA, locally, build-to-rent has significant scope to provide increased rental housing supply and the opportunity for investment in residential housing in NSW.

1.1.2 Vision, Reference Scheme and Planning Framework

This Planning Proposal relates to land at 600-660 Elizabeth Street, Redfern (the Site). The Planning Proposal seeks to rezone the study areae to allow redevelopment for a mix of social, affordable and private housing in an integrated residential community. The aims of the Planning Proposal are to rezone the Site to B4 Mixed Use.

An indicative reference scheme and urban design report has been prepared to support the Planning Proposal and demonstrates how the study area may be redeveloped (Figure 2 and Figure 3). The indicative reference scheme comprises:

- approximately 327 dwellings, with building heights ranging between 6 and 14 storeys
- a mixed-use development, with over 1,500m^2 of non-residential floor space for local shops, cafes, community space and other services
- three ground floor communal courtyard spaces.

1.2 Site description

The study area is located within the City of Sydney Local Government Area and is approximately 3 km from the Sydney CBD. The study area is in a highly urbanised area and is surrounded by a range of residential densities, including low density to the south and medium / high density to the north and east. The study area is directly across Elizabeth Street from Redfern Park.

A portion of the study area contains a Police Citizens Youth Club building, sports and ancillary facilities and planted native and exotic tree species.

The *study area* refers to the area shown in Figure 1.

1.3 Study Requirements

In November 2019 the Minister of Planning and Public Spaces announced that the Redfern project would change from a State Significant Precinct planning pathway to a Planning Proposal pathway led by the CoS. Subsequently, a Planning Proposal Lodgement Checklist was issued by Council. The Planning Proposal checklist items relevant to biodiversity and ecology are limited to addressing the General Provisions in Section 3.5 Urban Ecology of the Sydney DCP 2012. These are considered in this section and recommendations have been made to enable future development to remain consistent with the DCP (**Section 6**).

Previous study requirements issued by the Department of Planning and Environment in 2018, as part of the nomination for the Site as a State Significant Precinct, are also dealt with in this report. The study requirements (associated with with respect to biodiversity and ecology include:

- Demonstrate how the project can address the City of Sydney Urban Forest Strategy, in particular the following targets;
  - minimum canopy cover of 25% for the site and 60% to streets. If the minimum canopy cover cannot be achieved, demonstrate how the shortfall is offset by increasing and installing new canopy cover in surrounding streets
  - species diversity targets of 40% family, 40% genus and 10% species; and
  - minimum distribution of tree heights of 20% small trees (5-6m), 50% medium trees (6-15m) and 30% large trees (15-25m) (**Section 4.4**).
- Demonstrate how the proposal complies with NSW Government and Council policies, strategies, master plans including SLEP, SDCP, Urban Forest Strategy, Tree Management Policy, Street Tree Master Plan, Urban Ecology Strategic Action Plan and Landscape Code. If any policy / strategy is not complied with, demonstrate the implications of compliance to the project and give

sufficient environmental planning grounds why such compliance is unreasonable or unnecessary (**Section 4.3** and **Section 6.4**).

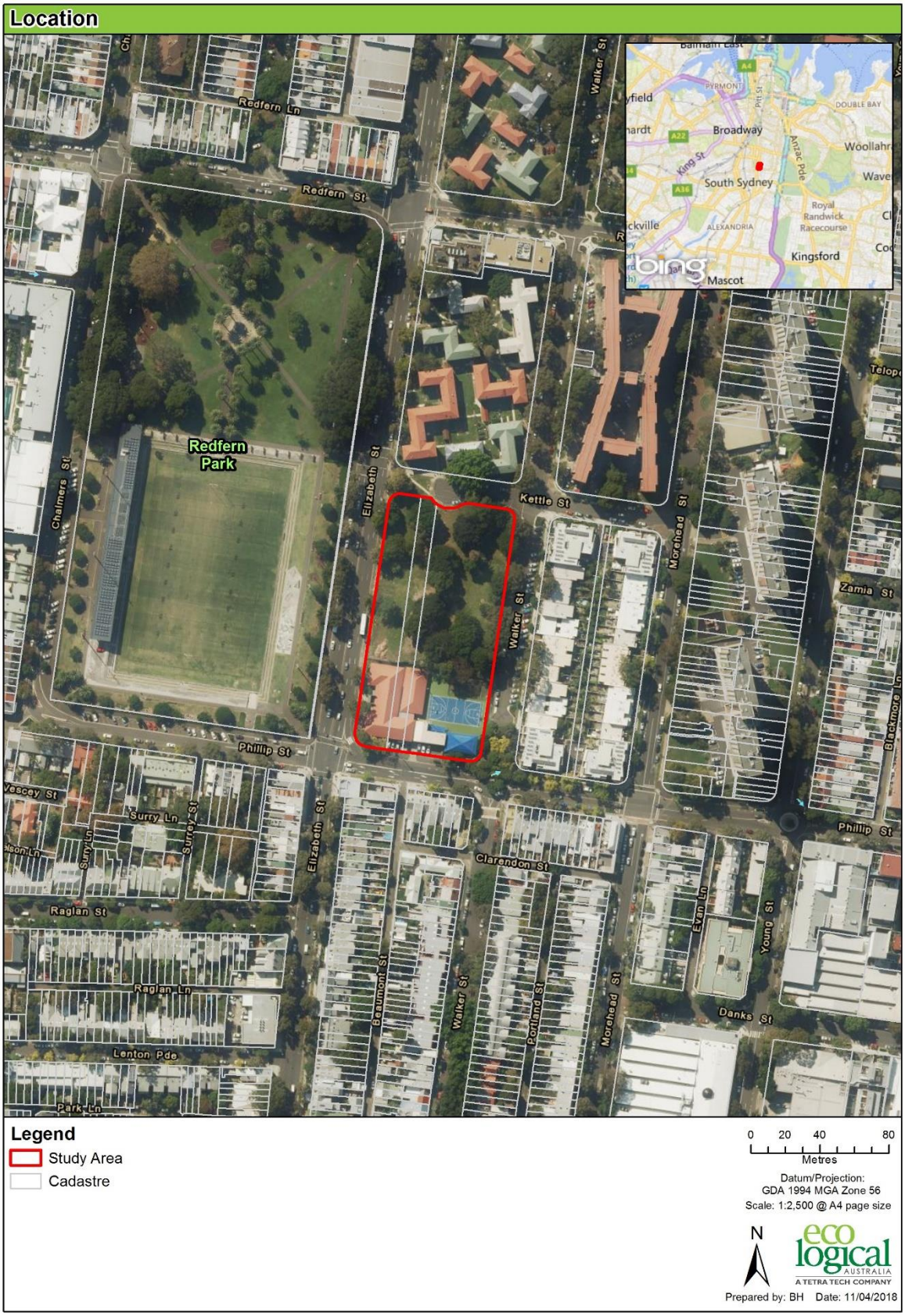

Figure 1: Location of the study area

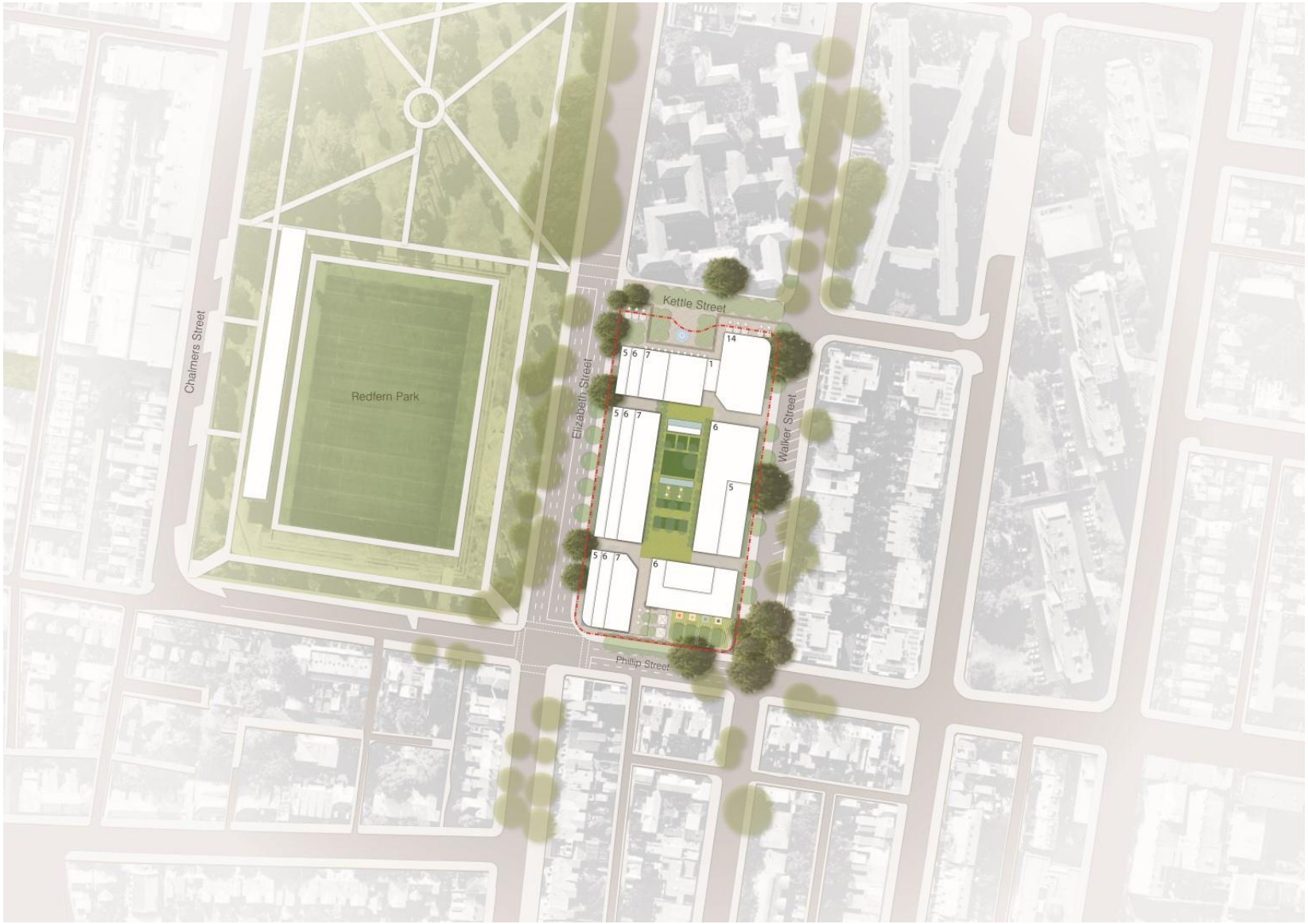

Figure 2: Indicative Reference Scheme (supplied by LaHC 2020)

