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Aland Leppington Civic Centre Planning Proposal – Biodiversity Assessment

Leppington (1) 88 Development

DOCUMENT TRACKING

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Project Manager	Courtney Blick
Prepared by	Rebecca Ben-Haim, Michael Gregor, Courtney Blick
Reviewed by	David Bonjer
Approved by	David Bonjer
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Template 2.8.1

Contents

1. Introduction	4
1.1 Land Subject to the Planning Proposal	4
2. Statutory Framework and Strategic Assessments	7
2.1 Strategic Plans	7
2.2 Statutory Framework.....	9
2. Methodology.....	13
2.3 Literature Review and Database Search	13
2.3.1 Ecology Field Survey	13
2.4 Survey Limitations.....	13
3. Existing Environment	15
3.1. Landscape Features	15
2.4.1 IBRA Bioregion and Subregion	15
2.4.2 Habitat Connectivity	15
3.1.1. Watercourses.....	15
3.2. Vegetation Communities	15
3.3. Threatened Species and Their Habitat.....	24
3.3.1. Habitat Assessment	24
3.3.2. Threatened Flora	24
4. Conclusion and Recommendations.....	27
5. References	28
Appendix A EPBC Act Condition Thresholds for Cumberland Plain Woodland	29

List of Figures

Figure 1: Land subject to the Planning Proposal.....	5
Figure 2: Current land zoning within the study area.....	6
Figure 3: Biodiversity certified lands within the study area.....	12
Figure 4: Mapped watercourses in the vicinity of the study area	21
Figure 5: Previously mapped vegetation under the State Vegetation Type Map (SVTM) within the study area (DPE 2022b).....	22
Figure 6: Validated Vegetation Communities	23
Figure 7: Threatened flora and fauna species identified within 10 km of the study area (NSW BioNet 2022)	26

List of Tables

Table 1: Strategic plans and relevance to this study.....	7
Table 2: Statutory framework and relevance to this study.....	9
Table 3: Summary of vegetation communities within the study area.....	16
Table 4: Habitat features identified within the study area.....	24
Table 5: Threatened flora species with the potential to occur in the study area.....	24
Table 6: Threatened fauna species with the potential to occur in the study area.....	25

Abbreviations

Abbreviation	Description
BC Act	<i>Biodiversity Conservation Act 2016</i>
BDAR	Biodiversity Development Assessment Report
BOS	Biodiversity Offset Scheme
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DPE	Department of Planning and Environment
ELA	Eco Logical Australia
ENV	Existing Native Vegetation
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FM Act	<i>Fisheries Management Act 1994</i>
LGA	Local Government Area
MNES	Matters of National Environmental Significance
PCT	Plant Community Type
SIS	Species Impact Statement
TEC	Threatened Ecological Community
TSC Act	<i>Threatened Species Conservation Act 1995 (now repealed)</i>
Western Parkland City SEPP	<i>State Environmental Planning Policy (Precincts – Western Parkland City) 2021</i>
WM Act	<i>Water Management Act 2000</i>
WSUD	Water Sensitive Urban Design

1. Introduction

Eco Logical Australia Pty Ltd (ELA) was engaged by Leppington (1) 88 Development to prepare a Biodiversity Assessment to support a Planning Proposal to amend the *State Environmental Planning Policy (Precincts – Western Sydney Parkland) 2021* (Western Parkland City SEPP) for the lots located at 173-183 Rickard Road (the ‘**study area**’). The Planning Proposal is supported by the Leppington Civic Centre Master Plan which facilitates the realisation of the Leppington Town Centre vision through the provision of retail amenity and a mixed use hub.

The proposal seeks to rezone the site comprising 3.2ha of land in the in the Leppington Town Centre Precinct which was first identified by the NSW Government in 2013 as a key strategic centre within the SWGA to deliver new homes and jobs in close proximity to public transport. This was followed by the announcement of the Western Sydney International Airport (WSI) in 2014 and in anticipation of the delivery of Leppington Train Station in 2015.

The Leppington Civic Centre proposal provides a site-specific planning framework that will help support Council’s vision for the Leppington Town Centre and enable it to transition into a new thriving transit-oriented community that builds on the NSW Government’s vision and aspirations under the Western Sydney Growth Area program.

1.1 Land Subject to the Planning Proposal

The land subject to the Planning Proposal (herein referred to as the ‘**study area**’ as defined in Figure 1) is 3.2 ha in size encompasses:

- 173 Rickard Road, Leppington (Lot 2 DP812366)
- 183 Rickard Road, Leppington (Lot 1 DP812366)

The study area is located south of the Leppington Train Station with 143 m of frontage to Rickard Road. The study area has previously been used for agricultural purposes and contains fragmented, degraded patches of native vegetation.

The study area is currently zoned B3 (Commercial Core) and SP2 (Infrastructure) (Figure 2).

