28ºS ENVIRONMENTAL

Double Jump Road Residential Estate Development

Preliminary Documentation Report

EPBC Referral 2024-09825

Volume 3.3

Appendix 6

29 July 2026

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ECOLOGICAL ASSESSMENT

36-40, 42, 44, 48, 50, 52 & 56 DOUBLE JUMP ROAD AND 26 PROSPECT CRESCENT, VICTORIA POINT

Prepared for
Sutgold Pty Ltd

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BAAM
ECOLOGICAL CONSULTANTS

Specialised ecological knowledge that reduces your risk

Document Control Sheet

File Number: 0396-001/05

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Client: Sutgold Pty Ltd

Project Title: Ecological Assessment - 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent, Victoria Point

Project Author/s: Adrian Caneris

Project Summary: An ecological assessment of the proposed residential development located at 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent, Victoria Point, within the Victoria Point Structure Plan Area.

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Purpose of Report

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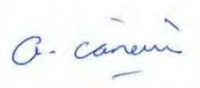
Date: 04/10/2018



Managing Director

Ecological Assessment – 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent, Victoria Point

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Table of Abbreviations

BAAM	Biodiversity Assessment and Management Pty Ltd
DAMS	Development Assessment Mapping System
DES	Queensland Department of Environment and Science (formerly DEHP)
DILGP	Department of Infrastructure, Local Government and Planning
DNRM	Queensland Department of Natural Resources and Mines
DOEE	Department of Environment and Energy
DotE	Commonwealth Department of the Environment (now Department of Environment and Energy)
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EVNT	Species listed as endangered, vulnerable or near threatened under the EPBC Act or NC Act
KSPRP	*South East Queensland Koala Conservation State Planning Regulatory Provisions*
MNES	Matters of National Environmental Significance
MSES	Matters of State Environmental Significance
MLES	Matters of Local Environmental Significance
NC Act	Queensland *Nature Conservation Act 1992*
RE	Regional Ecosystem
RCC	Redland City Council
TEC	Threatened Ecological Community
VM Act	Queensland *Vegetation Management Act 1999*

1.0 INTRODUCTION

1.1 BACKGROUND AND STUDY AREA DESCRIPTION

Biodiversity Assessment and Management (BAAM) has prepared this ecological assessment to inform a development application for the proposed residential development located at 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent, Victoria Point(the 'study area'),, within the proposed Victoria Point Structure Plan Area (VPSPA) as shown on **Figure 1.1**.

This ecological assessment addresses the relevant overlays and associated codes of the Redland City Plan 2018 Version 1 ('City Plan') and should be read in conjunction with the Ecological Matters Report for the Victoria Point Structure Plan Area (BAAM 2018).

The study area is zoned as 'Emerging Community' under the City Plan.

Located between Double Jump Road & Bunker Road, these lots are located on the fringe of urban development to the north, and rural properties to the east, west and south (**Figure 1.2**).

The subject lots are identified as:

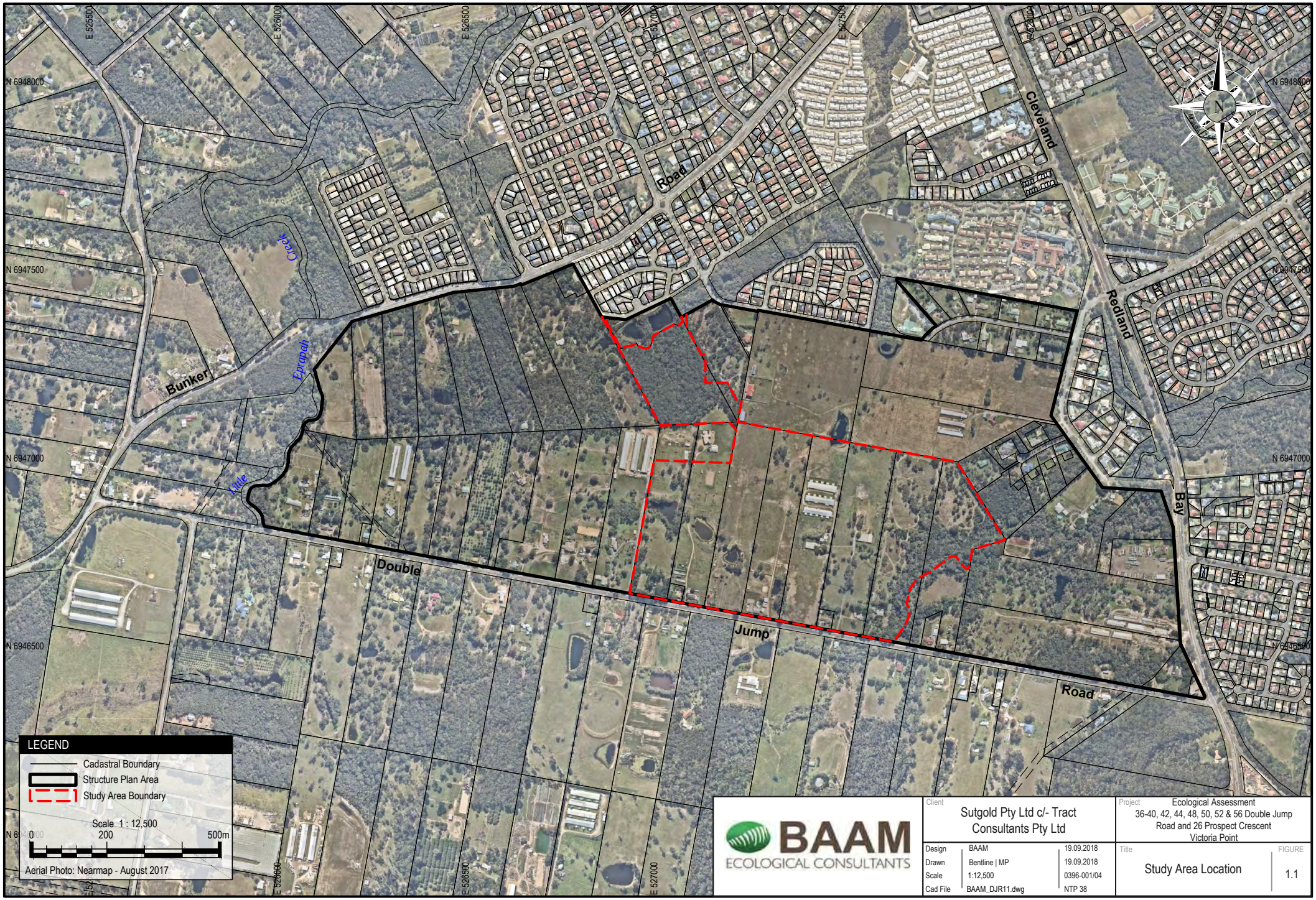
- Lot 801 on SP261302, 26 Prospect Crescent;
- Lot 5 on SP293881, 52, 54 & 58 Double Jump Rd;
- Lot 2 on RP86773, 50 Double Jump Rd;
- Lot 1 on RP86773, 48 Double Jump Rd;
- Lot 3 on RP148004, 44 Double Jump Rd;
- Lot 7 on RP57455, 42 Double Jump Rd;
- Lot 2 on RP169475, 36-40 Double Jump Rd;
- Lot 6 on SP145377, 27 Brendan Way; and
- Lot 2 on RP169475, 36-40 Double Jump Road.

These rural properties include residential dwellings and infrastructure such as farm sheds, dams, chicken sheds and horse training facilities. They are all subject to prior disturbance and predominantly supporting open pastoral areas with some native vegetation, particularly around dams, fencelines and the tributary of Moogurrapum Creek that forms the eastern study area boundary. Lot 801 in the north is around 5.5 ha in size and supports regrowth woodland.

1.2 STUDY AIMS

The aims of this assessment are to:

- Describe the current local, state and federal environmental ordinances that apply to the study area;
- Describe existing ecological values of the study area, highlighting any significant values that present opportunities and/or constraints for future land use options; and
- Provide recommendations regarding the management of ecological values.



BAAM ECOLOGICAL CONSULTANTS

Client	Sutgold Pty Ltd c/- Tract Consultants Pty Ltd	
Project	Ecological Assessment 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent Victoria Point	
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Title	Study Area Location	FIGURE 1.1

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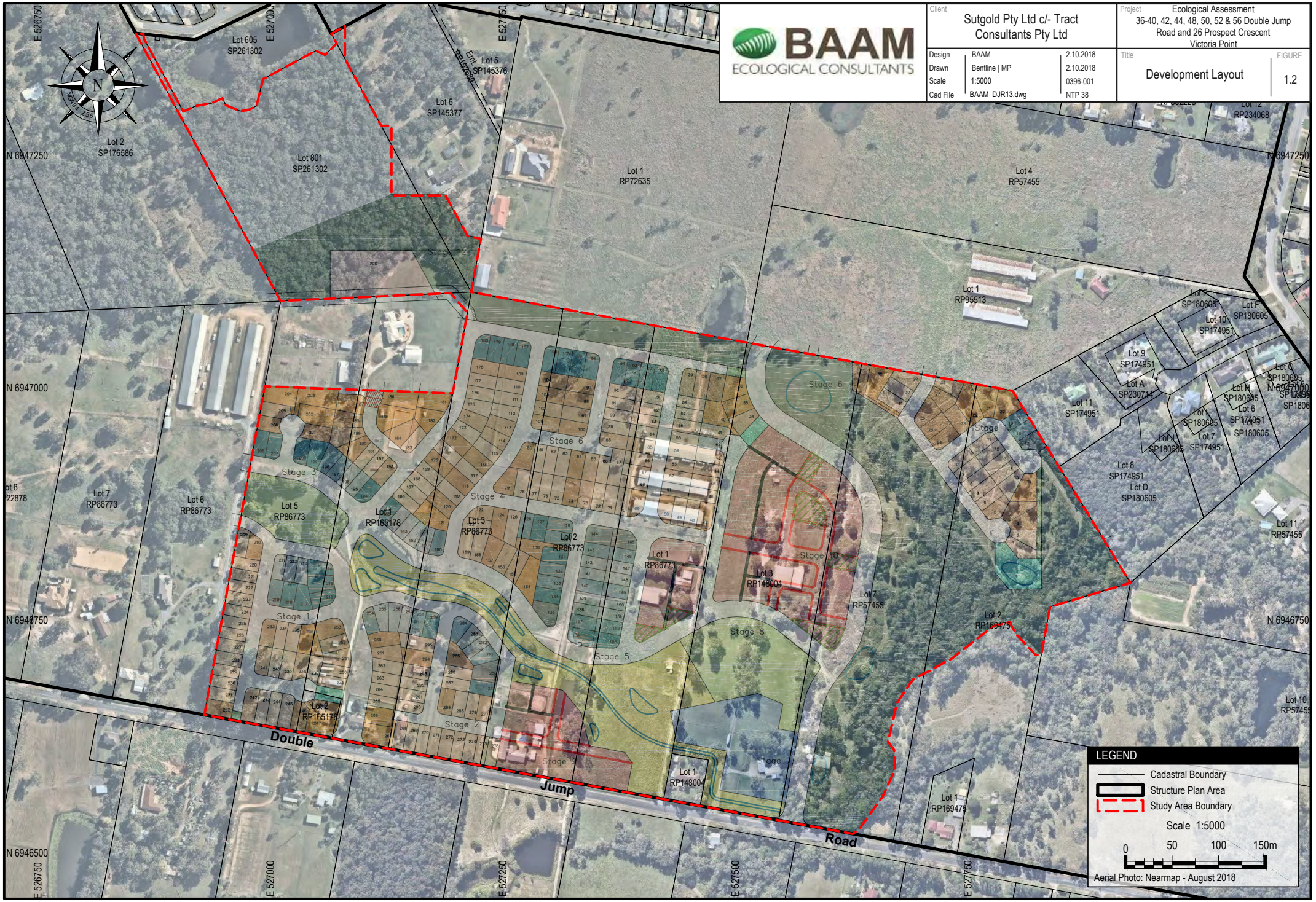

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2.0 METHODOLOGY

2.1 DESKTOP REVIEW

The desktop review comprised a search of online databases and mapping and an analysis of information for conservation significant vegetation communities, flora and fauna species in the local area. For the purposes of this report, conservation significant vegetation communities and flora and fauna species include:

- Ecological communities listed as threatened ecological communities under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- Flora and fauna species listed under the EPBC Act as critically endangered, endangered, vulnerable or migratory;
- Flora and fauna species listed as endangered, vulnerable or near threatened (EVNT) or Special Least Concern under the Queensland *Nature Conservation Act 1992* (NC Act);
- Critical habitat listed under the EPBC Act for which a register is maintained; and
- Regulated Vegetation and Essential Habitat under the Queensland *Vegetation Management Act 1999* (VM Act).

Reviewed information included:

- Commonwealth EPBC Protected Matters Search Tool (**Appendix 1**) results;
- Queensland Wildlife Online database (**Appendix 2**);
- State mapping of regulated vegetation, essential habitat, wetlands and Koala habitat (**Appendix3**); and
- Redland City Council environmental overlay mapping (**Appendix 4**).
- Various preliminary design layouts
- The 28 South Ecological reports and documentation for the proposed Ausbuild development immediately north of the study area.

2.2 FIELD ASSESSMENT

The information presented in this report is informed through the desktop research and site investigations undertaken by Adrian Caneris, Dr. Jo Chambers and Shelley Trevaskis between September 2015 and July 2018 across the VPSPA which included numerous and repeated site visits (BAAM 2018).

The focus of the site investigations was to assess the overall ecological values and to ground truth the State-mapped Koala habitats within the study area.

All work was performed in accordance with BAAM's Scientific Purposes Permit and Animal Ethics Approval.

A targeted fauna survey was conducted by Adrian Caneris across the VPSA over five days and four nights across between 26 February and 2 March. This survey included assessment of the subject lots and surrounds and trapping within Lot 801. The fauna survey involved four nights of small mammal trapping, two nights of spotlighting and frog surveys and four early morning bird surveys of 1.5 hrs duration per day. Birds species present were also recorded during all other aspects of site assessment. The fauna survey techniques employed are described in **Table 2.1**.

A targeted fauna survey was conducted by Adrian Caneris over five days and four nights across the VPSPA, which included assessemnt of the subject lots and surrounds and trapping within Lot 801, between February 26 and March 2, 2018 which. The fauna survey involved four nights small

mammal trapping, two nights spotlighting and frog surveys and four early morning bird surveys of 1.5 hrs duration per day. Birds were also censured during all other aspects of site visitation. Details of methodolgies employed are provided in **Table 2.1**.

Table 2.1. Fauna survey techniques.