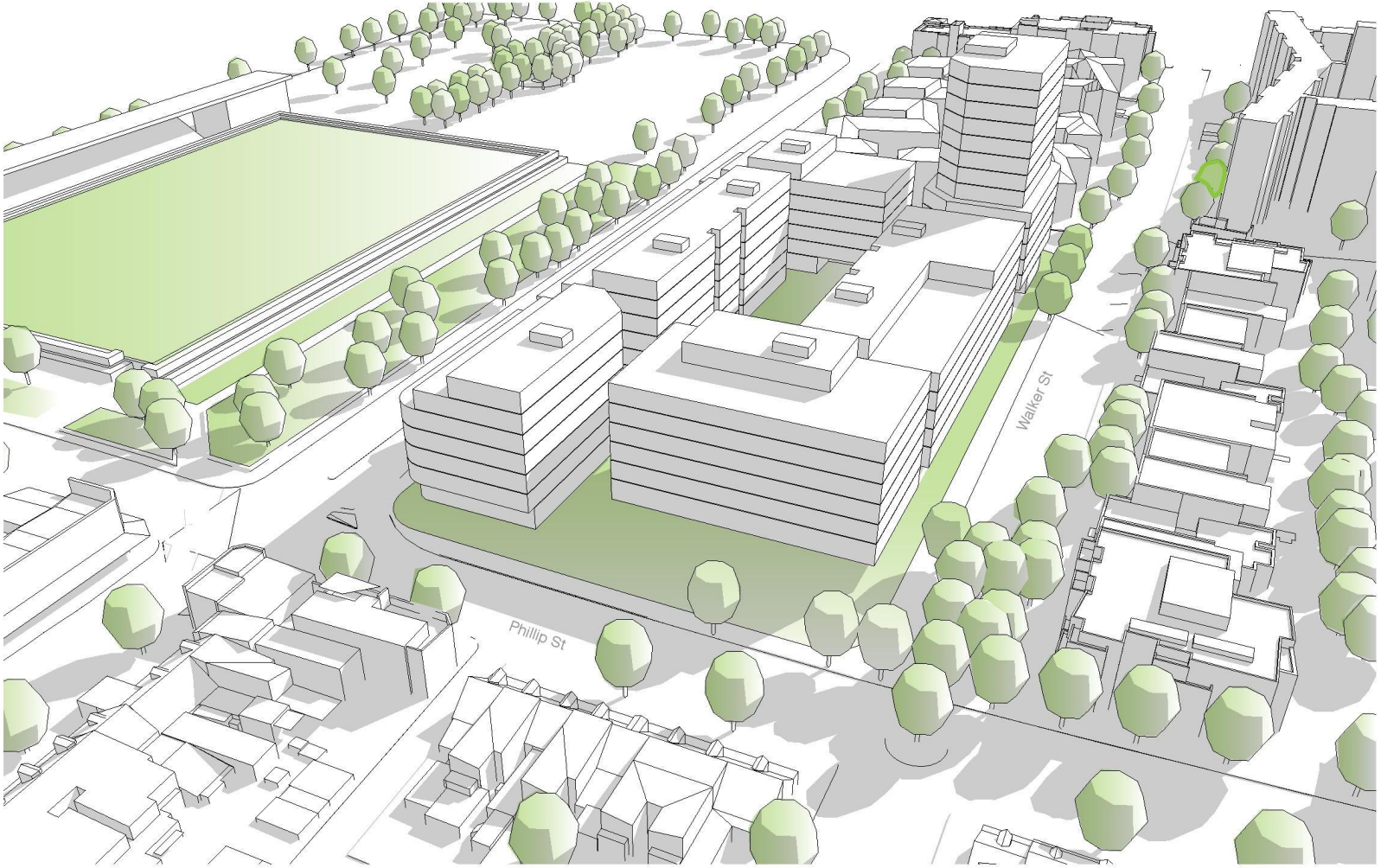

Figure 3: Indicative Reference Scheme (supplied by LaHC 2020)

2. Legislative context

Table 1: Legislative context

Name	Relevance to the project	Section
Commonwealth		
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	No matters of national environmental significance (MNES) have been identified on or near the site. One MNES; *Pteropus poliocephalus* (Grey-headed Flying-fox) is likely to utilise the study area for foraging. Future development would require assessment of significant impact to this MNES under the EPBC Act.	**Section 5**
State		
Environmental Planning and Assessment Act 1979 (EP&A Act)	Future development requires consent under the City of Sydney Local Environmental Plan and is to be assessed under Part 4 of the EP&A Act. The preparation of Tests of Significance for impacts to threatened ecological communities, species, or endangered populations, would be required in accordance with Section 7.3 of the BC Act.	**Section 5**
Biodiversity Conservation Act 2016 (BC Act)	The land on which future development is proposed is not biodiversity certified under the BC Act and therefore future development would require assessment of impacts to threatened species and endangered ecological communities listed under the BC Act are required in accordance with s7.3 of the BC Act.	**Section 5**
Fisheries Management Act 1994 (FM Act)	Future development would not involve harm to mangroves or other protected marine vegetation, dredging, reclamation or blocking of fish passage) and therefore a permit under the FM Act is not required.	N/A
Local Land Services Act 2013 (LLS Act)	The *Local Land Services Act 2013* repealed the *Native Vegetation Act 2003* and regulates the clearing of native vegetation on all land in NSW. Land excluded from the Act is listed in Schedule 1 and includes National Parks, State Forests, urban areas and biodiversity certified land. Future development would involve the clearing of native vegetation that does not require consent under the LLS Act as it is not located on regulated land.	N/A
Water Management Act 2000 (WM Act)	Any future development will not involve works on waterfront land. A Controlled Activity Approval under s91 of the WM Act is not required.	N/A
Environmental Planning Instruments		
South Sydney Local Environment Plan 1998	The study area is zoned a mix of Zone No. 2(b) Residential (Medium Density) and Zone No. 5 Special Uses (land leased by PCYC).	N/A
State Environmental Planning Policy No. 19 Bushland in Urban Areas (SEPP19)	SEPP 19 applies to the Sydney local government area. This SEPP does not require consideration because the study area is not zoned open space.	N/A
State Environmental Planning Policy (Vegetation in non-rural areas) 2017	The aims of this Policy are to protect the biodiversity values of trees and other vegetation in non-rural areas of the State. This SEPP applies to any areas detailed in Part 1 Clause 5 of the SEPP zoned as per Part 1 Clause 5(b). City of Sydney is listed in Part 1 Clause 5 of the Act. If clearing is approved under part 4 of the EP&A Act this SEPP does not apply.	N/A

3. Methodology

3.1 Literature and data review

The following information and data sources were reviewed prior to the field survey and updated at the time of writing:

- BioNet / Atlas of NSW Wildlife (OEH 2019a)
- EPBC Act Protected Matters Search Tool (DotEE 2019)
- NSW Threatened Species Profiles (OEH 2018b)
- The Native Vegetation of the Sydney Metropolitan Area – Version 3 (OEH 2016)
- aerial photography
- Atlas of Living Australia (ALA 2018)
- Urban Ecology Strategic Action Plan (City of Sydney 2014)
- City of Sydney Tree Management Policy (2013a)
- City of Sydney Urban Forest Strategy (2013b).

Aerial photography of the study area and surrounds were also used to investigate the extent of native vegetation cover and landscape features in the study area.

The BioNet / Atlas of Wildlife (5 km radius) and Protected Matters Search Tool (5 km radius) searches were performed around the co-ordinates (-33.895501, 151.207484) on 19 June 2019 and again on 12 February 2020. The results of these searches were combined to produce a list of threatened flora, fauna and ecological communities considered likely to occur or utilise the study area. The likelihood of occurrence for each species was determined using recent records, the likely presence of suitable habitat and knowledge of the species ecology. A list of species (defined as “yes”, “likely” or having “potential”) was then used to inform the need for any targeted surveys. The terms for the likelihood of occurrence are listed in **Appendix B**.

3.2 Field survey

Field survey was conducted on 23 March 2018 by ELA ecologist Alex Gorey for a total of two person hours. Weather conditions during survey were clear and sunny with temperatures ranging from 17.6 °C to 26.3°C with 5.8mm of rainfall recorded (BOM Observatory Hill Weather Station, 2018).

The subject site was traversed on foot and focused on the following:

- validation of existing vegetation mapping, determining type, condition and extent
- threatened flora and fauna habitat assessment
- hollow bearing tree search
- retention value for native urban fauna species
- opportunistic fauna sightings.

Where the boundaries of vegetation communities differed from those mapped, they were modified using hard copy maps. A list of above ground vascular flora was collected and used to determine the vegetation community likely to be present, and its condition.

3.2.1 Threatened species habitat assessment

The presence of threatened fauna species identified as having potential to occur in the subject site was determined through a habitat assessment. Where important habitat features, such as hollows, native trees and shrubs, abandoned buildings or rockwalls were observed, their location was noted.

3.2.2 Habitat tree assessment

The study area was traversed on foot to identify any hollow bearing trees or trees containing nests. When hollow bearing trees were present, their location was marked spatially using a handheld GPS unit. The tree species, size and abundance of hollow was also noted.

3.2.3 Opportunistic fauna sightings

Any fauna species either heard or observed in the study area during survey were noted. If the species was present their activity i.e. foraging or roosting was documented.

3.3 Tree Retention Value assessment

The vegetation on site was also assessed in terms of the likelihood to provide habitat for native fauna species known to occupy urban spaces. The ecological tree retention assessment was based on the following:

- is the tree native or exotic?
- does it provide foraging habitat in the form of flowers or fruits?
- are the trees contiguous with other native trees in the landscape?
- are the trees locally significant species?

Where trees were likely to provide habitat for native fauna species occurring in urban areas they were mapped as having high retention value.

This assessment also considered the objectives of the following guidelines:

- City of Sydney Urban Ecology Strategic Action Plan 2014 (**Table 2**)
- City of Sydney DCP 2012.

The objective of the DCP relevant to this proposal is to ensure that tree canopy cover is considered in all development and provided for appropriately during development (City of Sydney DCP 2012). The results of this assessment were used to inform the different design options for the study area.