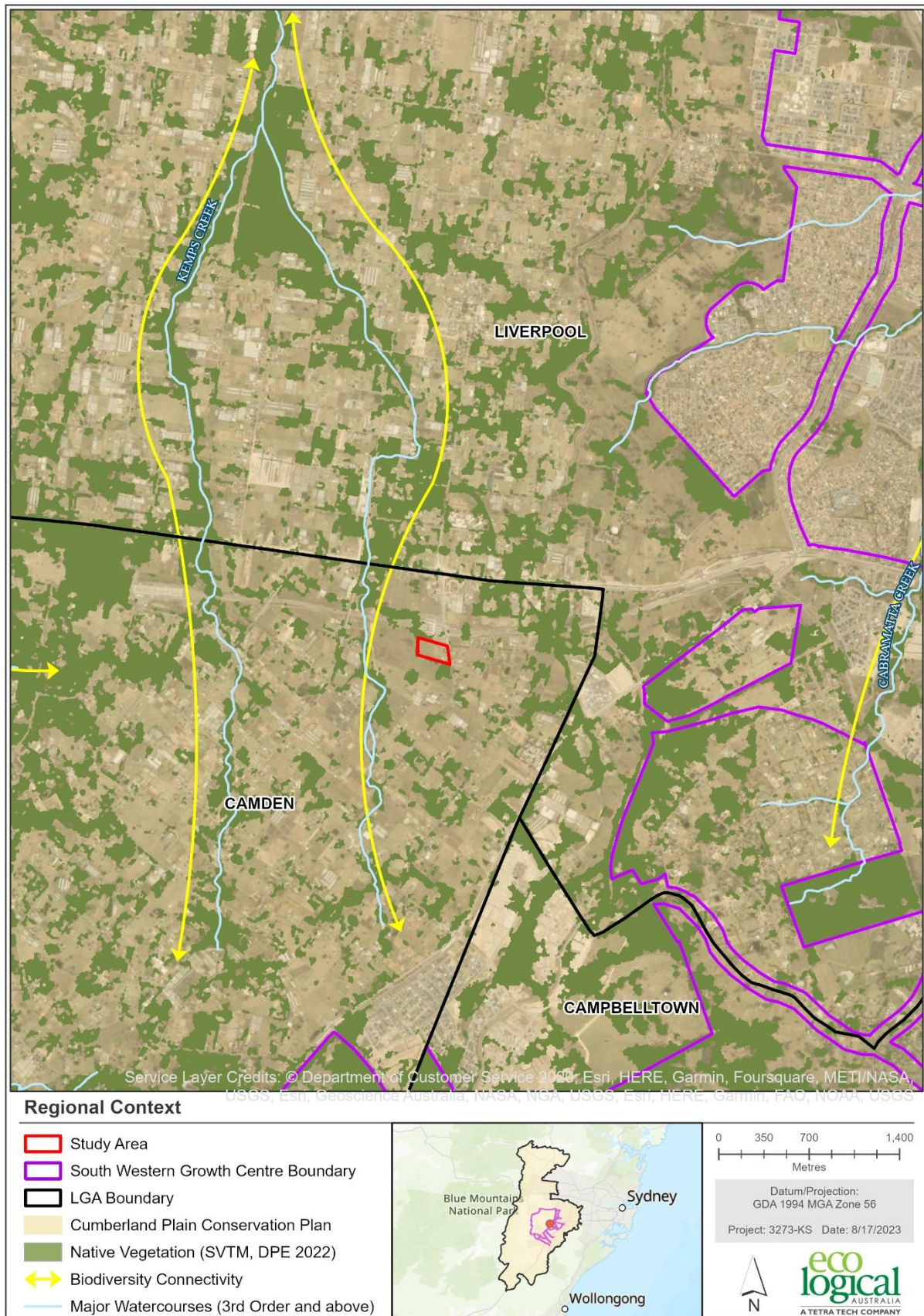


Figure 1: Land subject to the Planning Proposal

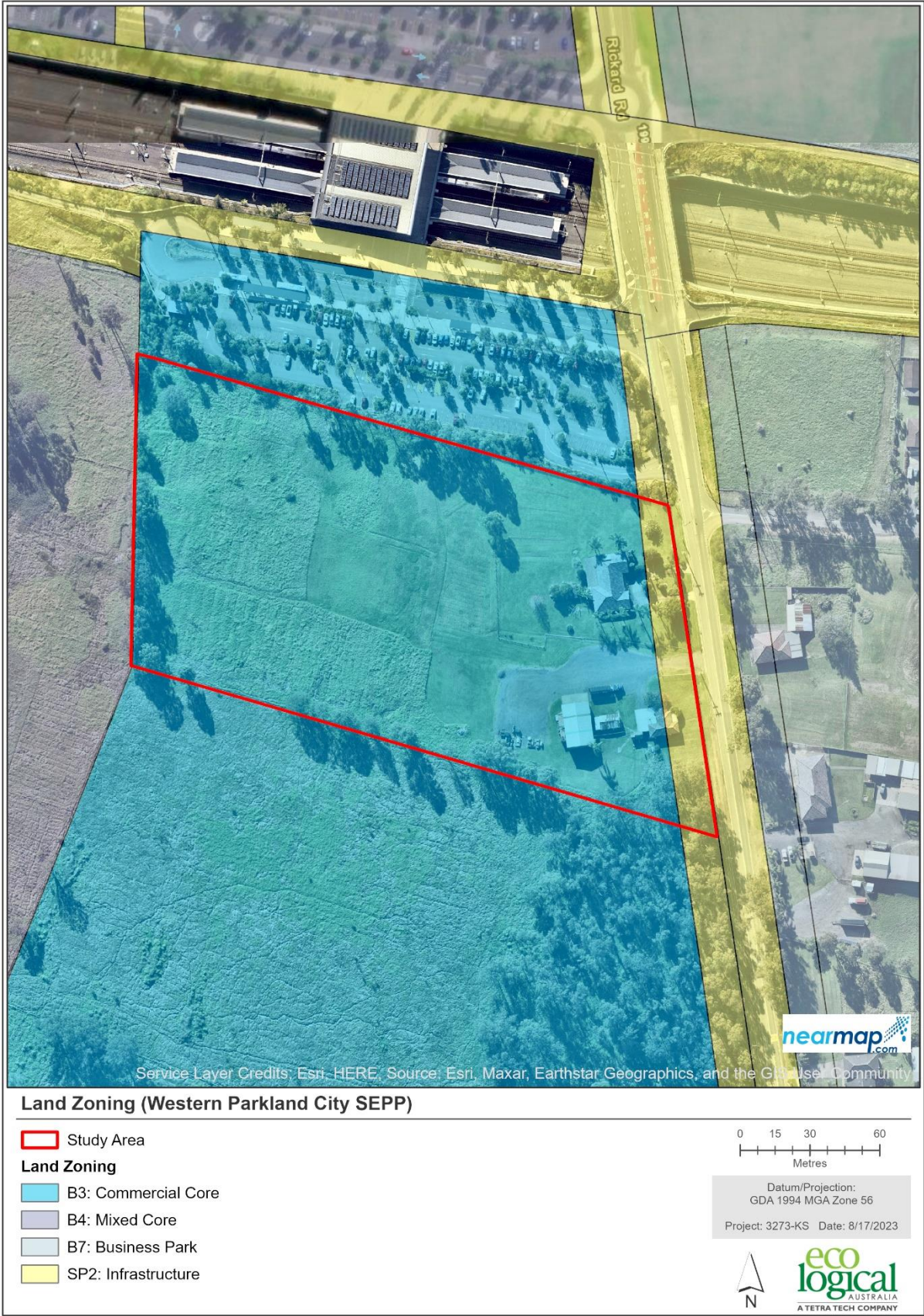


Figure 2: Current land zoning within the study area

2. Statutory Framework and Strategic Assessments

A substantial array of strategic plans, legislation, policies, and guidelines apply to the planning and management of biodiversity issues within the study area. This information was reviewed and used to identify priority issues and approaches for the study area and are summarised below.

2.1 Strategic Plans

Table 1 summarises the relevant strategic assessments that apply to the study area, which should be considered within the Planning Proposal.