Technique	Purpose	Description
Diurnal Searches (general)	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list.	This involves intensive investigation of ground layer (under logs, rocks and leaf litter), low vegetation (under bark and in tree stumps) for amphibians, reptiles, bats and animal signs, e.g. scats, owl pellets, remains and tracks.
Spotlighting (general)	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list.	Undertaken on foot through representative habitats, at a leisurely pace using hand-held spotlights and/or head torches. This method samples nocturnal mammals (flying, arboreal and terrestrial), birds (owls and nightjars), reptiles (geckos) and frogs.
Bird Surveys (general)	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list.	Bird species are recorded via their call, or visual observation. Surveys were conducted from dawn to early morning, dusk to early evening and during the night for nocturnal species.
Elliot Traps	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list.	25 baited Elliot 'A' and 2 baited Elliot 'B' traps were laid on ground transects 10 or more metres apart. Trap placement is influenced by vegetation diversity, the size and shape of habitat patches and by naturally occurring features such as logs, rock outcrops, tree bases and clumping vegetation.
Targeted Feed Tree Search	To determine the extent and distribution of utilisation of an area by Glossy Black-Cockatoos and Koala.	This involves intensive investigation of the site for isolated specimens and groves of feed trees for Glossy Black Cockatoo and/or Koala.
Targeted Ground Search	To determine the presence of significant species, including cryptic or rare species.	This involves intensive investigation of ground layer (under logs, rocks and leaf litter), low vegetation (under bark and in tree stumps), and other habitat features.
Targeted Spotlighting	To determine the presence of significant species, including cryptic or rare species such as Greater Glider.	Undertaken on foot through representative habitats, at a leisurely pace using hand-held spotlights and/or head torches to search for target fauna. May include intermittent nocturnal voice playback to elicit a response from target species.
Electronic Bat Detectors	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list, as well as the presence of significant microbat species.	Survey involve walking a predetermined transect, stopping to record calls detected, and remote/stationary detection at specific locations such as stag trees.
Opportunistic records	To supplement the systematic survey results and provide a more comprehensive listing of fauna present.	Covers all other fauna observations outside of systematic and targeted survey methodologies.

To inform potential Koala offset requirements, non-juvenile Koala habitat trees observed within the proposed development footprint has been undertaken.

A non-juvenile Koala habitat tree (NJKHT) is defined under the *Planning Regulation 2017* as:

- a food tree of the *Corymbia, Melaleuca*, *Lophostemon* or *Eucalyptus* genera, or a shelter tree species such as *Angophora;* and
- a height of more than four metres; or has a trunk circumference of >31.5 cm at 1.3 m above the ground.

Specific targeted assessments of all lots to inform site design and identification of Koala habitat were undertaken by Adrian Caneris, Lizzy Buckby and Jonny Pickvance between 10-14 August. The surveys included capture of GPS locations of Koala habitats to inform site design as well as targeted searches for Koala and Koala evidence. Weeds and other habitat value considerations were also observed, and incidental fauna records were captured. A survey of lot 801 was undertaken by Adrian Caneris and Lizzy Buckby on 14 September 2018 to plot NJKHT.

3.0 RESULTS

3.1 GENERAL ECOLOGICAL VALUES

3.1.1 Terrestrial Habitats

The subject lots support a mix of habitat values. There are individual old growth trees, patches of regrowth vegetation and grassy/weedy pastures (**Photos 1 and 2**). The forested portions of the study area are those currently mapped as remnant vegetation and or Koala bushland and are comprised predominantly of Scribbly Gum *Eucalyptus racemosa* woodland with Queensland Blue Gum *Eucalyptus tereticornis* and Broad-leaved Paperbark in the riparian habitats. These areas are retained outside of the development footprint.

There are patches of native vegetation in association with existing dams. These areas contain occasional large trees and regrowth dominated by Broad-leaved and Black wattle *Acacia leiocalyx.*

The vegetated portions of the study area are providing suitable foraging, roosting and breeding resources for avian species. Within the development footprint patches of regrowth vegetation are mostly devoid of native mid and ground storey species and support few values for native fauna.

Koala evidence was recorded from habitats associated with Moogurrapum Creek and Lot 801 in the form of scats.

The hollow-bearing trees within woodland habitats and those occurring as isolated paddock trees provide valuable nesting and refuge habitats for hollow dependant species.

The mown grasses provide food resources for wallabies that would utilise adjacent densely vegetated areas for daytime shelter.

Table 3.1 provides a list of fauna species recorded from the study area and immediate surrounds.

3.1.2 Aquatic Habitats

The Moogurrapum Creek waterway within lot 2 on RP169475 and Lot 7 RP57455 is identified on the State's vegetation management mapping as a watercourse and as a wetland (**Appendix 2**). The same waterway is identified on the City Plan Waterway and Wetlands Overlay.

There is an overland flow path entering the study area in Lot 5 on SP293881 and traversing south east although there are several dams present which limit the hydrological flows. These dams provide aquatic habitats of varying degrees, from large permanent deep impoundage areas through to relatively small shallow water storages that provide permanent water sources for native species (**Photo 3**).

Assessment of the dams has determined that the vertebrate aquatic species are dominated by the introduced Mosquito fish *Gambusia holbrooki.* Eastern Water dragon *Intellagama lesueurii* was also recorded in association with the dams, and there is high potential for native turtles and native eels to be present within the larger dams.

Photo 1. Lot 7 RP 57455 showing open pastoral areas on the edge of habitats to be retained within the open space network.

Photo 2. Lot 3RP1480004 Typical view of the mixed habitats of open pastoral areas and scattered vegetation.

Photo 3. Lot 5 RP 293881 showing one of the dams providing permanent water and aquatic habitats.

Table 3.1. Recorded fauna from the Study Area and immediate surrounds*.

Scientific Name	Common Name	Scientific Name	Common Name
Amphibians			
Limnodynastes terraereginae	Scarlet-sided Pobblebonk	*Litoria rubella*	Ruddy Treefrog
Limnodynastes peronii	Striped Marshfrog	*Litoria fallax*	Eastern Sedgefrog
Crinia parinsignifera	Beeping Froglet	*Rhinella marina**	Cane Toad*
Litoria caerulea	Common Green Treefrog		
Reptiles			
Intellagama lesueurii	Eastern Water Dragon	*Cryptoblepharus pulcher*	Elegant Snake-eyed Skink
Dendrelaphis punctulatus	Green Tree Snake	*Lygisaurus foliorum*	Tree-base Litter-skink
*Hemidactylus frenatus**	House Gecko	*Tiliqua scincoides*	Eastern Blue-tongue Lizard
Ctenotus taeniolatus	Copper-tailed Skink	*Pogona barbata*	Bearded Dragon
Calyptotis scutirostrum	Scute-snouted Calyptotis	*Carlia vivax*	Tussock Rainbow-Skink
Lampropholis delicata	Dark-flecked Garden Sunskink		
Birds			
Gerygone olivacea	White-throated Gerygone	*Taeniopygia bichenovii*	Double-barred Finch
Sericornis frontalis	White-browed Scrubwren	*Todiramphus sanctus*	Sacred Kingfisher
Haliastur sphenurus	Whistling Kite	*Dacelo novaeguineae*	Laughing Kookaburra
Aviceda subcristata	Pacific Baza	*Hirundo neoxena*	Welcome Swallow
Anas superciliosa	Pacific Black Duck	*Petrochelidon ariel*	Fairy Martin
Chenonetta jubata	Australian Wood Duck	*Malurus lamberti*	Variegated Fairy-Wren
Egretta novaehollandiae	White-faced Heron	*Malurus melanocephalus*	Red-backed Fairy-Wren
Bibulous ibis	Cattle Egret	*Alectura lathami*	Australian Brush-turkey
Egretta garzetta	Little Egret	*Lichmera indistincta*	Brown Honeyeater
Cracticus tibicen	Australian Magpie	*Philemon corniculatus*	Noisy Friarbird
Cracticus torquatus	Grey Butcherbird	*Manorina melanocephala*	Noisy Miner
Cracticus nigrogularis	Pied Butcherbird	*Myzomela sanguinolenta*	Scarlet Honeyeater
Cacatua galerita	Sulphur-crested Cockatoo	*Entomyzon cyanotis*	Blue-faced Honeyeater
Eolophus roseicapillus	Galah	*Caligavis chrysops*	Yellow-faced Honeyeater
Coracina novaehollandiae	Black-faced Cuckoo-shrike	*Meliphaga lewinii*	Lewin's Honeyeater
Vanellus miles	Masked Lapwing	*Merops ornatus*	Rainbow Bee-eater
Geopelia humeralis	Bar-shouldered Dove	*Grallina cyanoleuca*	Magpie-lark
*Streptopelia chinensis**	Spotted Dove*	*Dicaeum hirundinaceum*	Mistletoe Bird
*Columba livia**	Rock Dove*	*Sphecotheres vieilloti*	Australasian Figbird
Ocyphaps lophotes	Crested Pigeon	*Pachycephala rufiventris*	Rufous Whistler
Eurystomus orientalis	Dollarbird	*Colluricincla harmonica*	Grey Shrike-thrush
Corvus orru	Torresian Crow	*Pardalotus striatus*	Striated Pardalote
Centropus phasianinus	Pheasant Coucal	*Eopsaltria australis*	Eastern Yellow Robin
Scythrops novaehollandiae	Channel-billed Cuckoo	*Podargus strigoides*	Tawny Frogmouth
Dicrurus bracteatus	Spangled Drongo	*Platycercus adscitus*	Pale-headed Rosella
Trichoglossus haematodus moluccanus	Rainbow Lorikeet	*Trichoglossus chlorolepidotus*	Scaly-breasted Lorikeet
Porphyrio melanotus	Purple Swamphen	*Acridotheres tristis**	Common Myna*
Rhipidura leucophrys	Willie Wagtail	*Threskiornis molucca*	Australian White Ibis
Mammals			
*Vulpes vulpes**	Red Fox*	*Rattus rattus**	Black Rat*
*Lepus europaeus**	European Brown Hare*	*Isoodon macrourus*	Northern Brown Bandicoot
Macropus rufogriseus	Red-necked Wallaby	*Trichosurus vulpecula*	Common Brushtail Possum
Tadarida australis	White-striped Freetail Bat	*Phascolarctos cinereus*	Koala
*Mus musculus**	House Mouse*		

*A more comprehensive listing of fauna within the locality can be found in BAAM 2017.

3.1.3 Existing Corridors and Connectivity

The habitats associated with Moogurrapum Creek provide important ecological linkages within the local landscape. This riparian area holds the greatest value as fauna habitat and supports several species associated with the more complex habitat structure that were not recorded within in the more open, rural lands.

Woodland habitat within Lot 801 forms part of a well-vegetated corridor (40-100 m in width) associated with a drainage line and series of small dams between the Victoria Point Shopping Centre and Little Eprapah Creek which forms the western boundary of the Victoria Point Structure Plan Area. Currently there is no vegetated connection between this corridor and the habitats associated with Moogurrapum Creek.

Opportunities for fauna movement within the remainder of the study area are limited due to existing rural uses and prior vegetation clearing. Scattered trees and pastures are being utilised by birds, though the species present are comprised mostly of larger, gregarious species that thrive in disturbed bushland, parks gardens and are known to move through urbanised landscapes.

Native ground-mammal species are few, with the more common occurring species being Red-necked Wallaby and Northern Brown Bandicoot which are well-suited to the current conditions. No Koala evidence was recorded onsite although this species has been recorded immediately north and west of the site and is known to move relatively freely between isolated trees and woodland fragments, provided heavy weed infestations are not present and obstructing movement opportunities.

The study area includes components of the proposed VPSP Wildlife Corridor System described in BAAM (2017).

3.2 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The results from the EPBC Protected Matters Search completed for the study area and a 5km buffer is provided in **Appendix 1.** The relevant matters of national environmental significance are discussed in **Sections 3.2.1-3.2.4**.

Any actions that are likely to have a significant impact on a Matter of National Environmental Significance (MNES) are subject to assessment under the Commonwealth's EPBC Act approval process.

The study area development does not warrant a referral under the EPBC. Although no specific triggers for a referral have been identified, a referral of the overall structure plan would be prudent, due to the size of the development area and to provide project certainty for the separate proponents across the applicable lands.

The following comments are specific in respect to the study area and proposed development layout.

3.2.1 Listed Threatened Ecological Communities

Initial desktop assessment found three EPBC Act listed Threatened Ecological Communities (TECs) could potentially occur onsite: Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland (Endangered), Lowland Rainforest of Subtropical Australia (Critically Endangered) and Subtropical and Temperate Coastal Saltmarsh (Vulnerable) (**Appendix 2**).

No vegetation communities with species indicative of the three TECs are identified under the State vegetation mapping (refer to **Section 3.5.1**) and these TECs do not occur within, or in close proximity to, the study area.

3.2.2 Listed Threatened Terrestrial Species

No EPBC Act listed flora species were recorded during the survey and, based on the habitat present, none are considered likely to occur.

Appendix 4 provides an assessment of likelihood of occurrence of listed flora species.

Based on a consideration of likelihood of occurrence and knowledge of the study area, two EPBC Act listed threatened fauna species are known to occur within the site: Koala *Phascolarctos cinereus* (EPBC Act and Queensland *Nature Conservation Act 1992* [NC Act]: Vulnerable) and Grey-headed Flying-fox *Pteropus poliocephalus* (EPBC Act: Vulnerable).

Under the EPBC Act, an action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of an important population of a species;
- reduce the area of occupancy of an important population;
- fragment an existing important population into two or more populations;
- adversely affect habitat critical to the survival of a species;
- disrupt the breeding cycle of an important population;
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;
- result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat;
- introduce disease that may cause the species to decline; or
- Interfere substantially with the recovery of the species (DotE 2013).

Koala

Koala is known to occur within the local landscape and there are many historical records. While no individual koalas were sighted during field assessments, Koala scats were recorded within the study area.

An assessment of the study areas importance as Koala habitat has been undertaken in accordance with the *EPBC Act referral guidelines for the vulnerable Koala* (DotE 2014) (**Table 3.2**).Based on the DoE criteria, the study area is not considered to contain habitat critical to the survival of the Koala (i.e. total score ≥5).

The study area does not contain habitat critical to the survival of the Koala as defined under the EPBC Act, the development plan does not affect the retention, protection and enhancement of the correctly mapped high value bushland which retains the higher Koala habitat values as recognised by the State of Queensland, and all Koala trees removed will be offset at a ratio of 3:1. As such, it is considered that the proposed actions will have no significant impacts to an important Koala population or to critical habitats and a referral to the Commonwealth would not be required.