Table 2: City of Sydney UESAP targets

Category	Objectives	Targets
Locally indigenous vegetation	Protect, expand and improve condition of naturally occurring locally indigenous vegetation, including possible remnants	Area of naturally occurring vegetation maintained or increased from 2012 baseline of 2.7 hectares by 2023 Naturally occurring vegetation in good condition by 2023
	Increase the extent of bush restoration sites across the LGA, and maintain sites in good condition	Area of bush restoration sites increased by 100 per cent from 2012 baseline of 4.2 hectares by 2023

Category	Objectives	Targets
		Bush restoration sites characterised by well-established, structurally complex vegetation, free of weeds by 2023
	Re-establish representative patches of the likely original vegetation communities	Representative patches of at least three likely original vegetation communities established by 2024
Fauna	Protect and enhance sites that provide habitat for priority fauna species (**Appendix C**)	Indigenous fauna species diversity maintained or increased by 2023 based on 2012 baseline
	Increase the distribution and abundance of priority fauna species across the LGA	Priority fauna species recorded from greater number of locations and in higher numbers compared to 2012 baseline by 2023
Habitat connectivity	Improve habitat connectivity across the LGA, particularly between priority sites, and between identified habitat areas in adjoining LGAs	Progressive increase in number of habitat features for priority fauna species established along potential habitat linkages by 2023

3.4 Survey limitations

Targeted survey for threatened flora and fauna species was not conducted as part of this assessment. Instead, a threatened species habitat assessment was performed and matched with the results of the literature and data review to ascertain the likelihood of occurrence of any threatened species. This methodology was considered sufficient given the small extent of the study area, urban location and lack of habitat features in the study area.

4. Results

4.1 Literature and data review

4.1.1 Vegetation mapping

A review of the Native Vegetation of the Sydney Metropolitan Region Version 3 (OEH 2016) mapping showed no vegetation communities had been previously mapped within the study area.

4.1.2 Threatened flora and fauna

The BioNet / Atlas of NSW Wildlife and EPBC Act Protected Matters Search Tool identified 6 threatened ecological communities, 62 threatened fauna and migratory species and 11 threatened flora species predicted as known or likely to occur within a 5 km radius of the study area (**Appendix B**).

No NSW BioNet records for threatened flora or threatened fauna species were located within the study area (Figure 4 and Figure 5).

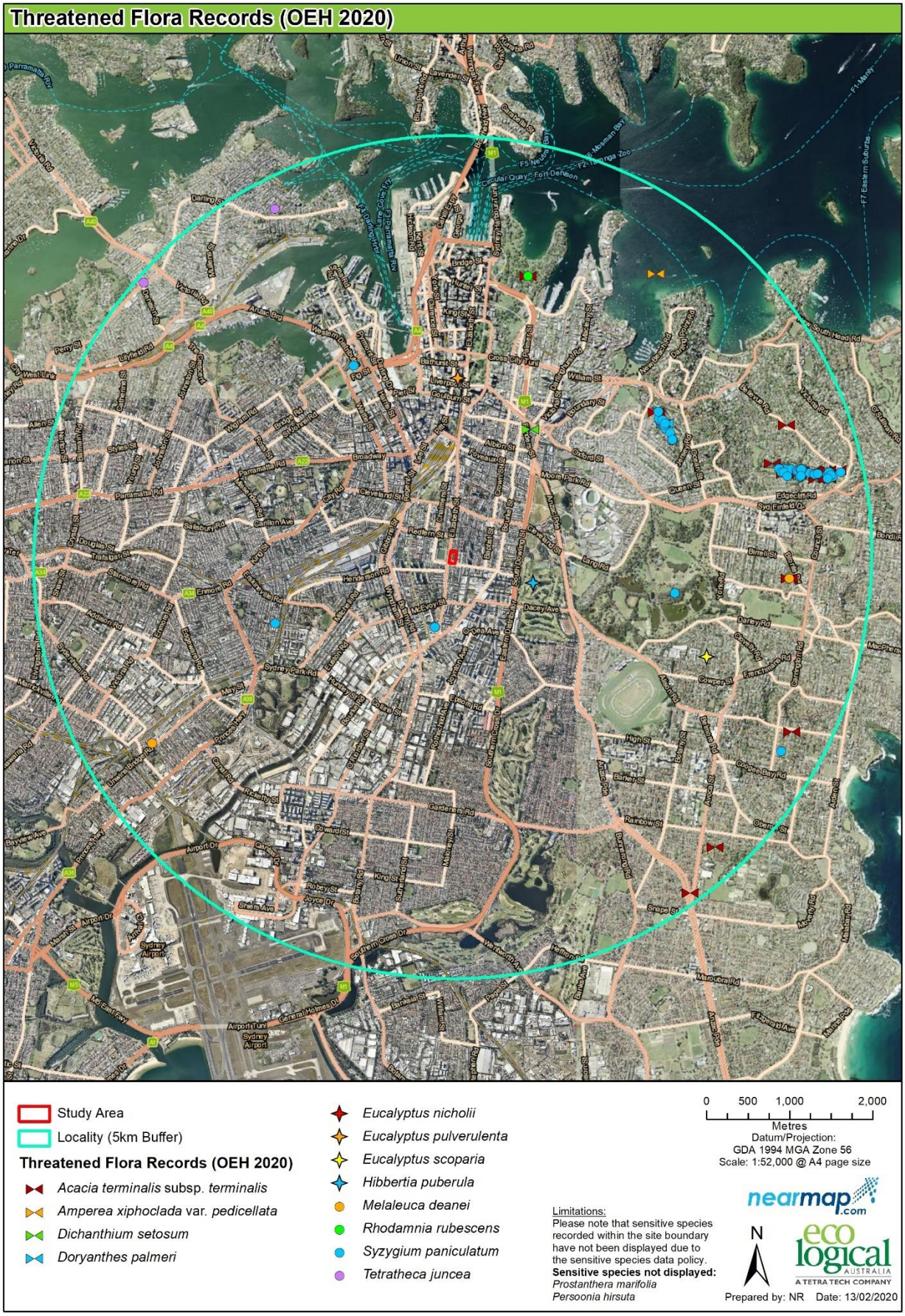

Figure 4: BioNet records of threatened flora species within 5 km of the study area.

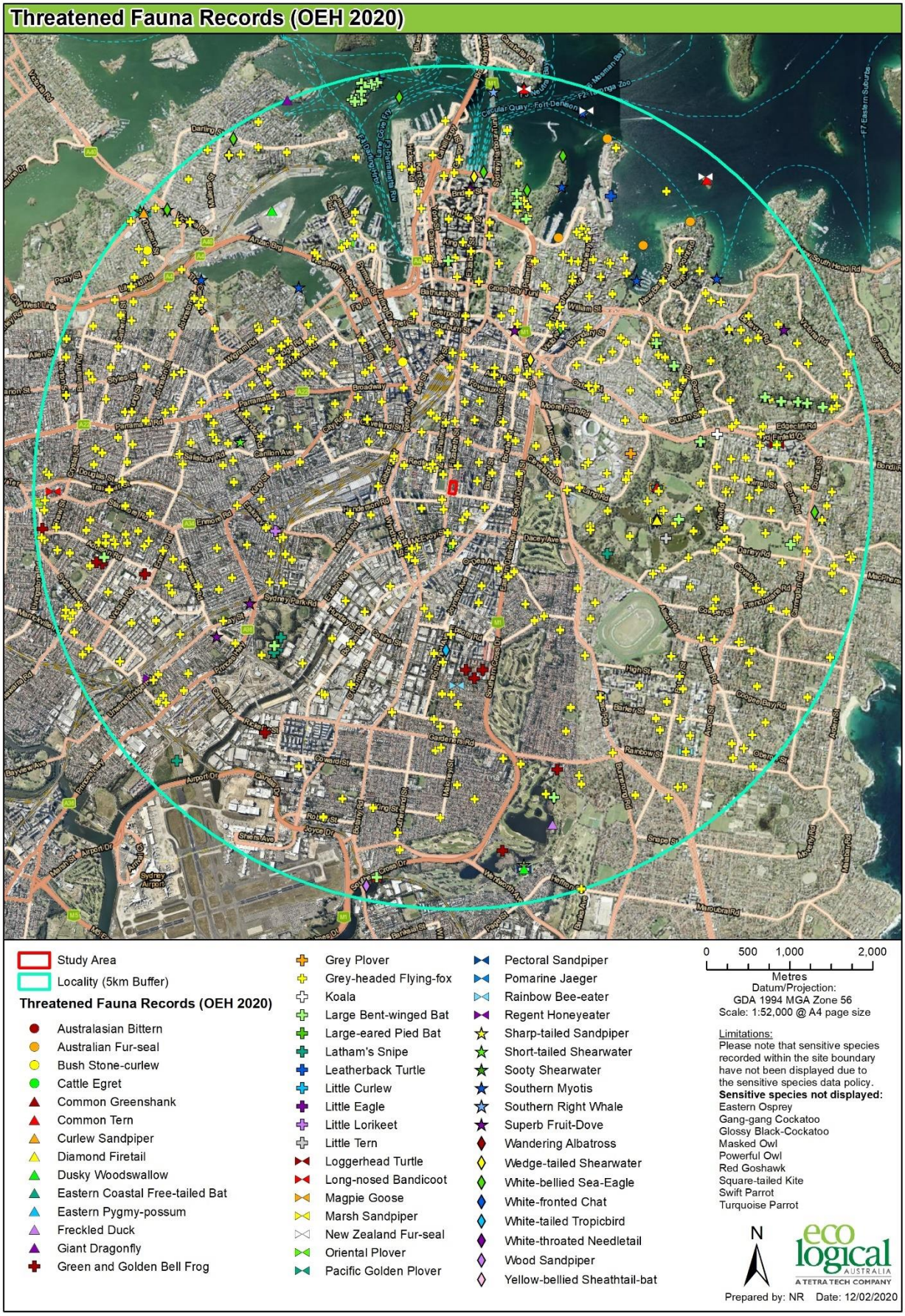

Figure 5: BioNet records of threatened fauna species within 5 km of the study area.

4.2 Field survey

4.2.1 Vegetation validation

Field survey confirmed the presence of two vegetation communities in the study area:

- Planted Native and Exotic cover
- Cleared land.

Planted Native and Exotic cover and cleared land do not form part of any native ecological community (**Figure 6**).

4.2.1.1 Planted Native and Exotic cover

Planted and Native Exotic cover was found across a majority of the study area. The canopy contained a mix of native and exotic tree species including *Casuarina cunninghamiana* (River Oak), *Melaleuca quinquenervia* (Broad-leaved Paperbark), *Eucalyptus eugenioides* (Thin-leaved Stringybark), *Celtis sinensis* (Japanese Hackberry), *Ficus rubiginosa* (Port Jackson Fig), *Liquidambar styraciflua* (American sweetgum) and *Phoenix canariensis* (Canary Island Date Palm). The midstorey was absent and the groundcover was dominated by exotic species. The groundcover was contiguous across the entire study area and is described below (**Figure 7**).