Table 1: Strategic plans and relevance to this study

Strategic Plan	Biodiversity / Sustainability Objectives
The Greater Sydney Region Plan, <i>A Metropolis of Three Cities</i> (Greater Sydney Commission, 2018)	The Greater Sydney Region Plan, <i>A Metropolis of Three Cities</i> (Greater Sydney Commission, 2018) is built on a vision of three cities where most residents live within 30 minutes of their jobs, education and health facilities, services, and great places. To meet the needs of a growing and changing population the vision seeks to transform Greater Sydney into a metropolis of three cities: • The Western Parkland City. • The Central River City. • The Eastern Harbour City. The Plan includes directions and objectives for liveability and sustainability, productivity, and infrastructure within Greater Sydney, including two sustainability objectives, which are most relevant to this study, being: • biodiversity is protected, urban bushland and remnant vegetation is enhanced; • urban tree canopy cover is increased; and • the Green Grid links parks, open spaces, bushland and walking and cycling paths. The Plan is supported by five District Plans, which provide greater details regarding conservation objectives, including the Western Sydney District Plan.
Our Greater Sydney 2056 – Western Sydney District Plan (Greater Sydney Commission, 2018)	The Western Sydney District Plan is a 20-year plan to manage economic, social, and environmental growth and provides a guide for implementing the Greater Sydney Region Plan at a district level. The Plan outlines two relevant sustainability planning priorities, which coincide and build on the objectives listed within the Greater Sydney Region Plan, being: • protecting and enhancing bushland and biodiversity; and • increasing urban tree canopy cover and delivering Green Grid connections.
Greener Places - An Urban Green Infrastructure Design Framework for New South Wales (Government Architect NSW, 2020) and Draft Greener Places Design Guide (Government Architects NSW, 2020)	Greener Places is a design framework to guide the planning, design, and delivery of green infrastructure in urban areas across NSW. It aims to create a healthier, more liveable, and sustainable urban environment by improving community access to recreation and exercise, supporting walking, and cycling connections and improving the resilience of urban areas. The Draft Greener Places Design Guide framework provides information on how to design, plan, and implement green infrastructure in urban areas throughout NSW. The draft guide provides a consistent methodology to help State and local government, and industry create a network of green infrastructure. This study focuses on one of the three major components of the green infrastructure network, being bushland and waterways.

Strategic Plan	Biodiversity / Sustainability Objectives
	Five key strategies have been developed to connect, protect, restore, enhance, and create urban habitat as an integral part of how urban areas are planned, constructed, and maintained, which include: • protect and conserve ecological values; • restore disturbed ecosystems to enhance ecological value and function; • create new ecosystems; • connect people to nature; and • connect urban habitats.
The Cumberland Plain Conservation Plan – A Conservation Plan for Western Sydney to 2056 (DPE 2022a)	The Cumberland Plain Conservation Plan identifies strategically important biodiversity areas within the Cumberland subregion to offset the biodiversity impacts of future urban development, while ensuring a vibrant and liveable city. Similar to the Sydney Region Growth Centres, The Plan has been developed to meet requirements for strategic biodiversity certification under the BC Act and strategic assessment under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act). The Plan is part of the NSW Government’s commitment to delivering the Western Parkland City, consistent with the Greater Sydney Commission’s strategic vision described in its <i>Greater Sydney Region Plan: A Metropolis of Three Cities</i> and Western City District Plan. It will protect the region’s threatened plants and animals and support the needs of the community through the creation of new conservation lands and green spaces close to homes. The Plan will achieve this through a conservation program that includes 26 commitments and 131 actions designed to improve ecological resilience and protect biodiversity. The Conservation Program highlights include: • Identify 4,510 ha of high biodiversity land in the nominated areas to be avoided from development through upfront strategic conservation planning and apply development controls to these areas to minimise future impacts on biodiversity. • Protect, in perpetuity, a minimum of 5,325 ha of impacted native vegetation communities within a conservation land and up to 11,900 ha of conservation land to deliver in-perpetuity biodiversity outcomes, improve ecological resilience and connectivity, and increase the area of green space and reserves for the community to enjoy. • Secure important koala movement corridors by establishing the Georges River Koala Reserve and install up to 120 km of koala-exclusion fencing and a safe crossing at Appin Road to protect koalas from increasing threats such as vehicle strike and dog attacks. • Prioritise and investigate the establishment of 2 new reserves in the Wollondilly and Hawkesbury local government areas – Gulguer Reserve Investigation Area and Confluence Reserve Investigation Area – and encourage landholders to enter into biodiversity stewardship agreements in areas such as Razorback. • Undertake ecological restoration of threatened ecological communities to reconstruct over-cleared vegetation types It is noted that the Plans certification order excludes parts of Western Sydney that overlap with the South West Growth Area, including the study area.

2.2 Statutory Framework

Table 2 summarises the relevant legislation and policies that apply to the study area, which are required to be considered within the Planning Proposal.

Table 2: Statutory framework and relevance to this study

Legislation / Policy	Relevance
Commonwealth	
<i>Environment Protection & Biodiversity Conservation Act 1999</i> (EPBC Act)	The Commonwealth EPBC Act establishes a process for assessing the environmental impact of activities and developments where MNES may be affected. The EPBC Act lists endangered ecological communities, threatened and migratory species that have the potential to occur, or are known to occur on a site. On 28 February 2012, the Commonwealth Minister for the Environment announced the program of development related activities within the Growth Centres that had been approved under the Growth Centres Strategic Assessment. Specifically, <i>“All actions associated with the development of the Western Sydney Growth Centres as described in the Sydney Region Growth Centres Strategic Assessment Program Report (Nov 2010) have been assessed at the strategic level and approved in regard to their impact on the following matters of national environmental significance (MNES):</i> • <i>World Heritage Properties</i> • <i>National Heritage Places,</i> • <i>Wetlands of International Importance,</i> • <i>Listed threatened species, populations and communities, and</i> • <i>Listed migratory species.”</i> This approval essentially means that the Commonwealth is satisfied that the conservation and development outcomes that will be achieved through development of the Growth Centres Precincts will satisfy their requirements for environmental protection under the EPBC Act. Therefore, provided development activity proceeds in accordance with the Growth Centres requirements (such as the Biodiversity Certification Order, the Western Parkland City SEPP, and Development Control Plans (DCPs) and Growth Centres Development Code), then there is no requirement to assess the impact of development activities on MNES and hence no requirement for referral of activities to the Commonwealth. The requirement for assessment and approval of threatened species and endangered ecological communities and the other MNES issues listed above under the EPBC Act has now been ‘turned off’ by the approval of the Strategic Assessment.
State	
<i>Biodiversity Conservation Act 2016</i> (BC Act)	In November 2016, the NSW parliament passed the <i>Biodiversity Conservation Act 2016</i> (BC Act). This new legislation repealed the <i>Threatened Species Conservation Act 1995</i> (TSC Act) and took effect 25 August 2017. Among other things, the BC Act introduces new requirements for biodiversity assessment and requires proponents to offset significant biodiversity impacts through the purchase and retirement of biodiversity credits. The government has recently exhibited regulations that provide further detail on the changes as well as establish the transitional arrangements. Similar to the TSC Act, the BC Act aims to protect and encourage the recovery of threatened species, populations and communities listed under the Act. The BC Act is integrated with the <i>Environmental Planning and Assessment Act 1979</i> (EP&A Act) and requires consideration of whether a development (Part 4 of the EP&A Act) or an activity (Part 5 of the EP&A Act) is likely to significantly affect threatened species, populations and ecological communities or their habitat. The schedules of the Act list species, populations and communities as endangered or vulnerable. New species, populations and communities are continually being added to the