Within the broader Structure Plan area, tracts and patches of existing Koala habitat are planned to be incorporated into the wildlife corridor network to facilitate and improve habitat connectivity. The corridors are proposed to be supplemented with Koala tree offset plantings.

Table 3.2. Koala habitat assessment tool (DoEE 2014) applied to the Structure Plan Area.

Attribute	Score	Assessment	
Koala occurrence	**2**	Desktop	The wildlife online database records 350 Koala sightings within a 2 km radius of the study area, since 1980. There are three records from Atlas of Living Australia within 2km of the study area in the past 5 years.
		On-ground	Koala evidence (scats) was observed during the site survey.
Vegetation composition	**2**	Desktop	The study area is not mapped as supporting remnant vegetation though there is remnant vegetation nearby. The forested habitats are suitable for Koala.
		On-ground	The study area supports two or more known Koala food tree species in either isolated stands of trees or in bushland blocks.
Habitat connectivity	**0**	The study area contains a mixture of rural/residential properties and agricultural lands that are bordered on all sides by relatively major roadways. Safe Koala	

Attribute	Score	Assessment	
		movements to large contiguous patches of bushland to the north and south west are severely compromised by the presence of barriers (double jump road, Bunker Road, Cleveland Redland bay road and Mt Cotton road as well as a the presence of domestic and working dogs. The site does not have connectivity to or as part of part of a contiguous landscape ≥ 300 ha.	
Key existing threats	**0**	Desktop	There have been four Koala road hits within 1 km of the study area within the past five years, a further three hits along nearby Double Jump Road and one dog attack within 1 km within the past 10 years recorded by DEHP (Daisy Hill Koala Hospital).
		On-ground	Due to the increasing residential developments within the local area, it is considered that the threat of vehicle strike and dog attacks would be relatively high in this location.
Recovery value*	**0**	Due to the small size of the study area and tenuous connectivity, it is considered that the study area does not support the interim recovery objectives.	
Total	**4**	Decision: The habitat is not considered critical to the survival of the Koala.	

* Data from DEHP Daisy Hill Koala hospital.

** Interim recovery objective (s): Protect and conserve large, connected areas of koala habitat, particularly large, connected areas that support koalas that are – genetically diverse/distinct, or – free of disease or have a very low incidence of disease; or – breeding (i.e. presence of back young or juveniles).

Grey-headed Flying-fox

While no flying-fox camps were found to occur within or immediately adjoining the study area, Grey-headed Flying-fox is likely to occur as a regular visitor to flowering trees. Within the broader Structure Plan area, tracts and patches of existing habitat are planned to be incorporated into the wildlife corridor network. With the addition of Koala tree offset plantings in wildlife corridors, and streetscape and garden plantings, the proposed development will not remove a significant amount of feeding habitat for flying-foxes or discourage flying-foxes from foraging in the location.

3.2.3 Listed Migratory Species

A desktop assessment from the EPBC Act Online Protected Matters Search Tool (**Appendix 1**) identified a number of migratory EPBC-listed migratory bird species as having potential to occur within habitats on or adjacent to the study area.

It should be noted that while the EPBC Act Online Protected Matters Search Tool incorporates species records, it also relies on modelling of suitable habitats and is largely predictive.

Seven migratory bird species have been previously recorded within 5 km of the study area (**Appendix 1**). Whilst the two Plover species *Charadrius leschenaultii* and *Charadrius mongolus* are almost entirely restricted to the coastline inhabiting littoral and estuarine areas, both species occasionally use inland saltpans and brackish swamps. The study area does not support any suitable habitats for these two species. The study area does not support marine habitats for the other five migratory species previously recorded within 5 km of the study area (**Appendix 1**) and these species should not be considered relevant to the proposed development.

3.2.4 Wetlands of International Importance

The results from the EPBC Protected Matters Search completed for the study area indicate that the study area is within 10 km of the Moreton Bay Ramsar site.

Erosion and Sediment control and stormwater runoff will need to be managed appropriately to ensure no significant impacts on the ecological function of Moreton Bay occur as a result of the construction or operation of the proposed residential development.

3.2.5 Weeds of National Significance

Weeds of national significance (WONS) were recorded within or immediately adjoining the study area, but mainly within vegetation associated with Moogurrapum Creek. WONS recorded include:

- Asparagus fern *Asparagus aethiopicus;*
- *Cats Claw Creeper Dolichandra unguis-cati;*
- Fire Weed *Senecio madagascariensis*
- Madeira Vine *Anredera cordifolia;* and
- Lantana *Lantana camara.*

Appropriate management of these species by the landholder is legally required.

3.3 MATTERS OF STATE ENVIRONMENTAL SIGNIFICANCE

There are Matters of State Environmental Significance (MSES) identified within the study area. The State Planning Policy (SPP) defines the Queensland Government's policies for matters of state interest in land use planning and development. The SPP specifies that MSES are valued and protected, and the health and resilience of biodiversity is maintained or enhanced to support ecological integrity.

3.3.1 Regulated Vegetation/Essential Habitat

Regulated Vegetation and Essential Habitat are mapped in association with Moogurrapum Creek (**Appendix 2**). There is no regulated regrowth shown within the study area, and Property Maps of Assessable Vegetation (PMAVs) certified by DNRME have mapped the remainder of the study area as Category X (non-remnant/non-regrowth).

The proposed development retains the mapped vegetation. As such, there is no applicable purpose or code to be assessed in respect to the Queensland *Vegetation Management Act 1999*.

3.3.2 Threatened Species

In Queensland threatened species are listed as Extinct in the wild, Endangered, Vulnerable or Near Threatened (EVNT) under the *Nature Conservation Act 1992* (NC Act).

Flora

The study area does not occur within a high-risk area on the State's Protected Plants Flora Survey Trigger Map (**Appendix 2**) therefore an application to clear native vegetation will not be required under the NC Act.

The Wildlife online search (**Appendix 1**) for a 3 km radius of the study area did not identify any threatened flora species. A wider search, which was undertaken as part of the structure plan in 2017 returned records of *Marsdenia longiloba, Marsdenia coronata*, *Macadamia integrifolia, Macadamia tetraphylla* and *Corchorus cunninghamii* as having been recorded within 6 km of the study area since 1980. These five species are associated with habitats that do not occur within the study area. Most of these records relate to habitats associated with Mt Cotton and surrounds and have little to no relevance with the subject site.

Appendix 4 provides an assessment of the likelihood of occurrence of EVNT flora in the study area.

Based on the field assessments; prior disturbances, extant habitats and habitat condition, it is concluded that no EVNT flora species are present, or are likely to be present, within the study area.

Fauna

A search of the Department of Environment and Science (DES) Wildlife Online database provides a list of EVNT species that have previously been recorded as occurring within a 3 km radius of the study area (**Appendix 1**). These are Tusked *Frog Adelotus* brevis and Koala *Phascolarctos cinereus*. Of these, only evidence of Koala was recorded during the field survey.

There are some habitat values for Tusked Frog *Adelotus brevis*, and particular within the Moogurrapum Creek environs which hold suitable breeding habitats. Although not recorded during site assessment, this species is considered as having potential to occur within the waterway and/or dams/pondage areas. However, due the mostly open pastoral habitats, the study area should not be viewed as supporting important habitats for this species outside of Moogurrapum Creek.

While not listed within the database search results there is some, although low, potential for Glossy Black-Cockatoo *Calyptorhynchus lathami* to feed within Lot 801 where there are food trees for the species present (*Allocasuarina littoralis*). No feeding signs were observed during the field assessments.

A list of all significant fauna within the local landscape and their potential to occur is provided as **Appendix 6**.

3.3.3 Wetlands and Waterways

Under the Development Assessment Mapping System (DAMS), administered by the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP), the study area is not identified as holding any Wetlands under the Matters of State Environmental Significance State Planning Policy (**Appendix 3**).

The waterway associated with Moogurrapum Creek has sections identified as ‘Low’ and ‘Moderate’ waterways for waterway barrier works. This identification seeks to ensure any proposed actions do not result in a barrier for fish passage.

As the proposed development is entirely outside of the mapped waterways and no loss of fish passage will occur.

3.3.4 South East Queensland Koala Planning Framework

The DSDMIP DAMS mapping identifies that the study area within a Priority Koala Assessable Development Area (**Appendix 2**). Therefore, any future development will be subject to the provisions of Schedule 11 of the *Planning Regulation 2017* in relation to Koala habitat.

The study area is within the urban footprint under the *South East Queensland Regional Plan 2009 – 2031* and Emerging Community Zone of the City Plan.

The proposed development footprint has been informed by ecological, engineering and economic considerations, with all the land supporting mapped Koala Bushland being maintained. The entire footprint of the proposed development is contained within areas mapped as Medium Value Rehabilitation under the Koala SPRP Habitat Value Mapping.

A maximum of 982 NJKHT from the mapped Medium Value Rehabilitation area are within the development footprint (**Appendix 5**).

Unavoidable clearing of NJKHT in areas mapped as Medium Value Rehabilitation must be offset in accordance with the Queensland *Environmental Offset Policy*.

Under the Queensland *Environmental Offset Policy*, offsets for the removal of Koala habitat within south-east Queensland may be provided as a proponent-driven, land-based offset or a financial settlement offset, or a combination of both.

In terms of proponent-driven offsets, the policy requires that the rehabilitation, establishment and protection of Koala habitat is the only appropriate action to offset Koala habitat within south-east Queensland, based on the following requirements:

- *The offset must establish three new Koala habitat trees for every one 'non-juvenile' tree removed.*
- *Offset plantings must be within the same local government area as the impact site.*
- *The offset must be in an area identified as high value or medium value suitable for rehabilitation habitat. Where these are not available Koala offset sites should be located within low value suitable for rehabilitation habitat or where appropriate, within bushland habitat to enhance the quality of bushland within the local government area.*
- *Koala habitat trees to be established as an offset must be reflective of the species that are endemic to the site and be planted at densities that will produce a mature density reflective of the regional ecosystems present on the site.*

The removal of 982 non-juvenile Koala habitat trees which would require the establishment of 2946 new Koala habitat trees.

Furthermore, where an offset is delivered as a land-based offset, the site must be secured as a legally secured offset area as defined by section 29 of the *Environmental Offsets Act 2014* (other than as Environmental Offset Protection Area).

It is understood the proponent intends to establish the Koala offset requirements within the finalised wildlife corridor network of the VPSPA with the specific location and configuration to be determined when individual RAL applications are completed and offset delivery plans can be accurately completed.

The Koala trees within the development footprint are expected to be offset within the proposed wildlife corridors planned for the VPSPA (BAAM 2018). This will result in an overall increase in Koala habitat and habitat connections within the VPSPA.

Alternatively, a financial settlement option can be taken, calculated using the Queensland Government's web-based Financial Settlement Offset Calculator.

In this case, the removal of 982 NJKHTs would require a financial settlement of $903,440.

There is also an option of combining the offset options and delivery part of the required offset as a proponent-driven offset and the balance as a financial offset.

3.3.5 Animal Breeding Places

Under the NC Act, activities that require tampering with a native animal breeding place must be undertaken in accordance with an approved Species Management Program (SMP).

Active animal breeding places were observed during the field survey, being the use of Hollow bearing trees by Rainbow Lorikeets and Galahs. As the time and season of proposed works commencing is unknown, it will be important that prior to any vegetation clearing being undertaken an ecologist or qualified fauna spotter/catcher should inspect all vegetation immediately prior to clearing, and if any confirmed active breeding places are recorded and need to be removed, an SMP application would need to be submitted to the Department of Environment and Science for approval.

3.3.6 Weeds of State Significance

Weed species listed as restricted, invasive plants under the Queensland *Biosecurity Act 2014* recorded on site include:

- Asparagus Fern *Asparagus aethiopicus;*
- Singapore Daisy *Sphagneticola trilobata*;
- Brazilian Pepper Tree *Schinus terebinthifolius;*
- Camphor Laurel *Cinnamomum camphora;*
- Chinese Celtis *Celtis sinensis;* and
- Lantana *Lantana camara*.

These Category 3 restricted invasive plants are species that are already established in Queensland and seriously threaten Queensland's primary industries, natural environment, livestock, human health and/or people's livelihoods.

In accordance with the *Biosecurity Act 2014*, Category 3 restricted matters must not be distributed (i.e. released into the environment) unless the distribution or disposal is authorised in a regulation or under a permit. More generally, landowners are responsible for taking all reasonable and practical steps to minimise the risks associated with invasive plants under their control. Contractors appointed to the project will also need to implement management controls and disposal in accordance with the *Biosecurity Act 2014*.

3.4 MATTERS OF LOCAL ENVIRONMENTAL SIGNIFICANCE

Redland City Council City Plan 2018 provides *Planning Scheme Policy 1 - Environmental Significance* which identifies the relevant values of Environmental Significance which are identified as matters of Local Environmental Significance (MLES).

Of relevance to the study area are the Environmental Significance Overlay (Overlay Map - OM-007) and the Waterway Corridors and Wetlands Overlay (Overlay Map – OM-2013). Both overlays within the VPSPA are provided in Appendix 3.

3.4.1 Environmental Significance Overlay

The stated purpose of the Environmental Significance Overlay Code is to manage development to avoid or minimise and mitigate significant impacts on Matters of National, State and Local environmental significance.

The purpose of the code is achieved through the following overall outcomes:

a) areas of high biodiversity or environmental significance are retained and protected;

b) development maximises the retention of native vegetation and significant habitat features;

c) development minimises the loss of koala habitat trees;

d) impacts on matters of state or local environmental significance are minimised and mitigated;

e) development does not cause substantial fragmentation of habitat areas;

f) opportunities for safe and viable wildlife movement within and between habitat areas are facilitated;

g) landscaping and planting is undertaken in a manner that contributes to the ecological values of the site; and

h) where they occur, significant residual impacts on matters of local environmental significance or another prescribed environmental matter in accordance with section 15(4) of the Environmental Offsets Act 2014, may need to be offset.

Those outcomes relating to matters of National and State environmental significance are addressed in **Sections 3.2 and 3.3** respectively. The specific benchmarks for assessable development within the Environmental Significance Overlay Code are addressed in **Table 3.4.1.** Code responses provided in respect to water quality have been provided by Water Technology Pty Ltd.