The study area also contained street trees which were a mix of native and exotic species. The street trees present were *Melaleuca quinquenervia, Platanus x acerifolia* (London Plane Tree), *Liquidambar styarciflua* and *Callistemon citrinus* (Crimson Bottlebrush).

4.2.1.2 Cleared land

The study area contained exotic grass species including *Ehrharta erecta* (Panic Veldtgrass), *Hypochaeris radicata* (Catsear), *Cenchrus clandestinus* (Kikuyu) and *Trifolium repens* (White-flowered Clover). Some native species present included *Dichondra repens* (Kidney Weed) and *Cynodon dactylon* (Couch) (**Figure 8**).

Figure 6: Validated vegetation communities and hollow bearing trees in the study area

Figure 7: Planted Native and Exotic tree cover in the study area

Figure 8: Cleared land in the study area

4.2.2 Threatened species habitat assessment

The study area contained two habitat features. The habitat features present were limited to one hollow bearing tree and native tree species. *Cacatua sanguinea* (Little Corella) and *Threskiornis moluccus* (Australian White Ibis) were identified foraging in the ground cover throughout the study area. The native tree species including *Ficus benjamina, Ficus rubiginosa, Eucalyptus microcorys, Eucalyptus eugenioides, Melaleuca styphelioides* and *Melaleuca quinquenervia* would provide foraging habitat for native urban birds.

One threatened species, *Pteropus poliocephalus* (Grey-headed Flying-fox) is considered likely to utilise the study area for foraging. This species is listed as vulnerable under the BC Act and EPBC Act. The Grey-headed Flying-fox is widespread throughout the City of Sydney LGA and is known to forage on *Eucalyptus* sp. and *Ficus* sp.

One threatened flora species, *Syzygium paniculatum* (Magenta Lilly Pilly), was identified on the southern boundary of the study area along the footpath. This species is listed as endangered under the BC Act and vulnerable under the EPBC Act. *Syzygium paniculatum* typically occurs in littoral rainforest and subtropical rainforest mostly on flatter slopes with some occurrences in steep gullies. Given the location of the individual in a developed urban environment, the lack of remnant ecological communities mapped within the study area and *Syzygium paniculatum* listed as a street tree in the City of Sydney, it is most likely planted.

4.2.3 Habitat tree assessment

One hollow bearing tree, *Ficus benjamina*, was identified in the study area during survey. The tree contained one small hollow which is likely to be utilised by *Trichoglossus moluccanus* (Rainbow Lorikeet) for roosting. One *Eucalyptus microcorys* showed signs of chewing marks from Little Corella on the trunk. This tree did not contain any hollows and would not support roosting individuals of this species.

4.2.4 Opportunistic fauna sightings

Five fauna species were identified in the study area during survey (**Table 3**). The native tree species would provide foraging habitat for the birds identified in the study area.

Table 3: Fauna species identified in the study area

Scientific name	Common name	Native / exotic	Heard / Observed	Activity
Acridotheres tristis	Common Myna	E	W	Flying overhead
Cacatua sanguinea	Little Corella	N	O	Foraging
Columba livia domestica	Feral Pigeon	E	O	Foraging
Threskiornis moluccus	Australian White Ibis	N	O	Foraging
Trichoglossus moluccanus	Rainbow Lorikeet	N	O	Foraging
Key: W = heard, O = observed				

4.3 Assessment of study requirements

In November 2019 the Minister of Planning and Public Spaces announced that the Redfern project would change from a State Significant Precinct planning pathway to a Planning Proposal pathway led by the CoS. Subsequently, a Planning Proposal Lodgement Checklist was issued by Council. The Planning

Proposal Checklist items relevant to biodiversity and ecology are limited to addressing the General Provisions in Section 3.5 Urban Ecology of the Sydney DCP 2012. These are considered in this section and recommendations have been made to enable future development to remain consistent with the DCP (**Section 6**).

Assessment of Study Requirements, as outlined in **Section 1.3**, were considered against an indicative development footprint (Figure 9) and are presented in this section.

4.3.1 Urban Ecology Strategic Action Plan

The study area does not contain any remnant native vegetation, nor does it contain a patch of native ecological community that could be restored or is representative of a vegetation community that would have once been present. It is recommended that where possible, trees native to NSW or Australia are prioritised for retention in the study area to contribute to the preservation of locally indigenous species and canopy cover within the LGA.

The UESAP lists significant native fauna and flora species that occur within the LGA. The study area is not listed as a priority site for native flora or fauna within the UESAP. The UESAP identifies that street trees provide foraging habitat for the Grey-headed Flying-fox and a range of small birds (**Appendix C**). The native canopy species in the study area would provide habitat for these species. The UESAP has also mapped potential habitat linkages within the LGA. The study area does not form part of a biodiversity corridor.

The closest potential biodiversity corridors are to the south and north of the study area, along the train line and through Waterloo / Alexandria connecting to Moore Park. The study area is opposite Redfern Park which also contains some planted native trees including *Ficus superba* var. *henneana*, *Ficus macrophylla* and *Ficus rubiginosa* (City of Sydney 2019). Retaining native tree species in the study area may enhance linkages between the potential biodiversity corridors to the north and south.

4.3.2 City of Sydney DCP

The City of Sydney DCP requires 15% canopy coverage of a site within 10 years from the completion of development. The proposal will remove all canopy within the study area. Given that a majority of the study area is proposed for residential development it will be difficult to achieve 15% canopy cover across the study area. Some trees will be retained along the boundary of the study area, with a communal lawn planted in the centre of the development. It is likely that this section will include a landscaped garden. A majority of the trees to be retained on the boundary of the study area are species indigenous to NSW (**Table 4**).

Table 4: City of Sydney DCP tree management provisions

Section 3.5 DCP 2012 provision	Proposal
Development applications are to include a Landscape Plan, except where they are for single dwellings, terraces and dual occupancies	landscape plan could incorporate some trees considered for retention on the periphery of the study area, and plant trees indigenous to the locality
Provide at least 15% canopy coverage of a site within 10 years from the completion of development.	trees along periphery of the study area will be retained supplementary planting may be required to meet the 15% cover target

Section 3.5 DCP 2012 provision	Proposal
Appropriate plant species are to be selected for the site conditions with consideration given to trees providing shade in summer and allowing sunlight in winter, or to provide habitat. Appropriate tree species include any tree (excluding noxious weed trees) that are not prone to drop fruit, seedpods, gumnuts, branches, sap and or bark.	trees native to the locality should be planted
Locally indigenous species are to be used where possible and in accordance with the City's Landscape Code	outside the scope of this assessment
Understorey plantings comprising locally-indigenous shrubs and groundcovers are encouraged	outside the scope of this assessment
Provide soft landscaping between 1.5 m and 3 m in plan depth to the perimeter of ground level car parking areas to screen the car parking area from the street and integrate with streetscape planting.	outside the scope of this assessment
One tree per 4 car spaces is to be provided within ground level parking areas in addition to perimeter planting. This planting is to: (a) be planted in bays with a minimum dimension of 2m and soil depth of 1m unencumbered deep soil. The bays are to be provided with a raised kerb barrier and native ground cover planting; (b) be planted in soil with a suitable rooting volume for the required number of trees; (c) use trees that develop a clean trunk height greater than 4.5m and a crown canopy of at least 50sqm to provide adequate shade and vehicle clearance; (d) improve pedestrian amenity; (e) not to hinder the visibility of either drivers or pedestrians, with open sightlines maintained between parking areas, public streets and paths; (f) not conflict with lighting and services; and (g) break up large areas of impervious surfaces.	outside the scope of this assessment
Car parking areas and access aisles should be designed, surfaced and graded to reduce run-off, allow stormwater to be controlled within the site, and provide for natural infiltration of stormwater runoff through landscaping.	outside the scope of this assessment

4.4 City of Sydney Urban Forest Strategy

The Urban Forest Strategy aims at achieving an average total canopy cover from 15.5% (estimation as at 2013) to 23.25% by 2030, and to 27.13% by 2050. The study requirements have also recommended a canopy cover of 25% within the study area, which is inconsistent with both the Urban Forest Strategy and the DCP. The DCP aims to achieve a canopy cover of for 15% and this report has been prepared in accordance with this target.

The proposal will reduce the canopy cover within the study area and LGA. Some trees will be retained along the periphery of the study area which will contribute to canopy cover toward the 15% target. Additional plantings may be required in the landscaped portion of the study area, and it is expected that the small and medium tree targets can be achieved through landscaped plantings. The large tree target is largely achieved through the retention of trees along the periphery of the study area. These trees are

Melaleuca sp. from the Myrtaceae family. Trees from other family, genus and species would need to be planted to achieve the targets outlined in the study requirements.

Consideration of the Landscape Code and Street Tree Masterplan are outside of the scope of this assessment and recommendations have been made regarding these plans in **Section 6**.

Figure 9: Indicative development footprint

5. Potential impacts

5.1 Potential future direct impacts

The Planning Proposal would rezone the study area to B4 Mixed Use. This would change the use of the land and has the potential to affect native vegetation, exotic vegetation and cleared land (**Table 5**). This assumes that all vegetation mapped within indicative footprint would need to be removed to complete construction (**Figure 9**). Future development would impact on 0.24 ha of planted native vegetation which may provide marginal foraging habitat for *Pteropus poliocephalus* (Grey-headed Flying-fox).

Table 5: Amount of vegetation within the study area

Vegetation community	Affected	Retained	Total (ha)
Exotic planted vegetation (ha)	0.23	0.00	0.23
Planted native vegetation (ha)	0.24	0.00	0.24
Cleared land (ha)	0.61	0.00	0.61
Total	1.08	0.00	1.08

5.1.1 Indirect impacts

The following indirect impacts would be likely to occur as part of future development:

- temporary changes to hydrology
- increased sedimentation and erosion.

These indirect impacts would be temporary and would occur during the construction phase. Tree Protection Fencing should be placed around all trees adjacent to the study area that will be retained. A Sediment Erosion Control Plan should be prepared.

5.1.2 Key threatening processes

One key threatening process, clearing of native vegetation, is associated with future development in the study area.

5.2 Approval pathways

Future subdivision and development of the study area would require the submission of a Development Application under Part 4 of the EP&A Act. The development would be subject to the BC Act, EPBC Act, EP&A Act and the Sydney LEP.

5.2.1 Assessment of future development against the Biodiversity Offsets Scheme triggers (BC Act)

This proposal has considered impacts under the BC Act. The BC Act includes a range of triggers for the Biodiversity Offsets Scheme (BOS). The triggers for the BOS include:

- impacts to land mapped under the Biodiversity Values Map
- clearing of native vegetation above the permissible threshold per lot size
- determination through the application of a 5 part test that the impact is significant to the matter under consideration.