Legislation / Policy	Relevance
	schedules of the BC Act. All developments, land use changes or activities need to be assessed to determine if they will have the potential to significantly impact on species, populations or communities listed under the Act. Biodiversity certification was introduced under the TSC Act (s.126G) to confer certification on an environmental planning instrument if the Minister is satisfied that it will lead to the overall improvement or maintenance of biodiversity values – typically at a landscape scale. Under the new BC Act, existing biodiversity certified areas remain valid following the repealed TSC Act. The effect of granting certification is that any development or activity requiring consent (Under Part 4 and 5 of the EP&A Act) is automatically ‘development that is not likely to significantly affect threatened species’. This certification removes the need to address threatened species considerations and the test of significance (s.7.3 of the BC Act), including the preparation of Species Impact Statements (SIS) for Part 5 activities or triggering the Biodiversity Offset Scheme (BOS) for Part 4 developments. The Study area is wholly biodiversity certified.
	Environmental Planning Instruments and Other Policies
<i>State Environmental Planning Policy (Precincts – Western Parkland City) 2021</i> (Western Parkland City SEPP)	Key to the assessment and protection of biodiversity values in the Sydney Region Growth Centres is the Biodiversity Certification (under the BC Act) of the Western Parkland City SEPP. The Biodiversity Certification has three main functions. It requires the protection of 2,000 ha of Existing Native Vegetation (ENV) within the Growth Centres; it allows for development to proceed without further biodiversity assessment at the Development Application stage on land that is ‘biodiversity certified’, and it establishes a funding mechanism for conservation outcomes outside of the Growth Centres. The former Growth Centres SEPP was biodiversity certified by order of the Minister for the Environment under s.126G of the TSC Act. Under the new BC Act, existing biodiversity certified areas remain valid following the repealed TSC Act. The Minister’s certification was based on the overall improvement or maintenance of biodiversity values and the mechanism for achieving this is outlined in the <i>Growth Centres Conservation Plan</i> (Eco Logical Australia, 2007) and the conditions for biodiversity certification are documented in the Ministers order for consent. The Growth Centres SEPP was repealed and clauses protecting native vegetation were incorporated into the Western Parkland City SEPP. Areas which are currently biodiversity certified and non-biodiversity certified are shown in Figure 3. The Study area is required to be assessed against the conditions of the Biodiversity Conservation Order to ensure that the planned rezoning and subsequent development of the Study area complies.
<i>Sydney Region Growth Centres Biodiversity Certification Order (2007)</i>	To achieve the 2,000 ha protection target, each precinct must protect ENV on non-biodiversity certified land, or an equivalent amount on certified land. The (Draft) Growth Centres Conservation Plan (2007) assessed native vegetation across the entire Growth Centres area and identified ENV, defined as areas of indigenous trees (including mature and saplings) that: • had 10 % or greater over-storey canopy cover present, • were ≥ 0.5 ha in area, and • were identified as “vegetation” on maps 4 and 5 of the (Draft) Growth Centres Conservation Plan, at the time the biodiversity certification order took effect, subject to condition 13. There is no mapped ENV within the study area. The study area is wholly biodiversity certified (Figure 3). Regardless, this biodiversity assessment has been prepared to identify values on site that may be considered for retention under the Planning Proposal.

Legislation / Policy	Relevance
<i>Growth Centres Development Code 2006</i>	The Growth Centres Development Code guides the planning and urban design in the North West and South West Growth Areas. The Development Code includes objectives and provisions that support the retention of as much native vegetation, habitat, and riparian areas within the precinct through incorporation into land use planning outcomes such as lower density development in these areas, subdivision patterns, road design, local parks, and other areas required to be set aside for community uses without adversely affecting the development yield of areas. As a requirement under the Development Code, the subject site will need to demonstrate how the biodiversity and other values of areas identified by the Western Parkland City SEPP will be protected, maintained, and enhanced. Key issues will include boundary management (e.g., buffers to surrounding development), bush fire and water sensitive urban design (WSUD) (GCC 2006).



Figure 3: Biodiversity certified lands within the study area

2. Methodology

2.3 Literature Review and Database Search

A review of readily available databases pertaining to the ecology and environmental features of the study area and surrounding area, and existing vegetation mapping was conducted to identify records of threatened species, populations and communities and their potential habitat. Databases and vegetation mapping that were reviewed included:

- BioNet (Atlas of NSW Wildlife) database search (10 km) threatened species, populations and ecological communities listed under the BC Act (accessed August 2022).
- EPBC Act Protected Matters Search Tool (5 km) for threatened and migratory species, populations and ecological communities listed under the Commonwealth EPBC Act (Department of Climate Change, Energy, the Environment and Water (DCCEEW) 2022)
- Aerial mapping and vegetation mapping (DPE 2022b) to assess the extent of vegetation including mapped threatened ecological communities (TECs) listed under the BC Act and / or EPBC Act.
- Aerial photography (NearMap) of the study area and surrounds were also used to investigate the extent of vegetation cover and landscape features including IBRA region and subregion.
- Western Parkland City SEPP mapping
- Soil Landscapes (Hazelton 1990)
- Hydroline spatial data

2.3.1 Ecology Field Survey

The field survey was conducted by ELA ecologist Michael Gregor on 19 August 2022. The study area was traversed using the random meander method (Cropper 1993) to verify the presence of native vegetation, threatened ecological communities, and threatened species and/or their habitat. Where the boundaries of vegetation communities differed from existing vegetation mapping, these were recorded using Avenza Maps on a smart phone.

All vegetation within the study area was mapped and all native vegetation was assigned to a best fit Plant Community Type (PCT). Exotic cover and planted native vegetation were not assigned to a PCT. The best fit PCT was determined by reviewing the previous vegetation mapping, noting all flora species present, the geographical location and the landform. General notes on species composition and condition were also taken.

Bird species and other fauna were recorded opportunistically. Targeted surveys were not undertaken for any threatened species.

2.4 Survey Limitations

This assessment was not intended to provide an inventory of all species present across the study area but instead an overall assessment of the terrestrial and aquatic ecological values of the study area with particular emphasis on threatened species, endangered ecological communities, and key fauna habitat features. It is important to note that some species may not have been detected in the study area during the inspection as they may be cryptic or seasonal and only detectable during flowering or during

breeding. In this case the likelihood of their occurrence in the study area has been assessed based on the presence of potential habitat.