Table 3.4.1—Benchmarks for development that is accepted subject to requirements and assessable development

Performance Outcomes	Acceptable Outcomes	Response
For development that is accepted subject to requirements		
PO1 Development does not result in a significant reduction in the level or condition of biodiversity and ecological functions and processes in the locality.	**AO1.1** Compensatory planting is undertaken on-site that is equal in area to the area of the vegetation cleared.	N/A – the application is assessable development.
For assessable development		
Values to be protected		
PO2 Development does not result in a significant reduction in the level or condition of biodiversity and ecological functions and processes in the locality.	No acceptable outcome is nominated.	The habitats mapped as MLES are primarily Koala habitats and remnant vegetation associated with Moogurrapum Creek. There will be a loss of Koala habitat trees within the urbanised portion of study area. Any non-juvenile Koala habitat trees removed are required to be offset at the rate of 3:1 in accordance with the Environmental Offset Policy (the same ratio as for MLES)to provide a net gain in Koala habitat within the local area. Due to the retention of all the bushland habitats, provision of vegetated linkages between these areas and the offsetting of all koala habitat trees removed there will be no significant reduction in the level or condition of biodiversity and ecological functions and processes in the locality.
PO3 Development does not cause substantial fragmentation of habitat areas.	No acceptable outcome is nominated.	No substantial fragmentation is proposed. The provision of the designated linkages will result in an overall increase in vegetated habitat connections.
PO4 Connections between habitat areas are retained, so that movement of key species and normal gene flow between populations is not inhibited or made less safe. Connections may include both continuous corridors and “stepping stone” patches and refuges.	No acceptable outcome is nominated.	Connections between existing core habitats are planned that provide suitable fauna movement opportunities as part of the proposed VPSPA Wildlife Corridor System (BAAM 2017). There is a minor reduction in the size of the secondary corridor (3 m reduction to provide an access driveway to the proposed allotment on lot 801) at the south eastern corner of Lot 801. Although a small decrease in the 60m width is proposed, this is a very narrow intrusion and is adjoined by a wider portion of the corridor. This minor reduction in size will not form a barrier to fauna movement and is not viewed as compromising the overall wildlife movement network.

Performance Outcomes	Acceptable Outcomes	Response
Minimising and mitigating impacts		
PO5 Edge effects on retained habitat areas are minimised by providing the smallest possible perimeter to area ratio.	No acceptable outcome is nominated.	The retained bushland habitat comprises relatively large areas in the north (Lot 801) and east (Moogurrapum Creek) of the proposed development area. The existing perimeter to area ratio of these areas is will not be substantially altered as a result of the development. The proposed corridors will be exposed to edge effects though these will be at a level lower than any existing movement option. Roadways and associated verges provide additional buffering.
PO6 The design, scale and intensity of development minimises impacts on retained habitat.	No acceptable outcome is nominated.	The proposed layout retains all the mapped Koala bushland and Moogurrapum Creek riparian habitats. The scale and intensity of development has been determined in consideration of other design constraints and the overall structure plan to result in an effective land use design for the emerging community zone.
PO7 Retained habitat is protected to ensure its on- going health and resilience, and to avoid degradation as a result of edge effects.	No acceptable outcome is nominated.	It is understood that the open space and associated habitats are to be dedicated to RCC for ongoing protection. Corridors will contain Koala offset plantings which require protection under the Qld *Environmental Offsets Act 2014*.
PO8 Barriers restricting the movement and dispersal of wildlife are removed, except where they are necessary for the safety of people or animals.	No acceptable outcome is nominated. Editor's note—Guidance on fencing design, fauna movement structure and the like is provided in Planning Scheme Policy 1 – Environmental significance.	Site design has been developed to minimise road crossings within the proposed habitat linkages. The proposed development provides a design that does not result in any unnecessary severing of proposed habitat linkages designed for the VPSPA. There are dedicated fauna crossing facilities to be provided where corridors intersect with roadways.
PO9 Development does not result in the introduction of pest species (plant or animal), that pose a risk to ecological integrity or disturbance to native fauna.	No acceptable outcome is nominated. Editor's note—Weed species are identified in Council's Pest Management Plan 2012 – 2016, Part B.	The weeds present on site and surrounding lands are all common in the local landscape. No new introduction of pest species (plant or animal), are expected or are likely to pose a risk to the areas ecological integrity.
PO10 Development minimises alterations to natural landforms, flow regimes, groundwater recharge and surface water drainage patterns.	No acceptable outcome is nominated.	There are minimal changes expected to the landform or flow regimes. The aesthetic spine will improve ecological flows and result in a more natural watercourse configuration through the removal of existing dams. Drainage has been designed to ultimately result in the outflows entering waterways in the same locations.
PO11 Development minimises potential for disturbance of	No acceptable outcome is nominated.	The layout has minimised potential for disturbance of wildlife as a result of noise, light, vibration or other sources wherever practical

Performance Outcomes	Acceptable Outcomes	Response
wildlife as a result of noise, light, vibration or other source.		within the requirement to have an effective land use design. The layout provides road frontages to retained habitats and corridors to limit disturbances. The impacts of construction and habitation of the proposed residential dwellings will be typical of residential development within an emerging community zone.
PO12 Roads and public access within and adjacent to areas of ecological significance are located and designed to avoid disturbance of ecological values or danger to wildlife.	No acceptable outcome is nominated.	The roadways and public areas are located outside of those areas identified as holding high ecological significance. The VPSPA has been designed to limit road crossings and these have been designed to incorporate fauna crossings where they intersect with proposed corridors.
Corridors and enhancement planting		
PO13 Development contributes to the restoration of waterway or land based ecological corridors, where they would significantly enhance the health and resilience of habitat and wildlife on and near the site.	No acceptable outcome is nominated.	The site design has retained the core habitat values and riparian areas. These will be subjected to a vegetation management and wildlife habitat management to enhance the health and resilience of habitat values present. The proposed development and associated actions will contribute to the restoration of the waterway and proposed wildlife corridors.
PO14 Corridors have sufficient width to maintain viable wildlife or habitat linkages.	**AO14.1** Ecological corridors have a minimum width of 100m.	The proposed development retains and completely avoids the key ecological corridor being Moogurrapum Creek and associated vegetated habitats which are over 100 m wide. The design retains the bushland habitat in the north of the study area (Lot 801) which plays also an important role in the overall viability of wildlife habitat within the development area. The secondary linkages have been designed to provide appropriate width for all fauna known or predicted to occur within the local landscape (BAAM 2017).
PO15 Development incorporates opportunities for revegetation to enhance habitat condition, biodiversity and wildlife movement.	No acceptable outcome is nominated.	There will be provision of offset plantings or financial contributions to provide revegetation to enhance habitat condition, biodiversity and wildlife movement. The proposed corridors will be revegetated. The proposed development will enhance habitat condition, biodiversity values and wildlife movement options and result in an overall increase in connected vegetated Koala habitats.
PO16 Enhancement plantings and landscaping utilise endemic native species which replicate or complement the composition of the habitat it is connected to, unless this would increase bushfire risk.	No acceptable outcome is nominated. Editors note—Guidance to assist applicants is contained within the Queensland Government's Regional Ecosystem Mapping	All revegetation will incorporate appropriate endemic native species to replicate or complement the composition of the habitat values of the landscape. All plantings will be reflective of the species that are endemic to the site and be planted at densities that will produce a mature density reflective of the regional ecosystems which would naturally occur in the location.
PO17	No acceptable	The development is proposed to occur in stages.

Performance Outcomes	Acceptable Outcomes	Response
Where clearing occurs, it is sequenced and undertaken in a manner that provides opportunities for fauna to vacate affected land.	outcome is nominated. Editor's note—It is likely that a wildlife habitat management plan, prepared by an ecologist with suitable experience may be needed to address survival and ongoing access to habitat trees during construction and operation of the development.	Clearing will be conducted in accordance with the Qld Planning Regulation Schedule 11 benchmarks. All clearing will be directed from the outer edges and towards retained habitats to facilitate fauna movement into retained areas. All clearing will be conducted under the guidance of a fauna spotter catcher.
Offsets		
PO18 Where development results in, or is likely to result in, a significant residual impact on matters of local environmental significance, despite all reasonable on-site mitigation measures, the impact will be offset.	**AO18.1** Offsets are provided in accordance with offset arrangements set out in Planning Scheme Policy 1 – Environmental significance.	Due to the offsetting of MSES (Koala habitat) and based on our review of the locally significant species listed in Appendix A of RCC City Plan 2018 Policy 1, there is no potential for any significant residual impacts on the species identified as being locally significant.

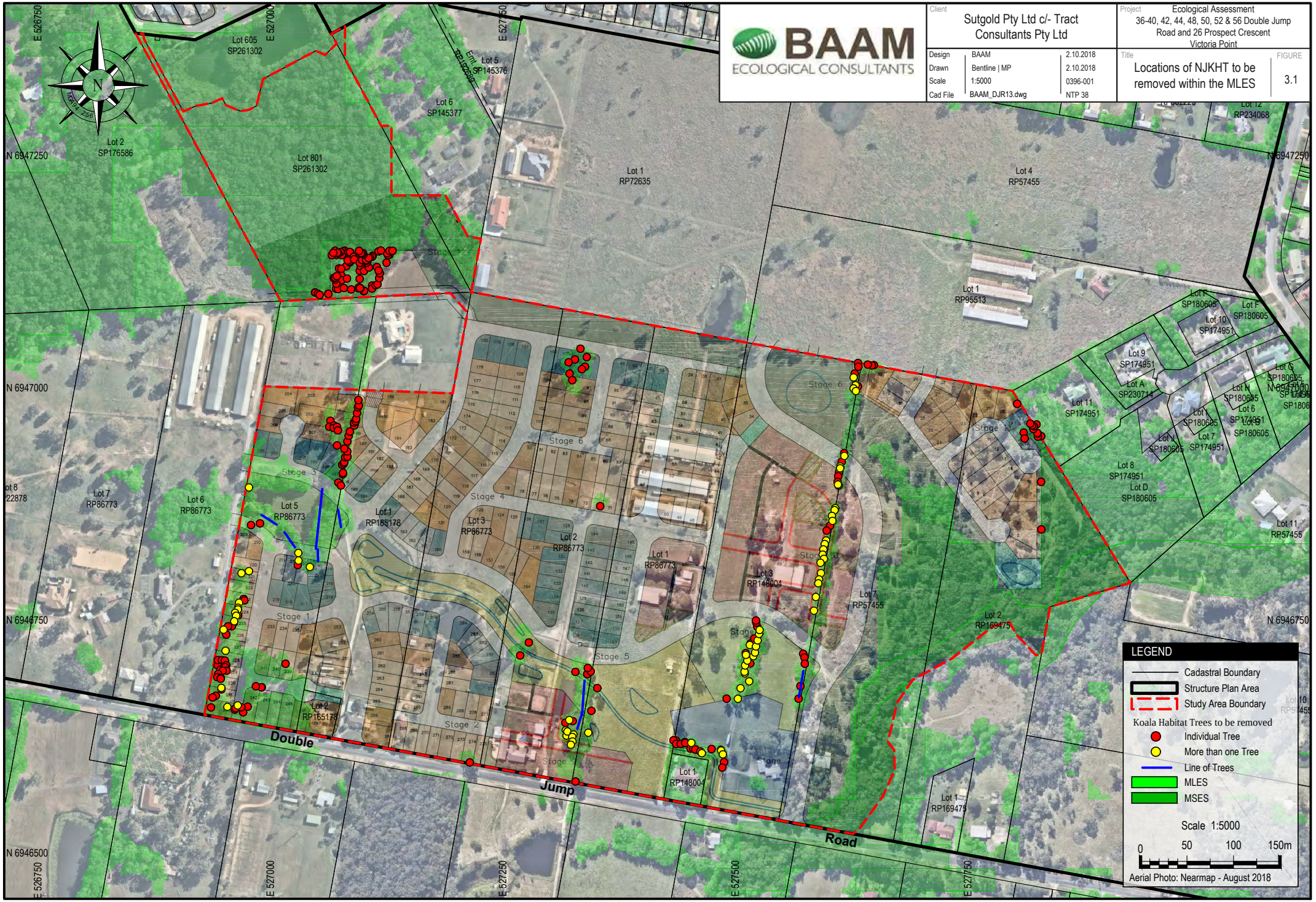
The study area forms a component of the VPSPA Wildlife Corridor System.

The objective of the VPSPA Wildlife Corridor System (BAAM 2017) focuses on providing habitat connectivity to facilitate safe wildlife movements to and from the retained bushland habitats within the VPSP, whilst having regard to where suitable linkages exist in the wider landscape (refer: Figure 3.2, BAAM 2017). The VPSP corridor network interlinks within a broader network as shown on and is primarily located in accordance with the RCC Wildlife Connections Plan. Layout and concepts for development within the VPSP were reviewed in a workshop with RCC officers on 11 September 2018.

The location of the NJKHT within the mapped MLES areas is shown on **Figure 3-1**. There is a total of 611 NJKHT to be removed from the MLES areas. These comprise a mix of individual large hollow bearing trees, patches of mixed regrowth eucalyptus species and numerous Broad-leaved Paperback trees around existing dams. As noted in City Plan Policy 1, s1.6.1 areas mapped as MLES in the overlay may be found to have the attributes of MSES and these values should be treated as MSES. Vegetation within the mapped MLES is dominated by NJKHT and therefore will be offset as MSES as required by the *Planning Regulation 2017*.

In respect to overall MLES the state requirement to offset all NJKHT removed ensures that the Koala trees that occur within the MLES mapping in the study area are to be replaced at a ratio of 3:1 which mitigates any potential long term residual impact.

In regard to MLES significant species, these are listed in Appendix A of City Plan Policy 1. There is no significant habitat for MLES species within the study area, and no significant residual impact for any these species is predicted.



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3.4.2 Waterway Corridors and Wetlands Overlay

One area of Waterway Corridor and Wetlands is identified within the study area (**Appendix 3**) in association with Moogurrapum Creek. The proposed development layout avoids and provides increased buffers to the mapped values, other than a very minor incursion within the nominated waterway buffer in the very southernmost portion of the study area for the entrance roadway. The roadway location has been determined through detailed design, particularly the transport and traffic study, within the overall VPSPA layout and provides the only acceptable entrance point for the south-eastern portion of the development. This location currently has an existing driveway and is dominated by exotic vegetation and a dwelling and no loss of ecological or riparian values will result. A vegetation management plan will be developed to provide increased habitat values within the buffer which will include detailed screen and buffer planting for this location.