The study area is not mapped under the Biodiversity Values Map (LMBC 2019, accessed 17 June 2019 and 12 February 2020). There are three lots in the study area and it is assumed that all native vegetation would be proposed for removal. The removal of all planted native vegetation would not exceed the permissible threshold per lot size (**Table 6**) Tests of Significance would need to be applied to the Grey-headed Flying-fox. Considering a worst-case scenario, the proposal would not trigger the BOS.

Table 6: Threshold for clearing above which the BAM applies

Minimum lot size	Threshold for clearing above which the BAM applies
Less than 1 ha	0.25 ha or more
1 ha to less than 40 ha	0.5 ha or more
40 ha to less than 1000 ha	1 ha or more
1000 ha or more	2 ha or more

Future development is unlikely to trigger the BOS and is unlikely to require referral to Department of Environment and Energy for impacts to Matters of National Environmental Significance identified in the study area.

5.2.2 NSW BC Act s7.3 Test of Significance

If a species, population or ecological community listed under Schedules 1 or 2 of the BC Act is likely to be affected, the factors set out to establish if there is likely to be a significant impact on that species, population, ecological community or habitat, must be assessed. Section 7.3 of the BC Act sets out five factors that must be addressed as part of a Test of Significance. This enables a decision to be made as to whether there is likely to be a significant impact on the species and if a Biodiversity Development Assessment Report (BDAR) is required.

5.2.2.1 Threatened ecological communities

No threatened ecological communities were identified in the study area and therefore no Tests of Significance will be required.

5.2.2.2 Threatened flora

The application of Tests of Significance would not be required for *Syzygium paniculatum* given it is a planted street tree and does not form part of a naturally occurring population. The National Recovery Plan for this species identifies naturally occurring populations, none of which would occur in the study area. The Recovery Plan also suggests that plants used in landscaping should be treated with suspicion as their provenance is likely to be not known and would usually not be supported by naturally occurring habitat.

5.2.2.3 Threatened fauna

Based on an indicative assessment, one threatened fauna species; *Pteropus poliocephalus* (Grey-headed Fling-fox) was predicted as likely to utilise the study area for foraging. A Test of Significance would need to be applied with respect to this species at the time of DA submission. It is considered likely that the test would conclude no significant impacts to the species.

5.2.3 EPBC Act Impact Assessment

The EPBC Act establishes a process for assessing the environmental impact of activities and developments where MNES may be affected. Under the Act, any action which "has, will have, or is likely to have a significant impact on a matter of NES is defined as a controlled action and requires approval from the Commonwealth Department of the Environment and Energy (DotEE).

The process includes the application of Significant Impact Criteria for listed MNES that will be affected as a result of the proposed action. Impact assessment guidelines outline a number of criteria to provide assistance in conducting the assessment and help decide whether a referral to the Commonwealth is recommended. These guidelines should be used in applying the Significant Impact Criteria.

5.2.3.1 Threatened ecological communities

No threatened ecological communities were identified in the study area and therefore no application of significant impact criteria will be required.

5.2.3.2 Threatened flora

The application of the Significant Impact Criteria is not required for *Syzygium paniculatum* given it is a planted street tree and does not form part of a naturally occurring population. The National Recovery Plan for this species identifies naturally occurring populations, none of which would occur in the study area. The Recovery Plan also suggests that plants used in landscaping should be treated with suspicion as their provenance is likely to be not known and would usually not be supported by naturally occurring habitat.

5.2.3.3 Threatened fauna

One threatened fauna species, *Pteropus poliocephalus* (Grey-headed Fling-fox), was predicted as likely to utilise the study area for foraging. The significant impact criteria would need to be applied with respect to this species at the DA stage. It is considered likely that the test would conclude no significant impacts to the species.

6. Recommendations and mitigation measures

The following recommendations and mitigation measures were prepared based on the indicative reference scheme (Figure 2; Figure 3) and development footprint (Figure 9) and should be considered when undertaking future development at the Site.

6.1 Clearing of native vegetation

The following mitigation measures should be implemented prior to the commencement of bulk earthworks:

- tree protection fencing should be placed around trees to be retained adjacent to the study area. High visibility orange safety mesh should be used at a distance of 5 m radius from the trunk of each outermost tree. Clear 'No-Go Area' signage should be attached to the fencing. If branches must be trimmed to allow heavy machinery access, it should be kept to a minimum.
- where vegetation is to be retained, native species should be prioritised
- if compensatory planting is to take place, native species should be planted similar to those present in the study area (compensatory planting would be conducted after the completion of works).

6.2 Clearing of hollow bearing trees

The following mitigation measures should be implemented prior to the commencement of bulk earthworks:

- where possible, the hollow bearing tree in the study area should be retained
- if the hollow bearing tree is to be removed it should be marked using high visibility spray paint prior to the construction of any works
- removal of hollow bearing trees should take place outside of spring to avoid disturbance to any breeding fauna that may be present
- trees should be inspected for nests in branches and foliage immediately prior to felling. A tree climber may be required to remove nests if they are present.
- a clearance survey should be conducted during the felling of hollow bearing trees:
    - underscrubbing and felling of non-hollow bearing trees surrounding the hollow bearing trees should occur in the week prior to felling
    - if the supervising ecologist cannot see to the end of the hollow, the tree should be left on the ground overnight to further encourage any hollow dwelling fauna to relocate
    - in the event fauna are found in the hollows they should be relocated (e.g. capture and release in nearby habitat at a suitable time e.g. dusk for nocturnal species; contact WIRES to take injured fauna into care; etc).

6.3 Onsite construction recommendations

The following mitigation measures should be implemented prior to the commencement of bulk earthworks and during construction:

- Drainage should be controlled in the impact areas in line with the *Protection of the Environment Operations Act 1997* requirements to avoid impacts on downstream habitats, and threatened ecological communities.
- All earthworks should adopt a sediment and erosion control plan to minimise impacts to neighbouring native vegetation and minimise spread of weeds present within the study area including:
    - sediment fencing should be placed at 5 m around the development footprint to prevent runoff into stormwater drains
    - surface runoff to be diverted away from areas of soil disturbance
    - prevent tracking of soils / sediments from work site to roadways, footpaths and drainage lines as a result of work vehicle / machinery movement
    - vehicle and machinery movement will be confined to designated tracks and work areas.
    - work will not take place during or after heavy rain when doing so is likely to cause soil erosion or soil structural damage
    - no washing of concrete will be undertaken on site.
- Equipment, heavy machinery and materials should be situated in designated lay-down areas in portions of cleared land where they are least likely to cause erosion or damage vegetation.
- Work vehicle access should be restricted to designated work areas and existing formed access tracks/roadways.
- Weed removal should be undertaken using mechanical and manual means, without the use of herbicides.

6.4 Compensatory planting

The following mitigation measures should be implemented after the completion of bulk earthworks and construction:

- where possible, landscaping throughout the study area should plant trees indigenous to the locality to increase the canopy cover percentage throughout the study area
- compensatory tree planting should consider the requirements and policy objectives utilised in the Tree Management Policy (City of Sydney 2013a) and the Urban Forest Requirements (City of Sydney 2013b)
- compensatory tree planting and street tree planting should comply with the Street Tree Masterplan and the Landscape Code, with consideration given to the study requirements (DP&E 2018).

7. Conclusion

Eco Logical Australia Pty Ltd (ELA) was engaged by NSW Land and Housing Corporation to prepare a Flora and Fauna Assessment report to accompany a Planning Proposal to be lodged with the City of Sydney. The Planning Proposal seeks to rezone 600-660 Elizabeth Street, Redfern to B4 Mixed Use. In November 2019 the Minister of Planning and Public Spaces announced that the Redfern project would change from a State Significant Precinct planning pathway to a Planning Proposal pathway led by the City of Sydney. This report is a flora and fauna assessment of a potential redevelopment for the purposes of new residential and community uses and addresses the potential impacts of a development proposal on threatened species and ecological communities listed under the *Biodiversity Conservation Act 2016* (BC Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Field survey identified that most of the study area contained planted native and exotic tree species and a managed understorey layer. The canopy species present did not conform to any ecological community but are likely to provide foraging habitat for a range of birds which typically utilise urban environments. The study area is likely to provide foraging habitat for Grey-headed Flying-fox, a vulnerable species under the BC Act and EPBC Act. Future development would need to apply Tests of Significance consistent with the BC Act and EPBC Act Significant Impact Criteria to assess potential impacts to this species.

One threatened flora species; *Syzygium paniculatum* an endangered species under the BC Act and vulnerable species under the EPBC Act was identified as a planted street tree in the study area. This individual is a planted street tree and is occurring outside of its natural range. As such, an assessment of significance and the application of Significant Impact Criteria will not be required when undertaking future development.

No threatened ecological communities were considered likely to occur in the study area. This Flora and Fauna Assessment report considered the worst-case scenario to ecological values known or considered likely to occur in the study area. Tests of significance consistent with the BC Act and application of the significant impact criteria should be applied to *Pteropus poliocephalus* (Grey-headed Flying-fox) should be applied at the DA stage.

An assessment of ecological tree retention value was undertaken to inform the development footprint that is assessed in this Flora and Fauna Assessment. The indicative development footprint has considered the ecological tree retention assessment. The proposal was considered in relation to the BC Act. The assessment concluded that the proposal would not trigger the BOS and is unlikely to require referral to Department of Environment and Energy for impacts to Matters of National Environmental Significance identified in the study area.

8. References

Atlas of Living Australia (2018). Available at https://bie.ala.org.au/search?q=pteropus+poliocephalus

Bureau of Meteorology (2018) *Climate data online.* Available at: http://www.bom.gov.au/climate/data/

City of Sydney (2019) *Significant Trees Redfern Park*. Available at http://trees.cityofsydney.nsw.gov.au/location/redfern-park/

City of Sydney (2014) Urban Ecology Strategic Action Plan. Available at http://www.cityofsydney.nsw.gov.au/__data/assets/pdf_file/0011/198821/2014-109885-Plan-Urban-Ecology-Strategic-Action-Plan_FINAL-_adopted.pdf

City of Sydney (2013a) Tree Management Policy. Available at https://www.cityofsydney.nsw.gov.au/__data/assets/pdf_file/0020/132248/Tree-Management-Policy.pdf

City of Sydney (2013b) Urban Forest Strategy. Available at https://www.cityofsydney.nsw.gov.au/live/trees/urban-forest

Commonwealth of Australia (2018) *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*. Commonwealth Consolidated Acts. Available at: http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/

Commonwealth of Australia EPBC Act Protected Matters Search Tool. (2018a) Accessed 20 March 2018. Available at: http://www.environment.gov.au/webgis-framework/apps/pmst/pmst.jsf

Commonwealth Department of Environment and Energy (DotEE 2018b) SPRAT Profiles. Available at http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=863

Commonwealth Department of Environment and Energy (2019) Interactive Flying-fox Web Viewer. Available at http://www.environment.gov.au/webgis-framework/apps/ffc-wide/ffc-wide.jsf

Environment and Heritage (2018) *NSW BioNet Atlas of NSW Wildlife for threatened flora and threatened fauna species recorded in the locality*. Available at: http://www.bionet.nsw.gov.au

NSW Government (1987) *Environmental Planning and Assessment Act 1979.* NSW Legislation. Available at: http://www.legislation.nsw.gov.au/#/view/act/1979/203

Office of Environment and Heritage (n.d.) *Threatened Species Profiles*. Available at: http://www.threatenedspecies.environment.nsw.gov.au/index.aspx

Office of Environment and Heritage (OEH) 2016. *The Native Vegetation of the Sydney Metropolitan Area. Volume 2: Vegetation Community Profiles.* Version 3.0. NSW Office of Environment and Heritage, Sydney.