3. Existing Environment

3.1. Landscape Features

The majority of the study area has previously been cleared for residential or agricultural purposes. Vegetation within the study area consisted largely of cleared areas of exotic pasture. Remnant native vegetation was present in fragmented, degraded patches.

2.4.1 IBRA Bioregion and Subregion

The subject site is located within the Sydney Basin IBRA Bioregion and the Cumberland Subregion.

2.4.2 Habitat Connectivity

Soils within the Cumberland Subregion are generally fertile compared to surrounding Hawkesbury Sandstone landscapes, which has resulted in extensive clearing of native vegetation for agriculture and more recently, urban development. Because of this, approximately 13% of the pre-1970 extent of native vegetation in the Cumberland Subregion remains intact and in good condition (DECCW, 2011). Remaining vegetation is generally highly fragmented, which larger patches restricted to reserves, riparian corridors, and areas not suitable for agriculture. Within the study area, degraded native vegetation is present in fragmented patches. Biodiversity connectivity remains to the west of the study area along the riparian corridor of Kemps Creek.

3.1.1. Watercourses

There are no mapped watercourses within the study area. Tributaries of Kemps Creek are located to the west of the study area (Figure 4).

3.2. Vegetation Communities

Previous vegetation mapping identified PCT 3320 within the study area (Figure 5). The field survey confirmed the presence of one PCT within the study area, it was divided into two condition classes (Figure 6):

- *PCT 3320 Cumberland Shale Plains Woodland* (disturbed)
- *PCT 3320 Cumberland Shale Plains Woodland* (canopy only)

The study area includes areas of exotic dominated and planted native vegetation which cannot be assigned a PCT. These have been mapped as 'Exotic' (planted and gardens) or 'Planted Native'. The study area also includes cleared/developed areas devoid of vegetation, mapped as 'Built'. A description of each PCT and condition zone is provided below in Table 3, as well as a justification for each condition assigned.

PCT 3320 Cumberland Shale Plains Woodland is associated with the TEC *Cumberland Plain Woodland in the Sydney Basin Bioregion* listed under both the BC Act and Commonwealth EPBC Act as critically endangered. Given the range of conditions of this PCT within the study area, not all occurrences conform with the definition of their associated TEC listing. Therefore, the TEC status for each PCT/condition zone combination is addressed following the description, including justification as to why it does or does not conform to the associated TEC.

Table 3: Summary of vegetation communities within the study area

PCT	Condition	TEC	Description	BC Act	EPBC Act	Photo
PCT 3320	Disturbed	Cumberland Plain Woodland	Within the study area, PCT 3320 (disturbed) occurs in small fragmented patches (Figure 6). PCT 3320 (disturbed) within the study area was characterised by a canopy (20% cover) dominated by <i>Eucalyptus tereticornis</i> (Forest Red Gum) and <i>E.moluccana</i> (Grey Box) along with a sparse mid-storey (5-10% cover) of mixed native and exotic species. The native species in the mid-story included <i>Acacia implexa</i> (Hickory Wattle), <i>Bursaria spinosa</i> (Blackthorn), and <i>Indigofera australis</i> (Australian indigo) and the exotic species included <i>Lycium ferocissimum</i> (African Boxthorn) and <i>Ligustrum lucidum</i> (Large-leaved Privet). The cover of native species in the ground layer in these areas was around 10-20% with the following species common: <i>Themeda triandra</i> (Kangaroo Grass), <i>Einadia hastata</i> (Berry Saltbush), <i>Microlaena stipoides</i> var. <i>stipoides</i> (Weeping Grass) and <i>Dichondra repens</i> (Kidney Weed). The cover of exotic species in the ground layer of these areas was over 50% with the following species common: <i>Cynodon dactylon</i> (Common Couch), <i>Cirsium vulgare</i> (Spear Thistle), <i>Paspalum dilatatum</i> (Paspalum), <i>Senecio madagascariensis</i> (Fireweed), <i>Thunbergia alata</i> (Black-eyed Susan) and <i>Sida rhombifolia</i> (Paddy's Lucerne). PCT 3320 is associated with Cumberland Plain Woodland, which occurs on soils derived from Wianamatta Shale across the Cumberland Plain in Western Sydney. The dominant tree species include <i>Eucalyptus moluccana</i> (Grey Box), <i>E. tereticornis</i> (Forest Red Gum) with <i>E. crebra</i>	Yes	No Native Canopy Cover >10%. Perennial understorey vegetation <50% native species. Perennial understorey native vegetation cover <30%.	

PCT	Condition	TEC	Description	BC Act	EPBC Act	Photo
			(Narrow-leaved Ironbark), <i>E. eugenioides</i> (Thin-leaved Stringybark) and <i>Corymbia maculata</i> (Spotted Gum) occurring less frequently. Under the BC Act, the Final Determination for Cumberland Plain Woodland provides additional information to aid recognition of this community. The occurrences of PCT 3320 (disturbed) within the study area meet the Final Determination definition of Cumberland Plain Woodland (NSW Scientific Committee 2014) for the following reasons: • The patches occur at around 310 m elevation, which is within the described range of up to 350 m • The landform pattern where the patches are found matches that described in the Final Determination of <i>flat to undulating or hilly terrain</i> • The species composition within all strata of the patches overlaps well with the assemblage of species detailed in the Final Determination as being characteristic of Cumberland Plain Woodland. Under the EPBC Act, a patch of vegetation must meet condition thresholds for it to be considered Cumberland Plain Woodland. These criteria are based on the percent cover of native canopy and ground layer as well as the patch size (Appendix A). The patches mapped as PCT 3320 (disturbed) within the study area do not meet the patch-size criteria, i.e., greater than 0.5 ha and, therefore,			

PCT	Condition	TEC	Description	BC Act	EPBC Act	Photo
			does not represent the Cumberland Plain Woodland TEC, as defined by the EPBC Act.			
PCT 3320	Canopy Only	Cumberland Plain Woodland	PCT 3320 (canopy only) occurs in the study area and was characterised by a tree canopy consisting of isolated <i>E. tereticornis</i> (Forest Red Gum) and <i>E.moluccana</i> (Grey Box) and lower occurrences of <i>E.crebra</i> (Narrow-leaved Ironbark). The mid-story of these patches was completely absent. The ground layer was completely exotic including the following species: <i>Cenchrus clandestinus</i> (Kikuyu Grass), <i>Bromus catharticus</i> (Prairie Grass) and <i>Senecio madagascariensis</i> (Fireweed). Under the BC Act, the Final Determination for Cumberland Plain Woodland provides additional information to aid recognition of this community. The occurrences of PCT 3320 (canopy only) within the study area meet the Final Determination definition of Cumberland Plain Woodland (NSW Scientific Committee 2014) for the following reasons: • The patches occur at around 310 m elevation, which is within the described range of up to 350 m • The landform pattern where the patches are found matches that described in the Final Determination of <i>flat to undulating or hilly terrain</i> • The species composition within the canopy of the patches overlaps well with the assemblage of species detailed in the Final Determination as	Yes	No Canopy contains a mix of species typical of this community as listed in BC Act Final Determination and EPBC Act Conservation Advice. Patch sizes generally <0.5 ha. Perennial understorey vegetation cover <30%.	