A Flood and Stormwater Management Plan has been prepared by Water Technology Pty Ltd which addresses all aspects of hydrological flows and water quality (Water Technology 2018). The specific benchmarks for assessable development within the Waterway Corridors and Wetlands Overlay are addressed in **Table 3.4.2**

Table 3.4.2—Benchmarks for development that is accepted subject to requirements and assessable development

Performance Outcomes	Acceptable Outcomes	Response
For assessable development		
PO1 Development does not adversely impact on the hydrological regime or recharge of a wetland or waterway.	No acceptable outcome is nominated.	Complies. Existing hydrologic regimes are retained as described in sites Flood and Stormwater Management Plan (Water Technology 2018)
PO2 A core riparian buffer is maintained along and around waterways and wetlands that is vegetated, development free, and is of a sufficient width to: (1) protect water quality; (2) protect the stability of stream bank and bed; (3) allow for natural hydrological and geomorphological processes; (4) minimise erosion; (5) maintain or achieve healthy water temperatures and in-stream conditions; and (6) support viable wildlife habitat and movement.	**AO2.1** A development free, vegetated buffer area is provided in accordance with Table 8.2.11.3.2.	There is a minor incursion within the nominated buffer by the proposed entrance roadway. This location currently has an existing driveway and is dominated by exotic vegetation and a dwelling as shown in photo below. The roadway location has been determined through the traffic study and within the overall VPSPA layout and provides the only acceptable entrance point in the eastern portion of the development. The roadway will provide some buffering of the waterway and detailed screen planting and waterway management actions within the retained buffer will result in an overall increased ecological outcome.
	AO2.2	Development is generally located

Performance Outcomes	Acceptable Outcomes	Response
	No clearing occurs within the buffer area provided in accordance with Table 8.2.11.3.2.	outside of riparian buffer. Proposed development intersects the waterway buffer flood overlay in the South East portion of the site. This is not considered significant given: A significant portion of the waterway buffer is retained and will be subject to detailed vegetation management plan to increase ecological values; - The existing vegetation is dominated by vegetation exotic species and numerous recognised environmental weeds. - The location currently has low ecological values and contains an existing driveway and dwelling.
PO3 Riparian vegetation provides sufficient shade over the stream to protect in-stream habitat, biodiversity and ecological processes.	**AO3.1** Vegetation achieves 70% canopy cover over streams 10m or less in width and 70% canopy cover over near-bank areas along other streams.	There will be a detailed vegetation management plan and habitat management plan to guide ecological restoration. The existing riparian vegetation is fully retained by the layout.
PO4 Development maximises opportunities for natural filtration of sediments, nutrients and other pollutants, and slowing of overland flow.	No acceptable outcome is nominated.	Stormwater quantity devices exceed required reduction targets. Refer to the Flood and Stormwater Management Plan for the Site (Water Technology 2018). Full details of detailed design of natural filtration areas are to be provided as part of operational works and design.
PO5 The development is designed to avoid any worsening of water quality in a waterway or wetland. Editor's note—Applicants must also have regard to the Healthy waters code.	No acceptable outcome is nominated.	Stormwater quantity devices exceed required reduction targets. Refer to the Flood and Stormwater Management Plan for the Site (Water Technology 2018).
PO6 Bank erosion and slumping is avoided and hydrological and geomorphological processes of a waterway or wetland are maintained by: (1) providing an area either side of the existing channel to allow for natural lateral and longitudinal movement; (2) restoring bank vegetation and large woody debris within the channel; (3) implementing bank and bed stabilisation measures; and	No acceptable outcome is nominated. Editor's note—An environmental management plan may be required to support any proposed hydrology re-instatement works.	No bank erosion or slumping is expected. The design retains the existing hydrological flows and no loss of geomorphological processes; refer to the Flood and Stormwater Management Plan for the Site (Water Technology 2018). Detailed design will be provided as part of operational works.

Performance Outcomes	Acceptable Outcomes	Response
(4) reinstating a stable hydrology and geomorphology where it is modified or unstable.		
PO7 Barriers to in-stream or land based wildlife movement are removed unless they are naturally occurring or necessary for the safety of wildlife.	No acceptable outcome is nominated.	The removal of the existing dwelling, rural structures and fences within the southern portion of Lot 7 RP57455 will reduce barriers. The retained habitats east of the entry road provide uninterrupted wildlife movement. No loss of instream movement will result
PO8 Development incorporates opportunities for revegetation to enhance stream and habitat condition, biodiversity and wildlife movement wherever possible.	No acceptable outcome is nominated.	The removal of exotic vegetation (e.g. pines, celtis, lantana) and replacement will improve existing values. All revegetation/restoration works will incorporate appropriate endemic native species to replicate or complement the composition of the habitat values of the landscape. All plantings will be reflective of the species that are endemic to the site and be planted at densities that will produce a mature density reflective of the regional ecosystems which would naturally occur in the location.
PO9 Enhancement plantings and landscaping utilise endemic native species which replicate or complement the composition of the habitat it is connected to.	No acceptable outcome is nominated.	All revegetation will incorporate appropriate endemic native species to replicate or complement the composition of the habitat values of the landscape. All plantings will be reflective of the species that are endemic to the site and be planted at densities that will produce a mature density reflective of the regional ecosystems which would naturally occur in the location.
PO10 Development does not result in the introduction of non-native pest species (plant or animal) and removes existing pest species that pose a risk to ecological or stream integrity.	No acceptable outcome is nominated. Editor's note—Weed species are identified in Council's Pest Management Plan 2012–2016, Part B.	The weeds present on site and surrounding lands are all common in the local landscape. No new introduction of pest species (plant or animal), are expected or are likely to pose a risk to the areas ecological integrity. The proposed restoration actions will reduce their presence and provide increased habitat values.
PO11 Disturbance or predation of native fauna by domestic pets and livestock is prevented.	No acceptable outcome is nominated.	The entrance roadway provides an effective buffer and delineation of the retained habitats. The proposed layout removes existing domestic pets and livestock from the waterway and replaces these with native vegetation.
PO12 Development minimises potential for disturbance of wildlife as a result of noise, light, vibration or other source.	No acceptable outcome is nominated.	The entrance roadway provides a buffer to the proposed urbanised areas. Detailed design will seek to limit any light spillage into retained habitats. Screen plantings will provide additional buffering.
PO13	No acceptable	Access within the open space

Performance Outcomes	Acceptable Outcomes	Response
Public access to or along waterways and wetlands is located and designed to minimise disturbance of environmental values.	outcome is nominated.	network will be outside of the mapped waterways. No crossing of the waterway is sought.

Overall, the proposed layout protects the mapped Waterway Corridors and Wetlands and provides an increased buffer to these values. In combination with the proposed corridor revegetation and restoration works within the retained habitats, there will be a net increase in the overall ecological values of the riparian habitats associated with Moogurrapum Creek.

4.0 WILDIFE HABITAT MANAGEMENT

Habitat condition and fauna movement opportunities are proposed to be protected and enhanced within the proposed development area through the implementation of a Vegetation Management Plan (VMP) and a Wildlife Habitat Management Plan (WHMP). These plans are to be integrated to form a coordinated approach to the overall management of the site's ecological values.

Appropriate management strategies and techniques are to be guided by the South East Queensland Ecological Restoration Framework Guideline (Chenoweth EPLA and Bushland Restoration Services 2012).

The aim of the VMP will be to ensure the retained and restored habitat areas are treated through ongoing assisted restoration/regeneration to ensure full restoration of the structure, composition, and function of the pre-existing ecological communities. This will be achieved through weed removal and planting of appropriate endemic species.

The restoration activities will utilise a planting palette of native species that are endemic to the locality and primarily reflective of the regional ecosystems found in the local landscape.

Eucalyptus tereticornis and E. microcorys, recognised as the primary Koala food trees in the local area, will be used wherever appropriate. Other species of habitat value for Koala as food trees include *Eucalyptus seeana, E. siderophloia, E. tindaliae* and *Corymbia intermedia*.

To improve habitat condition, management of ongoing edge influences will be specifically addressed within the WHMP and will specify:

- The removal and continued maintenance of environmental weeds;
- The re-establishment of a natural ground layer and incorporation of fallen timber to shelter ground-dwelling species;
- The use of local ground layer, shrub and tree species that exhibit tolerance to remnant edges; and
- Denser planting along corridor edges to reduce temperatures and increase moisture levels in the central portions of the corridors

The aim of the WHMP will be to ensure that activities associated with construction and operation of the development does not cause any undue negative impacts on native fauna.

The WHMP will address the long-term management of fauna species and fauna habitat values on and will include measures to minimise and mitigate impacts on those species during all phases of development and operation.

The objectives of the WHMP will be to provide:

- A consistent and uniform approach which assures that the required standards of environmental protection, maintenance and Habitat Linkage are achieved;
- Procedures for the minimisation of disturbance to existing fauna in areas to be retained;
- An integrated approach to responsible management of the site's ecology and the maintenance or enhancement of ecosystem function in retained or rehabilitated areas; and
- A schedule of monitoring to be undertaken with appropriate feedback loops for active management.

The VMP and WHMP will be finalised upon the completion of the development assessment process and a finalised development footprint, and following establishment of final approval conditions.

5.0 REFERENCES

BAAM (2018). Victoria Point Structure Plan Area Ecological Matters Report. Report prepared for Fiteni Homes. Biodiversity Assessment and Management Pty Ltd, September 2018.

Chenoweth EPLA (2012). South East Queensland Ecological Restoration Framework Guideline.

Department of the Environment (DotE) (2013). Matters of National Environmental Significance: Significant Impact Guidelines 1.1. Commonwealth of Australia, Canberra.

DotE (2014). *EPBC Act referral guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory***.** Department of the Environment, Canberra.

Water Technology (2018). Flood and Stormwater Management Plan -36-40, 42, 44, 48, 50, 52, 56 Double Jump Road, 26 Prospect Crescent & 27 Brendan Way, Victoria Point. Water Technology Pty Ltd, October 2018.

APPENDIX 1
EPBC Act Protect Matters Online Search Tool and Wildlife Online Database Results

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

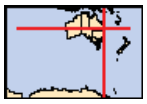
Report created: 13/09/18 15:12:20

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates
Buffer: 5.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	67
Listed Migratory Species:	76

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	109
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	34
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar) [Resource Information]

Name	Proximity
Moreton bay	Within Ramsar site

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species

Name	Status	Type of Presence
		habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Rostratula australis Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within

Name	Status	Type of Presence
		area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area
Fish		
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat may occur within area
Insects		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area
Plants		
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area
Baloghia marmorata Marbled Balogia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
Corchorus cunninghamii Native Jute [14659]	Endangered	Species or species habitat likely to occur within area
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat may occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Endiandra floydii Floyd's Walnut [52955]	Endangered	Species or species habitat likely to occur within area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat likely to occur within area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat may occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Saiphos reticulatus Three-toed Snake-tooth Skink [88328]	Vulnerable	Species or species habitat may occur within area
Sharks		

Name	Status	Type of Presence
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Dugong dugon Dugong [28]		Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Breeding known to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa incana Wandering Tattler [831]		Roosting known to occur within area

Name	Threatened	Type of Presence
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]		
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area
Heteroscelus incanus Wandering Tattler [59547]		Roosting known to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area

Name	Threatened	Type of Presence
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area

Name	Threatened	Type of Presence
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Sterna albifrons Little Tern [813]		Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area
Fish		
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Campichthys tryoni Tryon's Pipefish [66193]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus kelloggi Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
Microphis manadensis Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area
Solegnathus dunckeri Duncker's Pipehorse [66271]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Mammals		
Dugong dugon Dugong [28]		Species or species habitat known to occur within area
Reptiles		
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Laticauda laticaudata a sea krait [1093]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans [Resource Information]

Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Delphinus delphis Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Breeding known to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Bayview	QLD

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat likely to occur within area

Nationally Important Wetlands [Resource Information]

Name	State
Moreton Bay	QLD

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-27.59998 153.27572

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Status: All
Records: Confirmed
Date: Since 1980
Latitude: -27.6000
Longitude: 153.2758
Distance: 3
Email: adrian@baamecology.com
Date submitted: Thursday 13 Sep 2018 16:11:13
Date extracted: Thursday 13 Sep 2018 16:20:06

The number of records retrieved = 247

Disclaimer

As the DSITIA is still in a process of collating and vetting data, it is possible the information given is not complete. The information provided should only be used for the project for which it was requested and it should be appropriately acknowledged as being derived from Wildlife Online when it is used.

The State of Queensland does not invite reliance upon, nor accept responsibility for this information. Persons should satisfy themselves through independent means as to the accuracy and completeness of this information.

No statements, representations or warranties are made about the accuracy or completeness of this information. The State of Queensland disclaims all responsibility for this information and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you may incur as a result of the information being inaccurate or incomplete in any way for any reason.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			14
animals	amphibians	Hylidae	*Litoria caerulea*	common green treefrog		C		2
animals	amphibians	Hylidae	*Litoria gracilenta*	graceful treefrog		C		2
animals	amphibians	Hylidae	*Litoria fallax*	eastern sedgefrog		C		6
animals	amphibians	Hylidae	*Litoria tyleri*	southern laughing treefrog		C		2
animals	amphibians	Limnodynastidae	*Adelotus brevis*	tusked frog		V		2
animals	amphibians	Limnodynastidae	*Limnodynastes peronii*	striped marshfrog		C		6
animals	amphibians	Myobatrachidae	*Mixophyes fasciolatus*	great barred frog		C		2
animals	amphibians	Myobatrachidae	*Crinia parinsignifera*	beeping froglet		C		6
animals	amphibians	Myobatrachidae	*Pseudophryne raveni*	copper backed broodfrog		C		4
animals	birds	Acanthizidae	*Sericornis frontalis*	white-browed scrubwren		C		7
animals	birds	Acanthizidae	*Smicrornis brevirostris*	weebill		C		2
animals	birds	Acanthizidae	*Acanthiza lineata*	striated thornbill		C		2
animals	birds	Acanthizidae	*Acanthiza pusilla*	brown thornbill		C		13
animals	birds	Acanthizidae	*Gerygone olivacea*	white-throated gerygone		C		12
animals	birds	Acanthizidae	*Gerygone levigaster*	mangrove gerygone		C		1
animals	birds	Accipitridae	*Haliaeetus leucogaster*	white-bellied sea-eagle		C		4
animals	birds	Accipitridae	*Accipiter novaehollandiae*	grey goshawk		C		2
animals	birds	Accipitridae	*Aquila audax*	wedge-tailed eagle		C		1
animals	birds	Accipitridae	*Haliastur indus*	brahminy kite		C		1
animals	birds	Accipitridae	*Elanus axillaris*	black-shouldered kite		C		1
animals	birds	Accipitridae	*Pandion cristatus*	eastern osprey		SL		1
animals	birds	Accipitridae	*Accipiter fasciatus*	brown goshawk		C		4
animals	birds	Accipitridae	*Aviceda subcristata*	Pacific baza		C		5
animals	birds	Accipitridae	*Haliastur sphenurus*	whistling kite		C		7
animals	birds	Aegothelidae	*Aegotheles cristatus*	Australian owlet-nightjar		C		1
animals	birds	Alcedinidae	*Ceyx azureus*	azure kingfisher		C		2
animals	birds	Anatidae	*Anas superciliosa*	Pacific black duck		C		16
animals	birds	Anatidae	*Aythya australis*	hardhead		C		8
animals	birds	Anatidae	*Cygnus atratus*	black swan		C		6
animals	birds	Anatidae	*Anas castanea*	chestnut teal		C		2
animals	birds	Anatidae	*Dendrocygna arcuata*	wandering whistling-duck		C		3
animals	birds	Anatidae	*Anas platyrhynchos*	northern mallard	Y			2
animals	birds	Anatidae	*Chenonetta jubata*	Australian wood duck		C		15
animals	birds	Anhingidae	*Anhinga novaehollandiae*	Australasian darter		C		9
animals	birds	Anseranatidae	*Anseranas semipalmata*	magpie goose		C		3
animals	birds	Apodidae	*Hirundapus caudacutus*	white-throated needletail		SL		4
animals	birds	Ardeidae	*Bubulcus ibis*	cattle egret		C		6
animals	birds	Ardeidae	*Ardea intermedia*	intermediate egret		C		4
animals	birds	Ardeidae	*Egretta garzetta*	little egret		C		8
animals	birds	Ardeidae	*Ardea alba modesta*	eastern great egret		C		3
animals	birds	Ardeidae	*Nycticorax caledonicus*	nankeen night-heron		C		2
animals	birds	Ardeidae	*Egretta novaehollandiae*	white-faced heron		C		6
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		19
animals	birds	Artamidae	*Artamus leucorynchus*	white-breasted woodswallow		C		10
animals	birds	Artamidae	*Cracticus torquatus*	grey butcherbird		C		13