Appendix A - Flora species in the study area

Scientific name	Common name	Native / exotic	Arboricultural retention value	Ecological retention value
Agapanthus sp.	-	E	N/A	N/A
Agonis flexuosa	Australian Willow	N	Low	Low
Anagallis arvensis	Chickweed	E	N/A	N/A
Araujia sericifera	Moth Vine	E^	N/A	N/A
Avena sp.	-	E	N/A	N/A
Bidens pilosa	Farmers Friends	E	N/A	N/A
Boutella dactyloides	Buffalo Grass	E	N/A	N/A
Carpobrotus glaucescens	Pigface	N	N/A	N/A
Casuarina cunninghamiana	River Oak	N	Low	High
Casuarina glauca	Swamp Oak	N	Medium	High
Cedrus deodara	Deodar Cedar	N	Low	Low
Celtis australis	Japanese Hackberry	E	Low	Low
Cenchrus clandestinus	Kikuyu	N	N/A	N/A
Chloris sp.	-	E	N/A	N/A
Conyza sp.	-	E	N/A	N/A
Cupaniopsis anacardioides	Tuckeroo	N	Medium	High
Cupressus lusitanica	Mexican Cyprus	E	Low	Low
Cupressus sempervirens	Mediterranean Cyprus	E	Low	Low
Cynodon dactylon	Couch	N	N/A	N/A
Dianella caerulea	Blue Flax-lily	N	N/A	N/A
Dichondra repens	Kidney Weed	N	N/A	N/A
Ehrharta erecta	Panic Veldtgrass	E	N/A	N/A
Eucalyptus eugenioides	Thin-leaved Stringybark	N	Medium	High
Eucalyptus microcorys	Tallowwood	N	Medium	High
Eucalyptus robusta	Swamp Mahogany	N	Medium	High
Eucalyptus sieberi	Silvertop Ash	N	Medium	High
Ficus benjamina	Weeping Fig	N	Medium	High
Ficus rubiginosa	Port Jackson Fig	N	Medium	High
Hypochaeris radicata	Catsear	E	N/A	N/A
Jacaranda mimosifolia	Jacaranda	E	Low	Low
Lagerstroemia sp.	Crepe Myrtle	E	Low	Low
Liquidambar styraciflua	American Sweetgum	E	Low	Low
Lomandra longifolia	Spiky-headed Mat-rush	N	N/A	N/A

Scientific name	Common name	Native / exotic	Arboricultural retention value	Ecological retention value
Melaleuca quinquenervia	Broad-leaved Paperbark	N	High	High
Melaleuca styphelioides	Prickly-leaved Tea-tree	N	-	High
Modiola caroliniana	Red-flowered Mallow	E	N/A	N/A
Phoenix canariensis	Canary Island Date Palm	E	Low	Low
Plantago lanceolata	Plantain	E	N/A	N/A
Platanus x acerifolia	London Plane Tree	E	High	Low
Podocarpus elatus	Plum Pine	N	High	Medium
Populus nigra	Cottonwood Poplar	E	Low	Low
Robinia pseudoacacia	Black Locust	E	Low	Low
Syagrus romanzoffiana	Queen Palm	E	Low	Low
Syzygium paniculatum	Magenta Lily Pily	N*	Medium	Medium
Trifolium repens	White-flowered Clover	E	N/A	N/A
Trifolium sp.	-	E	N/A	N/A
Tristaniopsis laurina	Water Gum	N	Low	Medium
Key: * = threatened species under the BC Act / EPBC Act, ^ = weed of national significance				

Appendix B - Likelihood of occurrence table

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

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

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

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

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

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and habitat	Likelihood of Occurrence	Impact Assessment Required
ECOLOGICAL COMMUNITIES						
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion		V / CE	E	Sydney Basin Bioregion, mostly in the Cumberland IBRA sub-region, with small occurrences in the Sydney Cataract, Wollemi and Burragorang sub-regions. It occurs primarily in the Castlereagh area in the north-west of the Cumberland Plain with other known occurrences near Holsworthy, Kemps Creek and Longneck Lagoon. Occurs primarily on Tertiary sands and gravels of the Hawkesbury-Nepean river system. At Agnes Banks it primarily occurs on aeolian (wind-blown) sands overlying Tertiary alluvium. Found on flat or gently undulating terrain in rain shadow areas typically receiving 700–900 mm annual rainfall. The ecological community occurs primarily at low elevations up to 80 m above sea level (ASL), including old ridges, dunes and terraces.	No	No
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community		-	E	The ecological community occurs in sub-tropical, sub-humid and temperate climatic zones from Curtis Island, north of Gladstone, in Queensland to Bermagui in southern New South Wales. The ecological community is found within the South Eastern Queensland NSW North Coast, Sydney Basin and South East Corner. The ecological community occurs in coastal catchments, mostly at elevations of less than 20 m above sea-level (ASL) that are typically found within 30 km of the coast. However, this distance varies by catchment; for example, low elevations can occur as far as 40 km inland on the Hawkesbury River, or more than 100 km on the Clarence River. On the mid and north coast of NSW the ecological community may also occur up to 50 m ASL on floodplains of, or coastland flats associated with, former or current coastal river systems. Coastal Swamp Oak Forest typically occurs on unconsolidated sediments, including alluvium deposits, and where soils formed during the Quaternary period as a result of sea-level rise during the Holocene period (Sloss et al., 2007).	No	No
Coastal Upland Swamps in the Sydney Basin Bioregion		E	E	Endemic to NSW and confined to the Sydney Basin Bioregion. It occurs in the eastern Sydney Basin from the Somersby district in the north (Somersby-Hornsby plateaux) to the Robertson district in the south (n the Woronora plateau). Occur primarily on impermeable sandstone plateaux with shallow groundwater aquifers in the headwaters and impeded drainage lines of streams, and on sandstone benches with abundant seepage moisture. Generally associated with acidic soils.	No	No
Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion		E	CE	Occurs in western Sydney, with the most extensive stands occurring in the Castlereagh and Holsworthy areas. Smaller remnants occur in the Kemps Creek area and in the eastern section of the Cumberland Plain. Mainly occurs on clay soils derived from the deposits of ancient river systems (alluvium), or on shale soils of the Wianamatta Shales.	No	No

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and habitat	Likelihood of Occurrence	Impact Assessment Required
Eastern Suburbs Banksia Scrub of the Sydney Region		E	E	Eastern and south eastern suburbs of Sydney. Nutrient-poor sand deposits.	No	No
Western Sydney Dry Rainforest and Moist Woodland on Shale		E	CE	Cumberland Plain Sub-region of the Sydney Basin Bioregion. It generally occurs in rugged terrain and other patches may occur on undulating terrain, with dry rainforest patches typically occupying steep lower slopes and gullies, and moist woodland patches typically occupying upper sections of the slope. Occurs almost exclusively on clay soils derived from Wiannamatta Group shales.	No	No
FAUNA						
Actitis hypoleucos	Common Sandpiper	-	M	Summer migrant. In NSW, widespread along coastline and also occurs in many areas inland. Coastal wetlands and some inland wetlands, especially muddy margins or rocky shores. Also estuaries and deltas, lakes, pools, billabongs, reservoirs, dams and claypans, mangroves.	No	No
Anthochaera phrygia	Regent Honeyeater	E4A	CE	Inland slopes of south-east Australia, and less frequently in coastal areas. In NSW, most records are from the North-West Plains, North-West and South-West Slopes, Northern Tablelands, Central Tablelands and Southern Tablelands regions; also recorded in the Central Coast and Hunter Valley regions. Eucalypt woodland and open forest, wooded farmland and urban areas with mature eucalypts, and riparian forests of *Casuarina cunninghamiana* (River Oak).	No	No
Apus pacificus	Fork-tailed Swift	-	M	Recorded in all regions of NSW. Riparian woodland., swamps, low scrub, heathland, saltmarsh, grassland, Spinifex sandplains, open farmland and inland and coastal sand-dunes.	No	No
Arenaria interpres	Ruddy Turnstone	-	M	Summer migrant to most coastal regions, with occasional records inland, including in NSW. Tidal reefs and pools; pebbly, shelly and sandy shores; mudflats; inland shallow waters; sewage ponds, saltfields; ploughed ground.	No	No
Burhinus grallarius	Bush Stone-curlew	E1	-	In NSW, found sporadically in coastal areas, and west of the divide throughout the sheep-wheat belt. In NSW, it occurs in lowland grassy woodland and open forest.	No	No
Calidris acuminata	Sharp-tailed Sandpiper	-	M	Summer migrant. Widespread in most regions of NSW, especially in coastal areas, but sparse in the south-central Western Plain and east Lower Western Regions. Shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation.	No	No
Calidris canutus	Red Knot	-	E, M	Summer migrant to Australia. In NSW, widespread in suitable habitat along the coast. Occasionally recorded inland in all regions. Intertidal mudflats, sandflats sheltered sandy beaches, estuaries,	No	No