PCT	Condition	TEC	Description	BC Act	EPBC Act	Photo
			being characteristic of Cumberland Plain Woodland. Under the EPBC Act, a patch of vegetation must meet condition thresholds for it to be considered Cumberland Plain Woodland. These criteria are based on the percent cover of native canopy and ground layer as well as the patch size (Appendix A). The patches mapped as PCT 3320 (canopy only) within the study area do not meet the patch-size criteria, i.e., greater than 0.5 ha and, therefore, does not represent this TEC, as defined by the EPBC Act.			
N/A (Native Planted)	N/A	N/A	Native species have been planted within the adjacent car park on Lot 1//1200957 (Figure 6), which does not form part of the study area. However, this vegetation was surveyed and this vegetation marginally hangs over the study area. The plantings here are in heavily mulched garden beds along the perimeter and in small islands within the car park. The species planted here includes <i>Eucalyptus sp</i>, <i>Themeda triandra</i> (Kangaroo Grass), <i>Lomandra longifolia</i> (Spiked-mat Rush), <i>Hardenburgia violacea</i> (False Sarsparilla), <i>Dianella caerulea</i> (Blue Flax-lily), <i>Indigofera australis</i> (Australian indigo), <i>Imperata cylindrica</i> (Cogon Grass), <i>Acacia decurrens</i> (Green Wattle) and <i>Acacia parramattensis</i> (Parramatta Wattle).	N/A	N/A	

PCT	Condition	TEC	Description	BC Act	EPBC Act	Photo
N/A (Exotic Planted)	N/A	N/A	The exotic planted vegetation occurs in the study area around the built housing areas (Figure 6). This included species such as <i>Jacaranda mimosifolia</i> (Jacaranda), <i>Archontophoenix cunninghamiana</i> (Bangalow Palm), <i>Syzygium smithii</i> (Lily Pilly), <i>Agapanthus praecox</i> (African Lily) and <i>Pinus sp.</i>	N/A	N/A	
N/A (Exotic Grasses)	N/A	N/A	The exotic grass occurs in portions of the study area that have been cleared (Figure 6). These areas had no canopy or mid-storey, and the ground layer was dominated by exotic pasture and weed species such as <i>Cenchrus clandestinus</i> (Kikuyu Grass), <i>Bromus catharticus</i> (Prairie Grass), <i>Eragrostis curvula</i> (African Lovegrass), <i>Bidens pilosa</i> (Cobblers Pegs), <i>Paspalum dilatatum</i> (Paspalum), <i>Setaria parviflora</i> (Pigeon Grass), <i>Sida rhombifolia</i> (Paddy's lucerne) and <i>Senecio madagascariensis</i> (Fireweed).	N/A	N/A	