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Artamidae	*Cracticus tibicen*	Australian magpie		C		13
animals	birds	Burhinidae	*Burhinus grallarius*	bush stone-curlew		C		4
animals	birds	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo		C		7
animals	birds	Cacatuidae	*Eolophus roseicapilla*	galah		C		11
animals	birds	Cacatuidae	*Cacatua sanguinea*	little corella		C		4
animals	birds	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike		C		17
animals	birds	Campephagidae	*Lalage leucomela*	varied triller		C		9
animals	birds	Campephagidae	*Coracina tenuirostris*	cicadabird		C		4
animals	birds	Charadriidae	*Vanellus miles*	masked lapwing		C		1
animals	birds	Charadriidae	*Charadrius ruficapillus*	red-capped plover		C		1
animals	birds	Charadriidae	*Vanellus miles novaehollandiae*	masked lapwing (southern subspecies)		C		10
animals	birds	Cisticolidae	*Cisticola exilis*	golden-headed cisticola		C		8
animals	birds	Climacteridae	*Climacteris affinis*	white-browed treecreeper		C		3
animals	birds	Climacteridae	*Cormobates leucophaea metastasis*	white-throated treecreeper (southern)		C		10
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		12
animals	birds	Columbidae	*Macropygia amboinensis*	brown cuckoo-dove		C		1
animals	birds	Columbidae	*Streptopelia chinensis*	spotted dove	Y			10
animals	birds	Columbidae	*Columba livia*	rock dove	Y			4
animals	birds	Columbidae	*Geopelia striata*	peaceful dove		C		13
animals	birds	Columbidae	*Phaps chalcoptera*	common bronzewing		C		1
animals	birds	Columbidae	*Geopelia humeralis*	bar-shouldered dove		C		8
animals	birds	Coraciidae	*Eurystomus orientalis*	dollarbird		C		8
animals	birds	Corvidae	*Corvus orru*	Torresian crow		C		15
animals	birds	Cuculidae	*Chalcites basalis*	Horsfield's bronze-cuckoo		C		3
animals	birds	Cuculidae	*Chalcites lucidus*	shining bronze-cuckoo		C		10
animals	birds	Cuculidae	*Eudynamys orientalis*	eastern koel		C		4
animals	birds	Cuculidae	*Cacomantis variolosus*	brush cuckoo		C		2
animals	birds	Cuculidae	*Centropus phasianinus*	pheasant coucal		C		5
animals	birds	Cuculidae	*Cacomantis flabelliformis*	fan-tailed cuckoo		C		10
animals	birds	Cuculidae	*Scythrops novaehollandiae*	channel-billed cuckoo		C		4
animals	birds	Cuculidae	*Chalcites minutillus barnardi*	little bronze-cuckoo		C		1
animals	birds	Dicruridae	*Dicrurus bracteatus*	spangled drongo		C		13
animals	birds	Estrildidae	*Neochmia temporalis*	red-browed finch		C		9
animals	birds	Estrildidae	*Lonchura castaneothorax*	chestnut-breasted mannikin		C		4
animals	birds	Estrildidae	*Taeniopygia bichenovii*	double-barred finch		C		12
animals	birds	Eurostopodidae	*Eurostopodus mystacalis*	white-throated nightjar		C		2
animals	birds	Fringillidae	*Carduelis carduelis*	European goldfinch	Y			1
animals	birds	Halcyonidae	*Todiramphus macleayii*	forest kingfisher		C		11
animals	birds	Halcyonidae	*Todiramphus sanctus*	sacred kingfisher		C		12
animals	birds	Halcyonidae	*Dacelo novaeguineae*	laughing kookaburra		C		19
animals	birds	Hirundinidae	*Petrochelidon nigricans*	tree martin		C		1
animals	birds	Hirundinidae	*Petrochelidon ariel*	fairy martin		C		3
animals	birds	Hirundinidae	*Hirundo neoxena*	welcome swallow		C		12
animals	birds	Jacanidae	*Irediparra gallinacea*	comb-crested jacana		C		3
animals	birds	Laridae	*Sternula albifrons*	little tern		SL		1
animals	birds	Laridae	*Gygis alba*	white tern		C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren		C		11
animals	birds	Maluridae	*Malurus lamberti*	variegated fairy-wren		C		12
animals	birds	Megaluridae	*Megalurus timoriensis*	tawny grassbird		C		4
animals	birds	Megapodiidae	*Alectura lathami*	Australian brush-turkey		C		4
animals	birds	Meliphagidae	*Philemon corniculatus*	noisy friarbird		C		14
animals	birds	Meliphagidae	*Plectorhyncha lanceolata*	striped honeyeater		C		3
animals	birds	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater		C		13
animals	birds	Meliphagidae	*Gavicalis fasciogularis*	mangrove honeyeater		C		1
animals	birds	Meliphagidae	*Anthochaera chrysoptera*	little wattlebird		C		5
animals	birds	Meliphagidae	*Myzomela sanguinolenta*	scarlet honeyeater		C		13
animals	birds	Meliphagidae	*Meliphaga lewinii*	Lewin's honeyeater		C		14
animals	birds	Meliphagidae	*Caligavis chrysops*	yellow-faced honeyeater		C		10
animals	birds	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater		C		7
animals	birds	Meliphagidae	*Lichmera indistincta*	brown honeyeater		C		14
animals	birds	Meliphagidae	*Manorina melanocephala*	noisy miner		C		14
animals	birds	Meropidae	*Merops ornatus*	rainbow bee-eater		C		11
animals	birds	Monarchidae	*Myiagra rubecula*	leaden flycatcher		C		11
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		15
animals	birds	Monarchidae	*Monarcha melanopsis*	black-faced monarch		SL		4
animals	birds	Monarchidae	*Symposiachrus trivirgatus*	spectacled monarch		SL		1
animals	birds	Motacillidae	*Anthus novaeseelandiae*	Australasian pipit		C		3
animals	birds	Nectariniidae	*Dicaeum hirundinaceum*	mistletoebird		C		11
animals	birds	Neosittidae	*Daphoenositta chrysoptera*	varied sittella		C		3
animals	birds	Oriolidae	*Sphecotheres vieilloti*	Australasian figbird		C		6
animals	birds	Oriolidae	*Oriolus sagittatus*	olive-backed oriole		C		8
animals	birds	Pachycephalidae	*Colluricincla harmonica*	grey shrike-thrush		C		17
animals	birds	Pachycephalidae	*Pachycephala pectoralis*	golden whistler		C		7
animals	birds	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler		C		19
animals	birds	Pachycephalidae	*Colluricincla megarhyncha*	little shrike-thrush		C		4
animals	birds	Pardalotidae	*Pardalotus punctatus*	spotted pardalote		C		1
animals	birds	Pardalotidae	*Pardalotus striatus*	striated pardalote		C		16
animals	birds	Passeridae	*Passer domesticus*	house sparrow	Y			9
animals	birds	Pelecanidae	*Pelecanus conspicillatus*	Australian pelican		C		2
animals	birds	Petroicidae	*Petroica rosea*	rose robin		C		2
animals	birds	Petroicidae	*Eopsaltria australis*	eastern yellow robin		C		17
animals	birds	Phalacrocoracidae	*Phalacrocorax sulcirostris*	little black cormorant		C		5
animals	birds	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant		C		5
animals	birds	Phalacrocoracidae	*Phalacrocorax carbo*	great cormorant		C		1
animals	birds	Phasianidae	*Coturnix ypsilophora*	brown quail		C		6
animals	birds	Podargidae	*Podargus strigoides*	tawny frogmouth		C		13
animals	birds	Podicipedidae	*Tachybaptus novaehollandiae*	Australasian grebe		C		7
animals	birds	Psittacidae	*Platycercus adscitus palliceps*	pale-headed rosella (southern form)		C		4
animals	birds	Psittacidae	*Trichoglossus haematodus moluccanus*	rainbow lorikeet		C		16
animals	birds	Psittacidae	*Platycercus adscitus*	pale-headed rosella		C		12
animals	birds	Psittacidae	*Parvipsitta pusilla*	little lorikeet		C		4
animals	birds	Psittacidae	*Trichoglossus chlorolepidotus*	scaly-breasted lorikeet		C		7