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and habitat	Likelihood of Occurrence	Impact Assessment Required
				bays, inlets, lagoons, harbours, sandy ocean beaches, rock platforms, coral reefs, terrestrial saline wetlands near the coast, sewage ponds and saltworks. Rarely inland lakes or swamps.		
Calidris ferruginea	Curlew Sandpiper	E1	CE, M	Occurs along the entire coast of NSW, and sometimes in freshwater wetlands in the Murray-Darling Basin. Littoral and estuarine habitats, including intertidal mudflats, non-tidal swamps, lakes and lagoons on the coast and sometimes inland.	No	No
Calidris melanotos	Pectoral Sandpiper	-	M	Summer migrant to Australia. Widespread but scattered in NSW. East of the Great Divide, recorded from Casino and Ballina, south to Ulladulla. West of the Great Divide, widespread in the Riverina and Lower Western regions. Shallow fresh to saline wetlands, including coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.	No	No
Calidris ruficollis	Red-necked Stint	-	M	Summer migrant to Australia, widespread coastal and inland NSW. Tidal mudflats, saltmarshes, sandy and shelly beaches, saline and freshwater wetlands, saltfields, sewage ponds.	No	No
Calidris tenuirostris	Great Knot	V	CE, M	In NSW, recorded at scattered sites along the coast down to about Narooma. It has also been observed inland at Tullakool, Armidale, Gilgandra and Griffith. Intertidal mudflats or sandflats, including inlets, bays, harbours, estuaries and lagoons.	No	No
Callocephalon fimbriatum	Gang-gang Cockatoo	V	-	In NSW, distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. Isolated records known from as far north as Coffs Harbour and as far west as Mudgee. Tall mountain forests and woodlands in summer; in winter, may occur at lower altitudes in open eucalypt forests and woodlands, and urban areas.	Unlikely	No
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	-	In NSW, widespread along coast and inland to the southern tablelands and central western plains, with a small population in the Riverina. Open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur.	Unlikely	No
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	Recorded from Rockhampton in Qld south to Ulladulla in NSW. Largest concentrations of populations occur in the sandstone escarpments of the Sydney basin and the NSW north-west slopes. Wet and dry sclerophyll forests, Cyprus Pine dominated forest, woodland, sub-alpine woodland, edges of rainforests and sandstone outcrop country.	No	No
Charadrius leschenaultii	Greater Sand-plover	V	V, M	In NSW, recorded between the northern rivers and the Illawarra, with most records coming from the Clarence and Richmond estuaries. Almost entirely restricted to coastal areas in NSW, mainly	No	No

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and habitat	Likelihood of Occurrence	Impact Assessment Required
				on sheltered sandy, shelly or muddy beaches or estuaries with large intertidal mudflats or sandbanks.		
Dasyornis brachypterus	Eastern Bristlebird	E1	E	There are three main populations: Northern - southern Qld/northern NSW, Central - Barren Ground NR, Budderoo NR, Woronora Plateau, Jervis Bay NP, Booderee NP and Beecroft Peninsula and Southern - Nadgee NR and Croajingalong NP in the vicinity of the NSW/Victorian border. Central and southern populations inhabit heath and open woodland with a heathy understorey. In northern NSW, habitat comprises open forest with dense tussocky grass understorey.	Unlikely	No
Dasyurus maculatus	Spotted-tailed Quoll	V	E	Found on the east coast of NSW, Tasmania, eastern Victoria and north-eastern Qld. Rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline.	No	No
Gallinago hardwickii	Latham's Snipe	-	M	Migrant to east coast of Australia, extending inland west of the Great Dividing Range in NSW. Freshwater, saline or brackish wetlands up to 2000 m above sea-level; usually freshwater swamps, flooded grasslands or heathlands.	No	No
Glossopsitta pusilla	Little Lorikeet	V	-	In NSW, found from the coast westward as far as Dubbo and Albury.Dry, open eucalypt forests and woodlands, including remnant woodland patches and roadside vegetation.	Unlikely	No
Grantiella picta	Painted Honeyeater	V	V	Widely distributed in NSW, predominantly on the inland side of the Great Dividing Range but avoiding arid areas. Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests.	Unlikely	No
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	-	Distributed along the coastline of mainland Australia and Tasmania, extending inland along some of the larger waterways, especially in eastern Australia. Freshwater swamps, rivers, lakes, reservoirs, billabongs, saltmarsh and sewage ponds and coastal waters. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, forest and urban areas.	Unlikely	No
Heleioporus australiacus	Giant Burrowing Frog	V	V	South eastern NSW and Victoria, in two distinct populations: a northern population in the sandstone geology of the Sydney Basin as far south as Ulladulla, and a southern population occurring from north of Narooma through to Walhalla, Victoria. Heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based.	No	No
Hirundapus caudacutus	White-throated Needletail	-	M	All coastal regions of NSW, inland to the western slopes and inland plains of the Great Divide. Occur most often over open forest and rainforest, as well as heathland, and remnant vegetation in farmland.	Unlikely	No

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and habitat	Likelihood of Occurrence	Impact Assessment Required
Hoplocephalus bungaroides	Broad-headed Snake	E1	V	Largely confined to Triassic and Permian sandstones within the coast and ranges in an area within approximately 250 km of Sydney. Dry and wet sclerophyll forests, riverine forests, coastal heath swamps, rocky outcrops, heaths, grassy woodlands.	No	No
Isoodon obesulus obesulus	Southern Brown Bandicoot (eastern)	E1	E	Found in south-eastern NSW, east of the Great Dividing Range south from the Hawkesbury River. Heath or open forest with a heathy understorey on sandy or friable soils.	No	No
Lathamus discolor	Swift Parrot	E1	CE	Migrates from Tasmania to mainland in Autumn-Winter. In NSW, the species mostly occurs on the coast and south west slopes. Box-ironbark forests and woodlands.	Unlikely	No
Limosa lapponica	Bar-tailed Godwit	-	M	Summer migrant to Australia. Widespread along the coast of NSW, including the offshore islands. Also numerous scattered inland records. Intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons, bays, seagrass beds, saltmarsh, sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats. Rarely inland wetlands, paddocks and airstrips.	No	No
Limosa limosa	Black-tailed Godwit	V	M	Arrives in August and leaves in March. In NSW, most frequently recorded at Kooragang Island, with occasional records elsewhere along the coast, and inland in the Murray-Darling Basin, on the western slopes of the Northern Tablelands and in the far north-western corner of the state. Usually sheltered bays, estuaries and lagoons with large intertidal mudflats and/or sandflats. Further inland, it can also be found around muddy lakes and swamps.	No	No
Litoria aurea	Green and Golden Bell Frog	E1	V	Since 1990, recorded from ~50 scattered sites within its former range in NSW, from the north coast near Brunswick Heads, south along the coast to Victoria. Records exist west to Bathurst, Tumut and the ACT region. Marshes, dams and stream-sides, particularly those containing *Typha* spp. (bullrushes) or *Eleocharis* spp. (spikerushes). Some populations occur in highly disturbed areas.	No	No
Lophoictinia isura	Square-tailed Kite	V	-	In NSW, it is a regular resident in the north, north-east and along the major west-flowing river systems. It is a summer breeding migrant to the south-east, including the NSW south coast. Timbered habitats including dry woodlands and open forests, particularly timbered watercourses.	Unlikely	No
Merops ornatus	Rainbow Bee-eater	-	M	Distributed across much of mainland Australia, including NSW. Open forests and woodlands, shrublands, farmland, areas of human habitation, inland and coastal sand dune systems, heathland, sedgeland, vine forest and vine thicket.	Unlikely	No

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and habitat	Likelihood of Occurrence	Impact Assessment Required
Miniopterus australis	Little Bent-winged Bat	V	-	East coast and ranges south to Wollongong in NSW. Moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub.	Unlikely	No
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	In NSW it occurs on both sides of the Great Dividing Range, from the coast inland to Moree, Dubbo and Wagga Wagga. Rainforest, wet and dry sclerophyll forest, monsoon forest, open woodland, paperbark forests and open grassland.	Unlikely	No
Monarcha melanopsis	Black-faced Monarch	-	M	In NSW, occurs around the eastern slopes and tablelands of the Great Divide, inland to Coutts Crossing, Armidale, Widden Valley, Wollemi National Park and Wombeyan Caves. It is rarely recorded farther inland. Rainforest, open eucalypt forests, dry sclerophyll forests and woodlands, gullies in mountain areas or coastal foothills, Brigalow scrub, coastal scrub, mangroves, parks and gardens.	No	No
Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V	-	Found along the east coast from south Qld to southern NSW. Dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range.	Unlikely	No
Motacilla flava	Yellow Wagtail	-	M	Regular summer migrant to mostly coastal Australia. In NSW recorded Sydney to Newcastle, the Hawkesbury and inland in the Bogan LGA. Swamp margins, sewage ponds, saltmarshes, playing fields, airfields, ploughed land, lawns.	Unlikely	No
Myiagra cyanoleuca	Satin Flycatcher	-	M	In NSW, widespread on and east of the Great Divide and sparsely scattered on the western slopes, with very occasional records on the western plains. Eucalypt-dominated forests, especially near wetlands, watercourses, and heavily-vegetated gullies.	Unlikely	No
Myotis macropus	Southern Myotis	V	-	In NSW, found in the coastal band. It is rarely found more than 100 km inland, except along major rivers. Foraging habitat is waterbodies (including streams, or lakes or reservoirs) and fringing areas of vegetation up to 20m.	Unlikely	No
Neophema chrysogaster	Orange-bellied Parrot	E4A	CE	Breeds in Tasmania and migrates in autumn to spend the winter on the mainland coast of south-eastern SA and southern Victoria. Occasional reports from NSW, most recently Shellharbour and Maroubra in May 2003. Winter habitat is mostly within 3 km of the coast in sheltered bays, lagoons, estuaries, coastal dunes and saltmarshes. Also small islands and peninsulas, saltworks, golf courses, low samphire herbland and taller coastal shrubland.	Unlikely	No

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and habitat	Likelihood of Occurrence	Impact Assessment Required
Ninox strenua	Powerful Owl	V	-	In NSW, it is widely distributed throughout the eastern forests from the coast inland to tablelands, with scattered records on the western slopes and plains. Woodland, open sclerophyll forest, tall open wet forest and rainforest.	Unlikely	No
Numenius madagascariensis	Eastern Curlew	-	CE, M	Summer migrant to Australia. Primarily coastal distribution in NSW, with some scattered inland records. Estuaries, bays, harbours, inlets and coastal lagoons, intertidal mudflats or sandflats, ocean beaches, coral reefs, rock platforms, saltmarsh, mangroves, freshwater/brackish lakes, saltworks and sewage farms.	No	No
Numenius minutus	Little Curlew		M	Summer migrant to Australia. In NSW, most records scattered east of the Great Dividing Range, from Casino, south to Greenwell Point with a few scattered records west of the Great Dividing Range. Dry grasslands, open woodlands, floodplains, margins of drying swamps, tidal mudflats, airfields, playing fields, crops, saltfields, sewage ponds.		
Numenius phaeopus	Whimbrel	-	M	Summer migrant to Australia. Found along almost the entire coast of NSW; scattered inland records. Estuaries, mangroves, tidal flats, coral cays, exposed reefs, flooded paddocks, sewage ponds, grasslands, sports fields, lawns.	No	No
Petaurus norfolcensis	Squirrel Glider	V	-	Widely though sparsely distributed on both sides of the Great Dividing Range in eastern Australia, from northern Qld to western Victoria. Mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas.	No	No
Petrogale penicillata	Brush-tailed Rock-wallaby	E1	V	In NSW they occur from the Qld border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. Rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges.	No	No
Phascolarctos cinereus	Koala	V	V	In NSW it mainly occurs on the central and north coasts with some populations in the west of the Great Dividing Range. There are sparse and possibly disjunct populations in the Bega District, and at several sites on the southern tablelands. Eucalypt woodlands and forests.	No	No
Philomachus pugnax	Ruff	-	M	Regular but rare summer migrant to Australia. In NSW, recorded at Kurnell, Tomki, Casino, Ballina, Kooragang Island, Broadwater Lagoon and Little Cattai Creek. Also found around the Riverina, including Windouran Swamp, Wanganella, Fivebough Swamo and the Tullakool Saltworks. Terrestrial wetlands including lakes, swamps, pools, lagoons, tidal rivers, swampy fields and floodlands. Occasionally harbours, estuaries, seashores, sewage farms and saltworks.	No	No