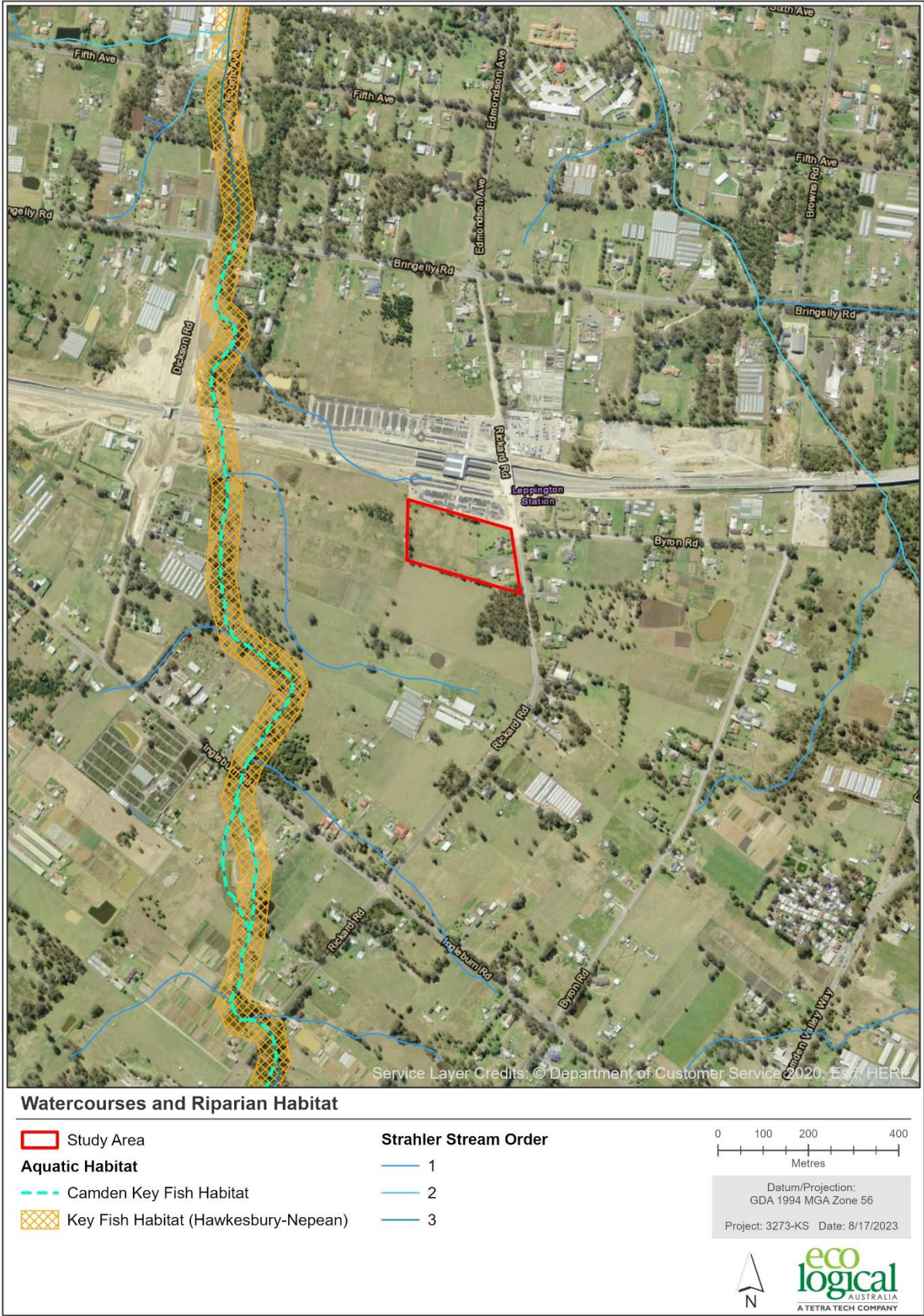


Figure 4: Mapped watercourses in the vicinity of the study area

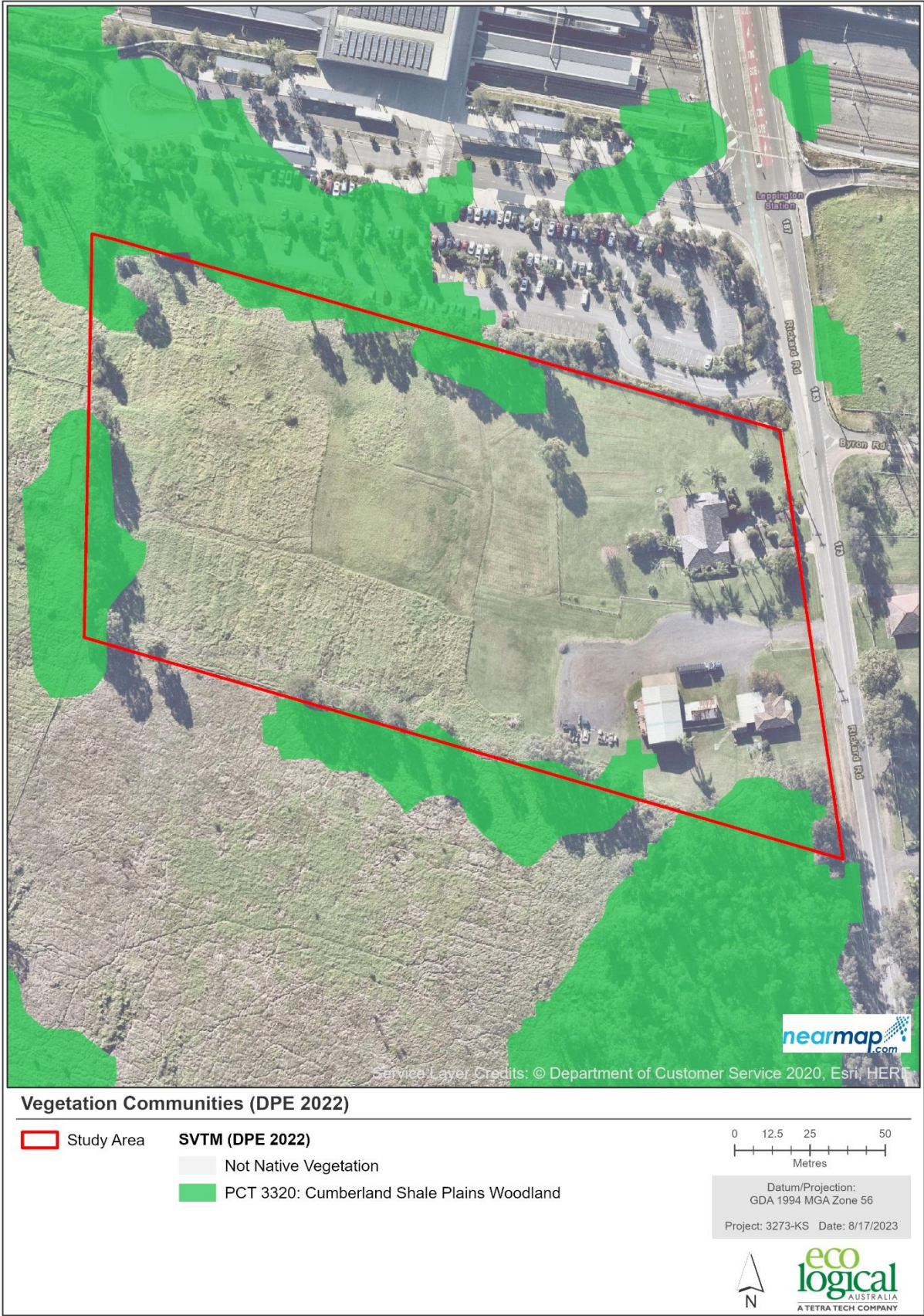


Figure 5: Previously mapped vegetation under the State Vegetation Type Map (SVTM) within the study area (DPE 2022b)



Figure 6: Validated Vegetation Communities

3.3. Threatened Species and Their Habitat

3.3.1. Habitat Assessment

Fauna habitat features recorded in the study area is listed in Table 4 below.

Table 4: Habitat features identified within the study area

Habitat feature	Associated species	Presence
Large expanse of native vegetation	Birds, microchiropteran bats (microbats), megachiropteran bats (fruit bats), arboreal mammals and reptiles	Connected to a 0.5 ha patch of woodland to the south of 2//812366
Nectar producing species	Arboreal mammals/birds and fruit bats	Yes, throughout all the properties
Hollow-bearing trees	Microbats, birds, mammals, amphibians, reptile	Not observed during the field survey
Coarse woody debris (fallen logs)	Terrestrial mammals, reptiles, invertebrates	Not observed during the field survey
Leaf litter	Reptiles, amphibians, invertebrates	Present in the PCT 3320 (disturbed) areas
Water body	Amphibians, reptiles, microbats	Not observed during the field survey
Rocky outcrops	Microbats, reptiles	Not observed during the field survey
Mistletoe	Arboreal mammals/birds and fruit bats	Not observed during the field survey
Winter flowering species	Winter migratory birds, arboreal mammals and megachiropteran bats (fruit bats)	Yes, throughout all the properties

3.3.2. Threatened Flora

No threatened flora species were identified opportunistically. However, threatened flora species associated with native vegetation identified within the study area and recorded within 10 km of the study area were identified as having the potential to occur within the study area. These species are presented in Table 5 and Figure 7.

Table 5: Threatened flora species with the potential to occur in the study area

Scientific name	Common name	BC Act Status	EPBC Act Status	Habitat features present within the study area
<i>Acacia pubescens</i>	Downy Wattle	V	V	Woodland
<i>Grevillea juniperina</i> subsp. <i>juniperina</i>	Juniper-leaved Grevillea	V	-	Woodland
<i>Pimelea spicata</i>	Spiked Rice-flower	E	E	Woodland

V = VULNERABLE, E = ENDANGERED, E1 = ENDANGERED, - = NOT LISTED.