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Psophodidae	*Psophodes olivaceus*	eastern whipbird		C		11
animals	birds	Rallidae	*Fulica atra*	Eurasian coot		C		3
animals	birds	Rallidae	*Gallinula tenebrosa*	dusky moorhen		C		12
animals	birds	Rallidae	*Lewinia pectoralis*	Lewin's rail		C		1
animals	birds	Rallidae	*Porphyrio melanotus*	purple swamphen		C		13
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		10
animals	birds	Rhipiduridae	*Rhipidura rufifrons*	rufous fantail		SL		2
animals	birds	Rhipiduridae	*Rhipidura albiscapa*	grey fantail		C		15
animals	birds	Strigidae	*Ninox boobook*	southern boobook		C		3
animals	birds	Sturnidae	*Acridotheres tristis*	common myna	Y			6
animals	birds	Sturnidae	*Sturnus vulgaris*	common starling	Y			3
animals	birds	Threskiornithidae	*Platalea regia*	royal spoonbill		C		6
animals	birds	Threskiornithidae	*Plegadis falcinellus*	glossy ibis		SL		1
animals	birds	Threskiornithidae	*Threskiornis molucca*	Australian white ibis		C		8
animals	birds	Threskiornithidae	*Threskiornis spinicollis*	straw-necked ibis		C		5
animals	birds	Timaliidae	*Zosterops lateralis*	silvereye		C		16
animals	malacostracans	Parastacidae	*Cherax depressus*					1
animals	mammals	Canidae	*Vulpes vulpes*	red fox	Y			4
animals	mammals	Dasyuridae	*Antechinus flavipes flavipes*	yellow-footed antechinus (south-east Queensland)		C		3
animals	mammals	Dasyuridae	*Planigale maculata*	common planigale		C		2
animals	mammals	Dasyuridae	*Sminthopsis murina*	common dunnart		C		2
animals	mammals	Felidae	*Felis catus*	cat	Y			2
animals	mammals	Leporidae	*Lepus europaeus*	European brown hare	Y			4
animals	mammals	Macropodidae	*Macropus rufogriseus*	red-necked wallaby		C		4
animals	mammals	Macropodidae	*Wallabia bicolor*	swamp wallaby		C		5
animals	mammals	Molossidae	*Mormopterus norfolkensis*	east coast freetail bat		C		2
animals	mammals	Molossidae	*Tadarida australis*	white-striped freetail bat		C		4
animals	mammals	Muridae	*Hydromys chrysogaster*	water rat		C		4
animals	mammals	Muridae	*Mus musculus*	house mouse	Y			4
animals	mammals	Muridae	*Rattus rattus*	black rat	Y			3
animals	mammals	Muridae	*Rattus lutreolus*	swamp rat		C		2
animals	mammals	Peramelidae	*Isoodon macrourus*	northern brown bandicoot		C		7
animals	mammals	Petauridae	*Petaurus norfolcensis*	squirrel glider		C		4
animals	mammals	Phalangeridae	*Trichosurus vulpecula*	common brushtail possum		C		11
animals	mammals	Phascolarctidae	*Phascolarctos cinereus*	koala		V	V	982
animals	mammals	Pseudocheiridae	*Pseudocheirus peregrinus*	common ringtail possum		C		5
animals	mammals	Pteropodidae	*Pteropus alecto*	black flying-fox		C		24
animals	mammals	Pteropodidae	*Pteropus scapulatus*	little red flying-fox		C		1
animals	mammals	Pteropodidae	*Pteropus poliocephalus*	grey-headed flying-fox		C	V	18
animals	mammals	Suidae	*Sus scrofa*	pig	Y			3
animals	mammals	Tachyglossidae	*Tachyglossus aculeatus*	short-beaked echidna		SL		2
animals	mammals	Vespertilionidae	*Myotis macropus*	large-footed myotis		C		1
animals	ray-finned fishes	Anguillidae	*Anguilla australis*	southern shortfin eel				35
animals	ray-finned fishes	Anguillidae	*Anguilla reinhardtii*	longfin eel				49
animals	ray-finned fishes	Cichlidae	*Oreochromis mossambica*	Mozambique mouthbrooder	Y			3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	ray-finned fishes	Eleotridae	*Hypseleotris galii*	firetail gudgeon				71
animals	ray-finned fishes	Eleotridae	*Gobiomorphus australis*	striped gudgeon				50
animals	ray-finned fishes	Eleotridae	*Hypseleotris compressa*	empire gudgeon				66
animals	ray-finned fishes	Hemiramphidae	*Arrhamphus sclerolepis*	snubnose garfish				1
animals	ray-finned fishes	Kuhliidae	*Kuhlia rupestris*	jungle perch				1
animals	ray-finned fishes	Megalopidae	*Megalops cyprinoides*	oxeye herring				1
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia duboulayi*	crimsonspotted rainbowfish				13
animals	ray-finned fishes	Melanotaeniidae	*Rhadinocentrus ornatus*	ornate rainbowfish				42
animals	ray-finned fishes	Mugilidae	*Mugil cephalus*	sea mullet				3
animals	ray-finned fishes	Percichthyidae	*Macquaria novemaculeata*	Australian bass				3
animals	ray-finned fishes	Plotosidae	*Tandanus tandanus*	freshwater catfish				12
animals	ray-finned fishes	Poeciliidae	*Gambusia holbrooki*	mosquitofish	Y			68
animals	ray-finned fishes	Poeciliidae	*Xiphophorus hellerii*	swordtail	Y			54
animals	ray-finned fishes	Synbranchidae	*Ophisternon gutturale*	swamp eel				2
animals	reptiles	Agamidae	*Intellagama lesueurii*	eastern water dragon		C		7
animals	reptiles	Agamidae	*Diporiphora australis*	tommy roundhead		C		1
animals	reptiles	Agamidae	*Pogona barbata*	bearded dragon		C		4
animals	reptiles	Boidae	*Morelia spilota*	carpet python		C		1
animals	reptiles	Chelidae	*Chelodina longicollis*	eastern snake-necked turtle		C		2
animals	reptiles	Chelidae	*Wollumbinia latisternum*	saw-shelled turtle		C		3
animals	reptiles	Chelidae	*Emydura macquarii macquarii*	Murray turtle		C		1
animals	reptiles	Colubridae	*Tropidonophis mairii*	freshwater snake		C		1
animals	reptiles	Colubridae	*Boiga irregularis*	brown tree snake		C		1
animals	reptiles	Elapidae	*Cryptophis nigrescens*	eastern small-eyed snake		C		3
animals	reptiles	Elapidae	*Demansia psammophis*	yellow-faced whipsnake		C		5
animals	reptiles	Gekkonidae	*Hemidactylus frenatus*	house gecko	Y			4
animals	reptiles	Scincidae	*Ctenotus spaldingi*	straight-browed ctenotus		C		3
animals	reptiles	Scincidae	*Eulamprus quoyii*	eastern water skink		C		4
animals	reptiles	Scincidae	*Carlia vivax*	tussock rainbow-skink		C		4
animals	reptiles	Scincidae	*Tiliqua scincoides*	eastern blue-tongued lizard		C		4
animals	reptiles	Scincidae	*Lampropholis amicula*	friendly sunskink		C		1
animals	reptiles	Scincidae	*Cryptoblepharus pulcher pulcher*	elegant snake-eyed skink		C		6
animals	reptiles	Scincidae	*Anomalopus verreauxii*	three-clawed worm-skink		C		4
animals	reptiles	Scincidae	*Lampropholis delicata*	dark-flecked garden sunskink		C		8
animals	reptiles	Scincidae	*Calyptotis scutirostrum*	scute-snouted calyptotis		C		7
animals	reptiles	Varanidae	*Varanus varius*	lace monitor		C		4
fungi		Basidiomycota	*Tylopilus*			C		1/1
plants	ferns	Nephrolepidaceae	*Nephrolepis cordifolia*	fishbone fern		C		1/1
plants	ferns	Schizaeaceae	*Schizaea bifida*	forked comb fern		C		1/1
plants	higher dicots	Asteraceae	*Gymnocoronis spilanthoides*		Y			2/2
plants	higher dicots	Campanulaceae	*Lobelia gibbosa*	native lobelia		C		1/1
plants	higher dicots	Celastraceae	*Elaeodendron melanocarpum*			C		1/1
plants	higher dicots	Chenopodiaceae	*Suaeda australis*			C		1/1
plants	higher dicots	Crassulaceae	*Bryophyllum fedtschenkoi*		Y			1/1
plants	higher dicots	Euphorbiaceae	*Croton acronychioides*	thick-leaved croton		C		1/1
plants	higher dicots	Malvaceae	*Malvaviscus arboreus*		Y			2/2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Myrtaceae	*Lophostemon confertus x L.suaveolens*			C		1/1
plants	higher dicots	Myrtaceae	*Rhodomyrtus psidioides*	native guava		C		1/1
plants	higher dicots	Oleaceae	*Chionanthus ramiflorus*	northern olive		C		1/1
plants	higher dicots	Plantaginaceae	*Bacopa lanigera*		Y			1/1
plants	higher dicots	Rhizophoraceae	*Ceriops australis*			C		1/1
plants	higher dicots	Rutaceae	*Acronychia laevis*	glossy acronychia		C		1/1
plants	higher dicots	Urticaceae	*Urtica urens*	small nettle	Y			1/1
plants	liverworts	Frullaniaceae	*Frullania*			C		1/1
plants	lower dicots	Apocynaceae	*Catharanthus roseus*	pink periwinkle	Y			1/1
plants	lower dicots	Monimiaceae	*Wilkiea macrophylla*	large-leaved wilkiea		C		1/1
plants	monocots	Asparagaceae	*Asparagus aethiopicus cv. Sprengeri*	basket asparagus fern	Y			1/1
plants	monocots	Cyperaceae	*Cyperus aquatilis*			C		1/1
plants	monocots	Cyperaceae	*Gahnia clarkei*	tall sawsedge		C		1/1
plants	monocots	Cyperaceae	*Isolepis cernua*	nodding club rush		C		1/1
plants	monocots	Hemerocallidaceae	*Dianella caerulea var. producta*			C		1/1
plants	monocots	Marantaceae	*Thalia geniculata*		Y			1/1
plants	monocots	Poaceae	*Entolasia stricta*	wiry panic		C		1/1
plants	mosses	Sematophyllaceae	*Sematophyllum subhumile*			C		1/1

CODES

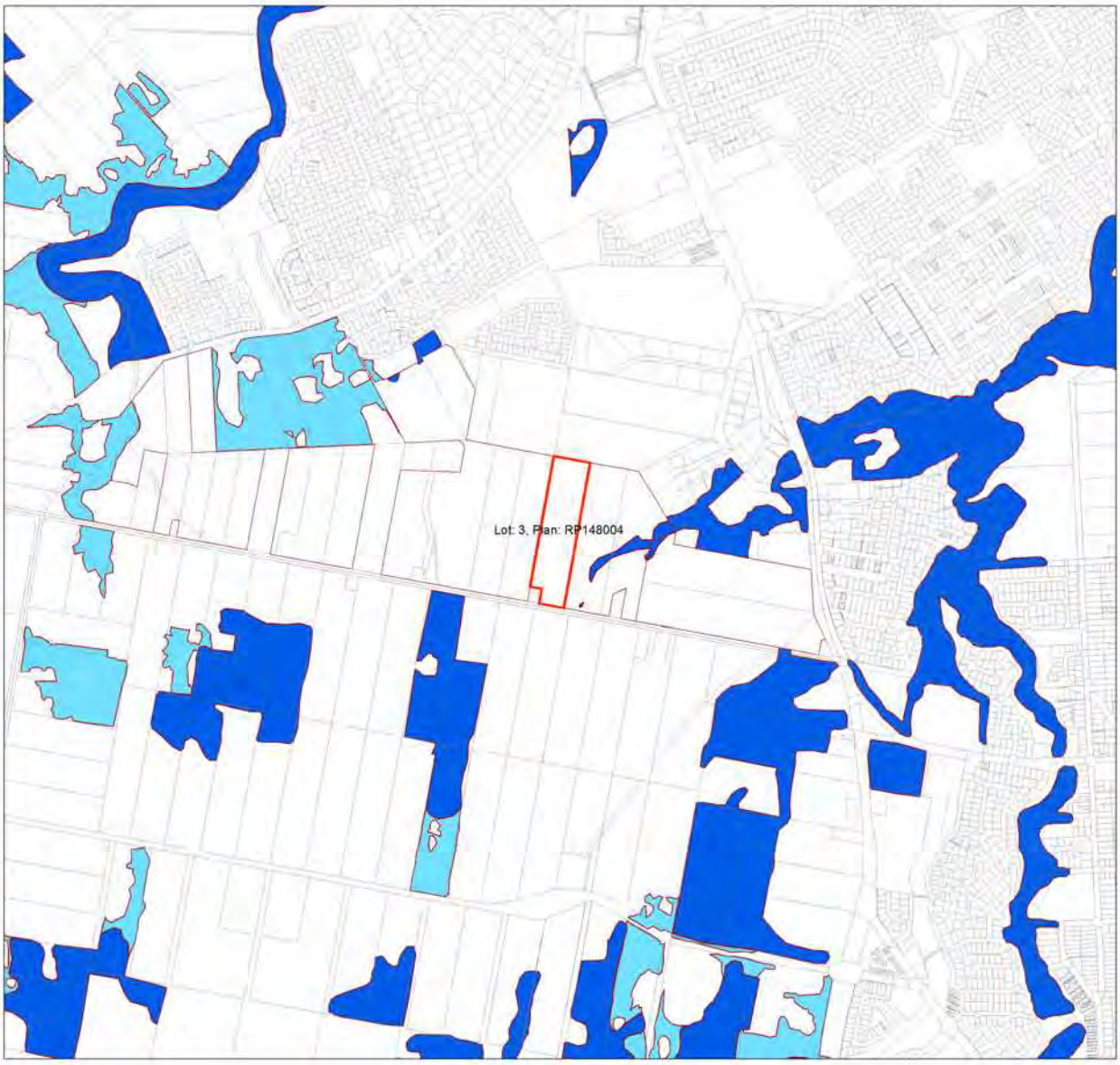
I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.* The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ( ).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999.* The values of EPBC are Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Extinct in the Wild (XW) and Vulnerable (V).

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).
This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

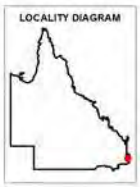
APPENDIX 2
Matters of State Environmental Significance



Regulated Vegetation Management Map

Legend

- Lot and Plan
- Category A area (Vegetation offsets/compliance notices/VDecs)
- Category B area (Remnant vegetation)
- Category C area (High-value regrowth vegetation)
- Category R area (Reef regrowth watercourse vegetation)
- Category X area (Exempt clearing work on Freehold. Indigenous and Leasehold land)
- Water
- Area not categorised
- Cadastral line
  Property boundaries shown are provided as a locational aid only



N

0 200 400 600 800 1,000 m

This product is projected into:
GDA 1994 MGA Zone 56

Disclaimer:
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Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.dnrme.qld.gov.au or contact the Department of Natural Resources, Mines and Energy.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.

Queensland Government

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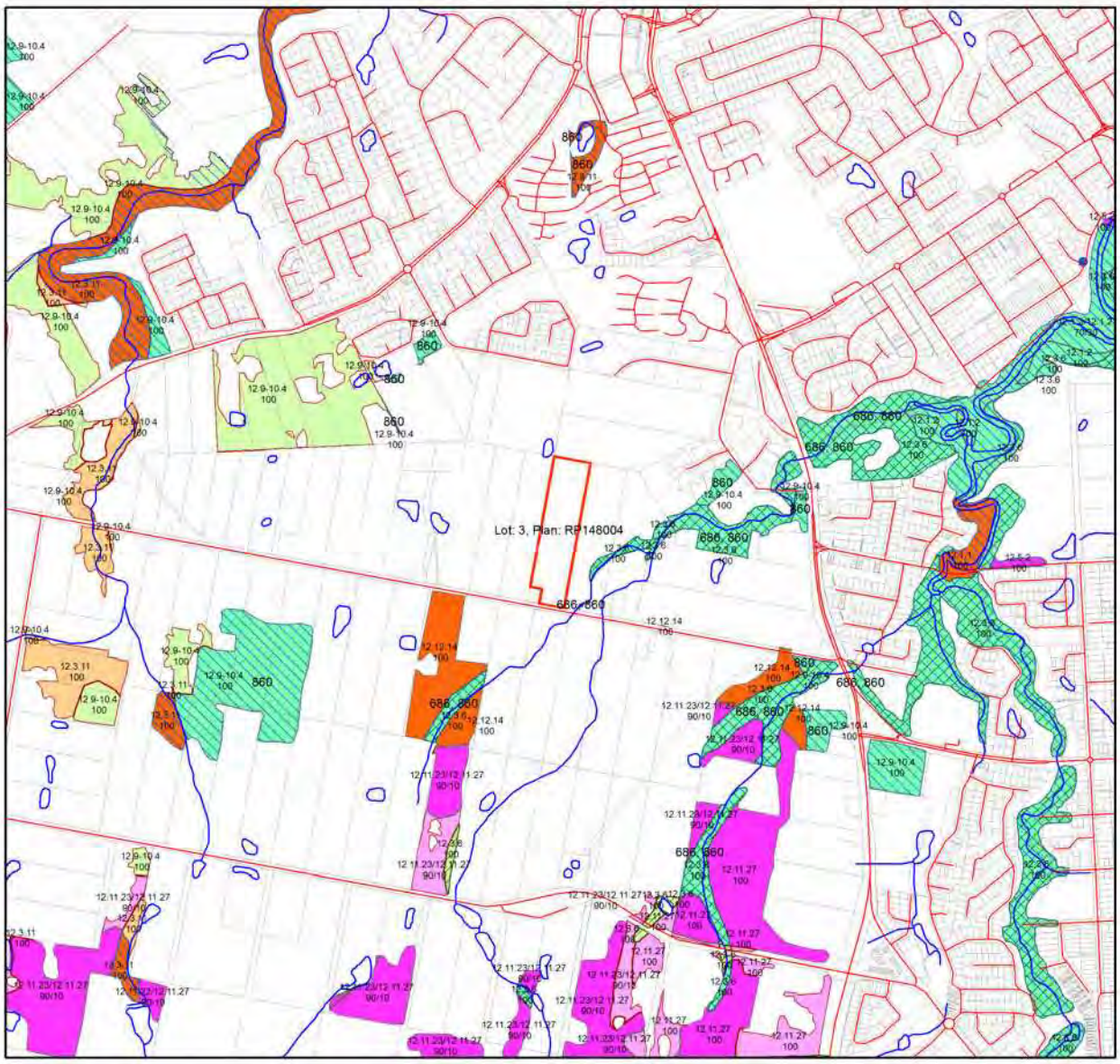

Vegetation Management Supporting Map

Legend

- Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category A or B area under Section 20AH
  These areas are edged in yellow and filled with the remnant RE Status
- Category C area containing endangered regional ecosystems
- Category C area containing of concern regional ecosystems
- Category C area that is a least concern regional ecosystem
- Category C area under Section 20AI
  These areas are edged in purple and filled with the remnant RE Status
- Non Remnant
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map
  (Stream order shown as black number against stream where available)
- Roads
- National Parks, State Forest and other reserves
- Cadastral line
  Property boundaries shown are provided as a locational aid only

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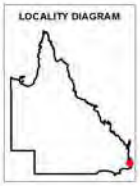
LOCALITY DIAGRAM



N

0 140 280 420 560 700 m

This product is projected into:
GDA 1994 MGA Zone 56

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

Disclaimer:
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Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.dnrme.qld.gov.au or contact the Department of Natural Resources, Mines and Energy.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

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Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - State Code 16: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Planning Act 2016*; and
- Accepted development vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas.