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and habitat	Likelihood of Occurrence	Impact Assessment Required
Pluvialis fulva	Pacific Golden Plover	-	M	Regular widespread summer migrant to Australia, including coastal NSW, Lord Howe and Norfolk Island. Estuaries, mudflats, saltmarshes, mangroves, rocky reefs, inland swamps, ocean shores, paddocks, sewage ponds, ploughed land, airfields, playing fields.	No	No
Pseudomys novaehollandiae	New Holland Mouse	-	V	Fragmented distribution across eastern NSW. Open heathlands, woodlands and forests with a heathland understorey, vegetated sand dunes.	No	No
Pseudophryne australis	Red-crowned Toadlet	V	-	Confined to the Sydney Basin, from Pokolbin in the north, the Nowra area to the south, and west to Mt Victoria in the Blue Mountains. Open forests, mostly on Hawkesbury and Narrabeen Sandstones. Inhabits periodically wet drainage lines below sandstone ridges that often have shale lenses or cappings.	No	No
Pterodroma leucoptera leucoptera	Gould's Petrel	V	E	Recorded off NSW coast. Breeds on Cabbage Tree Island offshore from Port Stephens, and on nearby Boondelbah island. Marine. Nesting habitat is located within steeply sloping rock scree gullies with a canopy of Cabbage Tree Palms.	No	No
Pteropus poliocephalus	**Grey-headed Flying-fox**	**V**	**V**	**Along the eastern coast of Australia, from Bundaberg in Qld to Melbourne in Victoria. Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.**	**Likely**	**Yes**
Ptilinopus superbus	Superb Fruit-Dove	V	-	Principally from north-eastern Qld to north-eastern NSW. Further south, it is confined to pockets of suitable habitat, and occurs as far south as Moruya. Rainforest and closed forests. May also forage in eucalypt or acacia woodland where there are fruit-bearing trees.	No	No
Rhipidura rufifrons	Rufous Fantail	-	M	Coastal and near coastal districts of northern and eastern Australia, including on and east of the Great Divide in NSW. Wet sclerophyll forests, subtropical and temperate rainforests. Sometimes drier sclerophyll forests and woodlands.	No	No
Rostratula australis	Australian Painted Snipe	E1	E	In NSW most records are from the Murray-Darling Basin. Other recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. Swamps, dams and nearby marshy areas.	No	No
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	There are scattered records of this species across the New England Tablelands and North West Slopes. Rare visitor in late summer and autumn to south-western NSW. Almost all habitats, including wet and dry sclerophyll forest, open woodland, open country, mallee, rainforests, heathland and waterbodies.	No	No

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and habitat	Likelihood of Occurrence	Impact Assessment Required
Sterna hirundo	Common Tern	-	M	Regular summer migrant to northern and eastern coastal Australia, including coastal NSW. Also scattered inland records. Offshore waters, ocean beaches, estuaries, large lakes. Less commonly freshwater swamps, floodwaters, sewage farms and brackish and saline lakes.	No	No
Sternula albifrons	Little Tern	E1	M	In NSW, it arrives from September to November, occurring mainly north of Sydney, with smaller numbers found south to Victoria. Sheltered coastal environments, harbours, inlets and rivers.	No	No
Stictonetta naevosa	Freckled Duck	V	-	Inland river systems, occurring as far as coastal NSW in times of drought. Freshwater swamps and creeks, lakes, reservoirs, farm dams and sewage ponds.	No	No
Tringa brevipes	Grey-tailed Tattler	-	M	Summer migrant to Australia. In NSW, distributed along most of the coast from the Qld border, south to Tilba Lake. More heavily distributed along coastal regions north of Sydney. Sheltered coasts with reefs and rock platforms or intertidal mudflats; intertidal rocky, coral or stony reefs; shores of rock, shingle, gravel or shells; embayments, estuaries and coastal lagoons; lagoons and lakes; and ponds in sewage farms and saltworks.	No	No
Tringa nebularia	Common Greenshank	-	M	Summer migrant to Australia. Recorded in most coastal regions of NSW; also widespread west of the Great Dividing Range, especially between the Lachlan and Murray Rivers and the Darling River drainage basin, including the Macquarie Marshes, and north-west regions. Terrestrial wetlands (swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans, saltflats, sewage farms and saltworks dams, inundated rice crops and bores) and sheltered coastal habitats (mudflats, saltmarsh, mangroves, embayments, harbours, river estuaries, deltas, lagoons, tidal pools, rock-flats and rock platforms).	No	No
Tringa stagnatilis	Marsh Sandpiper	-	M	Summer migrant to Australia. Recorded in all regions of NSW but especially the central and south coasts and (inland) on the western slopes of Great Divide and western plains. Swamps, lagoons, billabongs, saltpans, saltmarshes, estuaries, pools on inundated floodplains, intertidal mudflats, sewage farms and saltworks, reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes.	No	No
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Acacia pubescens	Downy Wattle	V	V	Restricted to the Sydney region around the Bankstown-Fairfield-Rookwood and Pitt Town area, with outliers occurring at Barden Ridge, Oakdale and Mountain Lagoon. Open woodland and forest, including Cooks River/Castlereagh Ironbark Forest, Shale/Gravel Transition Forest and Cumberland Plain Woodland. Occurs on alluviums, shales and at the intergrade between shales and sandstones.	No	No

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and habitat	Likelihood of Occurrence	Impact Assessment Required
Acacia terminalis subsp. *terminalis*	Sunshine Wattle	E1	E	Limited mainly to near-coastal areas from the northern shores of Sydney Harbour south to Botany Bay. Coastal scrub and dry sclerophyll woodland on sandy soils.	No	No
Allocasuarina glareicola		E1	E	Primarily restricted to the Richmond (NW Cumberland Plain) district, but with an outlier population found at Voyager Point, Liverpool. Castlereagh woodland on lateritic soil. Found in open woodland with Eucalyptus parramattensis, Eucalyptus fibrosa, Angophora bakeri, Eucalyptus sclerophylla and Melaleuca decora.	No	No
Caladenia tessellata	Thick Lip Spider Orchid	E1	V	Currently known from two disjunct areas; one population near Braidwood on the Southern Tablelands and three populations in the Wyong area on the Central Coast. Grassy sclerophyll woodland on clay loam or sandy soils, or low woodland with stony soil.	No	No
Cryptostylis hunteriana	Leafless Tongue Orchid	V	V	In NSW, recorded mainly on coastal and near coastal ranges north from Victoria to near Forster, with two isolated occurrences inland north-west of Grafton. Coastal heathlands, margins of coastal swamps and sedgelands, coastal forest, dry woodland, and lowland forest.	No	No
Genoplesium baueri	Bauer's Midge Orchid	E1	E	Has been recorded from locations between Nowra and Pittwater and may occur as far north as Port Stephens. Dry sclerophyll forest and moss gardens over sandstone.	No	No
Melaleuca biconvexa	Biconvex Paperbark	V	V	Only found in NSW, populations found in the Jervis Bay area in the south and the Gosford-Wyong area in the north. Damp places, often near streams or low-lying areas on alluvial soils.	No	No
Pimelea curviflora var. *curviflora*		V	V	Confined to the coastal area of the Sydney and Illawarra regions between northern Sydney and Maroota in the north-west and Croom Reserve near Albion Park in the south. Woodland, mostly on shaley/lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes.	No	No
Pimelea spicata	Spiked Rice-flower	E1	E	Two disjunct areas; the Cumberland Plain (Marayong and Prospect Reservoir south to Narellan and Douglas Park) and the Illawarra (Landsdowne to Shellharbour to northern Kiama). Well-structured clay soils. *Eucalyptus moluccana* (Grey Box) communities and in areas of ironbark on the Cumberland Plain. Coast Banksia open woodland or coastal grassland in the Illawarra.	No	No
Syzygium paniculatum	Magenta Lilly Pilly	E1	V	Only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest.	Yes	No – planted street tree

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and habitat	Likelihood of Occurrence	Impact Assessment Required
Thesium australe	Austral Toadflax	V	V	In eastern NSW it is found in very small populations scattered along the coast, and from the Northern to Southern Tablelands. Grassland on coastal headlands or grassland and grassy woodland away from the coast.	No	No

Appendix C - City of Sydney UESAP

Scientific Name	Common name	Likelihood to utilise he study area
Acrocephalus australis	Australian Reed-warbler	No
Chalinolobus gouldii	Gould's Wattle Bat	Unlikely
Elsyornis melanops	Black-fronted Dotterel	No
Eulampris tenuis	Bar-sided Skink	Potential
Gallirallus philippensis	Buff-banded Rail	No
Himantopus himantopus	Black-winged Stilt	No
Litoria aurea	Green and Golden Bell Frog	No
Litoria fallax	Eastern Dwarf Tree Frog	No
Litoria peronii	Perons Tree Frog	Potential
Malurus cyaneus	Superb Fairy Wren	Potential
Mormopterus norfolkensis	Eastern Freetail Bat	Unlikely
Ninox strenua	Powerful Owl	No
Perameles nasuta	Long-nosed Bandicoot	No
Platalea regia	Royal Spoonbill	No
Pseudomys novaehollandiae	New Holland Honeyeater	Likely
Pteropus poliocephalus	Grey-headed Flying-fox	Likely
Saproscincus spectabilis	Gully Skink	Potential
Tiliqua scincoides scincoides	Eastern Blue-tongue Lizard	No
Vespadelus vulturnus	Little Forest Bat	Unlikely
Zosterops lateralis	Silvereye	Likely

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