A list of threatened fauna species with the potential to occur within the study area was compiled based on habitat features identified within the study area during field survey and records within the study area or within 10 km of the study area. These species, and the habitat features relevant to them, are presented in and Table 6 and Figure 7.

Table 6: Threatened fauna species with the potential to occur in the study area

Scientific name	Common name	BC Act Status	EPBC Act Status	Habitat features present within the study area
<i>Meridolum corneovirens</i>	Cumberland Plain Land Snail	E	-	Leaf litter
<i>Pteropus poliocephalus</i>	Grey-headed Flying Fox	V	V	Foraging habitat
<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	V	-	Foraging habitat
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V	-	Foraging habitat
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-	Woodland

V = VULNERABLE, E = ENDANGERED, - = NOT LISTED.

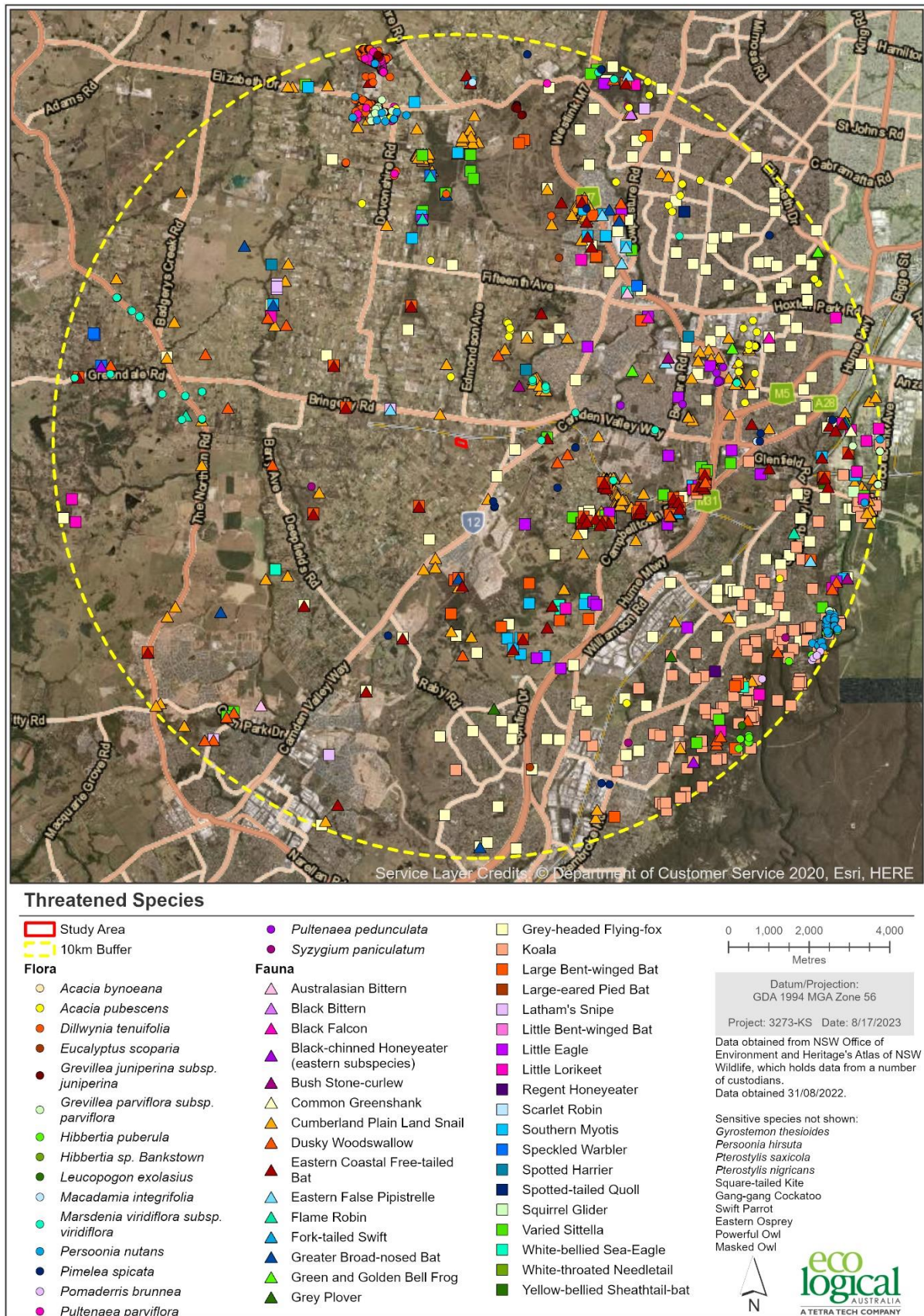


Figure 7: Threatened flora and fauna species identified within 10 km of the study area (NSW BioNet 2022)

4. Conclusion and Recommendations

It is noted that the entire study area is biodiversity certified. Therefore, any future development proceeding as a result of this Planning Proposal, which requires consent (Under Part 4 and 5 of the EP&A Act) is automatically 'development that is not likely to significantly affect threatened species'. Biodiversity certification removes the need to address threatened species considerations and the test of significance (s.7.3 of the BC Act), including the preparation of Species Impact Statements (SIS) for Part 5 activities or triggering the Biodiversity Offset Scheme (BOS) for Part 4 developments. Biodiversity certification under the Sydney Region Growth Centres program also removes the need for assessment of MNES under the EPBC Act.

Nonetheless, the study area contains areas with high biodiversity value, in particularly, patches of remnant Cumberland Plain Woodland, a listed critically endangered ecological community under the BC Act. PCT 3320 within the study area does not meet the criteria for listing under the EPBC Act. Any future development should therefore seek to retain native vegetation in open space areas, where feasible. This will also ensure consistency with the discussed strategic plans by:

- Delivering Green Grid connections
- Increasing urban tree canopy cover
- Protecting and enhancing bushland and biodiversity
- Enhancing landscape connectivity

5. References

Department of Planning and Environment (DPE) 2022a. *The Cumberland Plan Conservation Plan – A Conservation Plan for Western Sydney to 2056.*

Department of Planning and Environment (DPE) 2022b. *State Vegetation Type Map.* NSW Government.

Government Architect NSW, 2020. *Greener Places – An Urban Green Infrastructure Design Framework for New South Wales.*

Government Architects NSW, 2020. *Draft Greener Places Design Guide.*

Greater Sydney Commission (GSC) 2018a. *The Greater Sydney Region Plan, A Metropolis of Three Cities.*

Greater Sydney Commission (GSC) 2018b. *Our Greater Sydney 2056 – Western Sydney District Plan.*

Appendix A EPBC Act Condition Thresholds for Cumberland Plain Woodland

Flowchart of key diagnostic features and condition thresholds to identify the Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest ecological community