The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records.

The Department of Natural Resources, Mines and Energy website (http://www.dnrme.qld.gov.au) has more information on how the layer is applied under the State Development Assessment Provisions - State Code 16: Native vegetation clearing and the *Vegetation Management Act 1999*.

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated.

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or

2) in which the protected wildlife, at any stage of its life cycle, is located.

Protected wildlife includes endangered, vulnerable or near-threatened native wildlife prescribed under the *Nature Conservation Act 1992*.

Essential habitat in Category A and/or Category B and/or Category C

No records

Koala Conservation in South East Queensland State Planning Regulatory Provisions

- Lot and Plan
- Priority Koala Assessable Development Areas
- Koala Assessable Development Areas
- Outside SPRP Koala Assessable Development Areas

Koala SPRP - Identified Broad-Hectare Areas

- Koala SPRP - Identified Broad-Hectare Areas

Koala SPRP - Habitat Values

Bushland Habitat

- High Value Bushland
- Medium Value Bushland
- Low Value Bushland

Suitable for Rehabilitation

- High Value Rehabilitation
- Medium Value Rehabilitation
- Low Value Rehabilitation

Other Areas of Value

- High Value Other
- Medium Value Other
- Low Value Other
- Generally not suitable
- Water
- Cadastral Boundaries
- Local Government Boundaries

N

0 130 260 390 520 650 m

This product is projected into GDA 1994 MGA Zone 56

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In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct marketing or be used in breach of the privacy laws.

Based on or contains data provided by the State of Queensland 2010.

Note - These maps are not regulatory. Regulatory maps and requirements can be downloaded from the DES website. Further information in relation to regulatory requirements for development and planning activities should be sought from the relevant Local Government Authority or the Department of Environment and Science.

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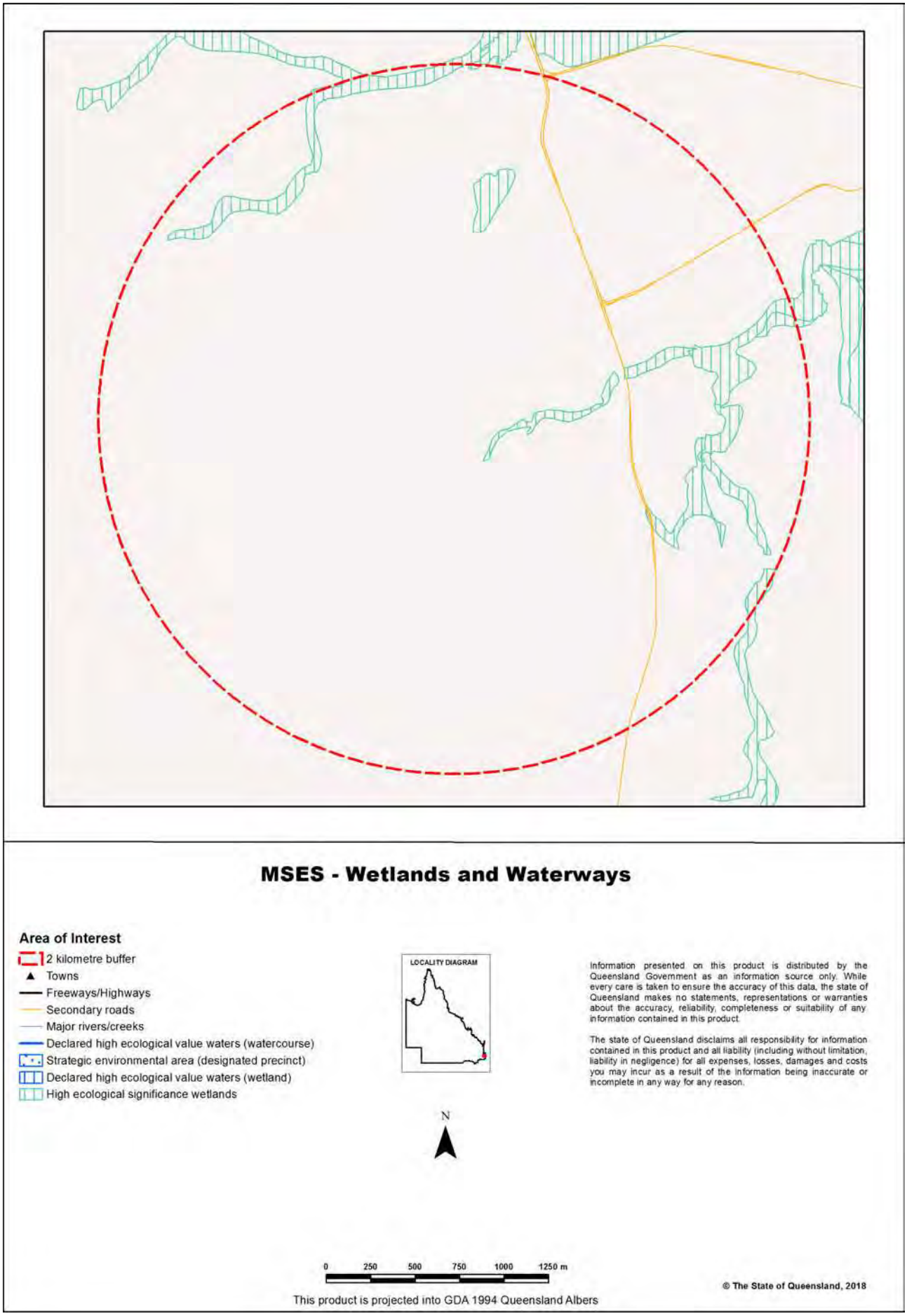
Map 2 - MSES - Wetlands and Waterways



21/09/2018 12:09:04
Longitude: 153.277683 Latitude: -27.602745

Protected Plants Flora Survey Trigger Map

Legend

- Coordinates
- High risk area
- Cadastral line
  Property boundaries shown are provided as a locational aid only
- Freeways / motorways / highways
- Secondary roads / streets

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@ehp.qld.gov.au

N

0 480 960 1,440 1,920 2,400 m

This product is projected into:
GDA 1994 Queensland Albers

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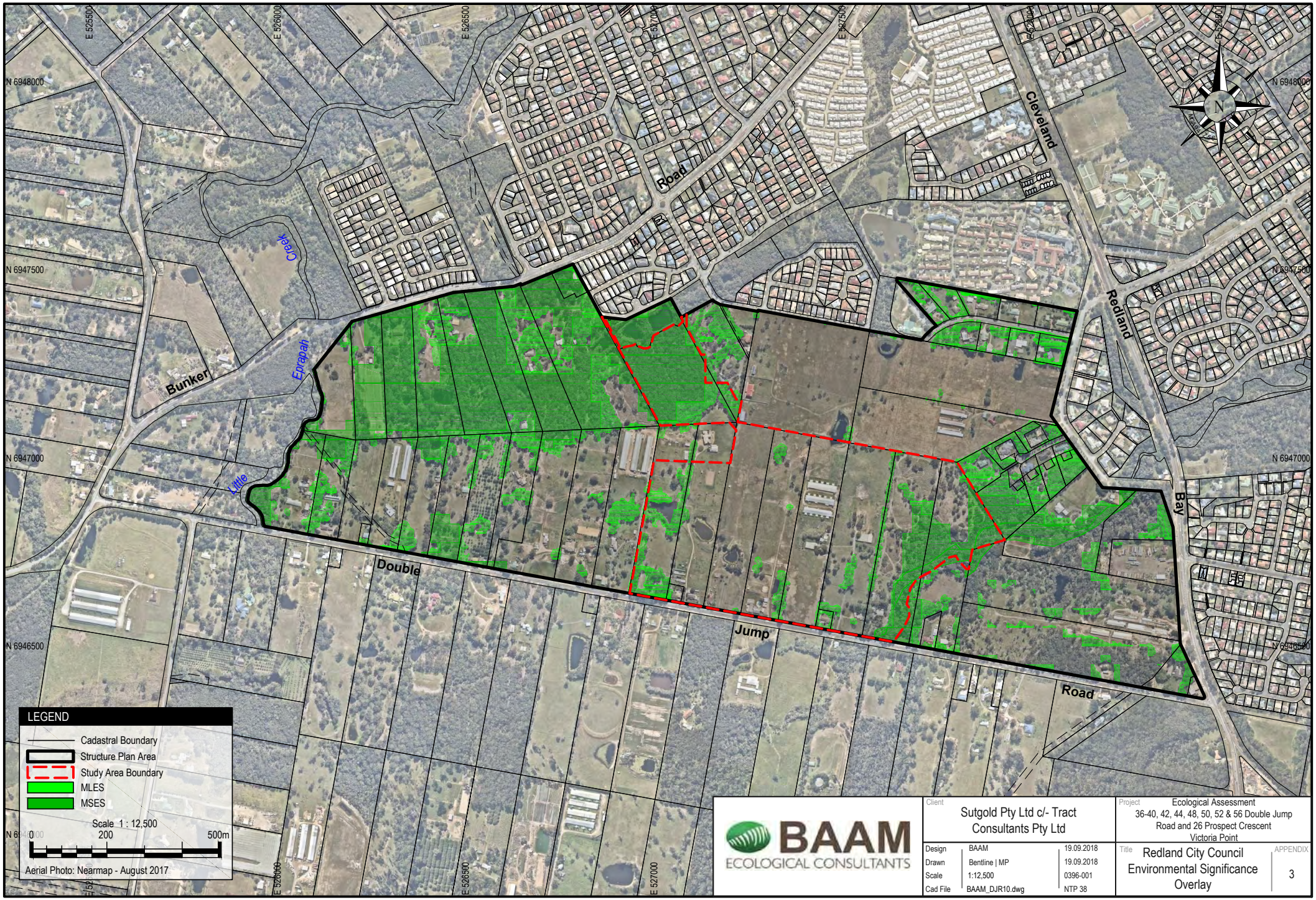
APPENDIX 3
RCC Environmental Significance and Waterway Corridors and Wetlands Overlays



BAAM ECOLOGICAL CONSULTANTS

Client	Sutgold Pty Ltd c/- Tract Consultants Pty Ltd	
Project	Ecological Assessment 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent Victoria Point	
Design	BAAM	19.09.2018
Drawn	Bentline | MP	19.09.2018
Scale	1:12,500	0396-001
Cad File	BAAM_DJR10.dwg	NTP 38
Title	Redland City Council Environmental Significance Overlay	APPENDIX 3

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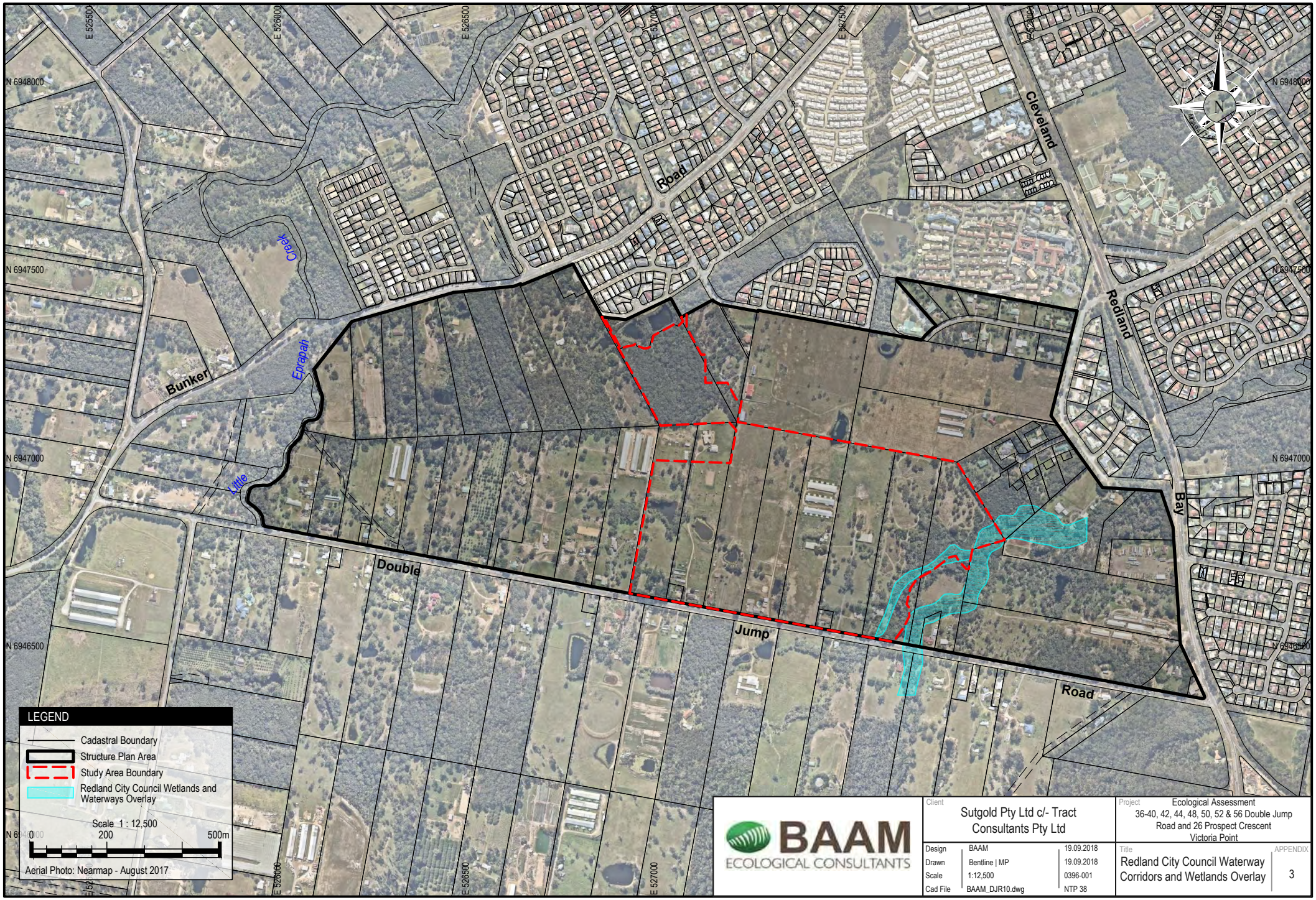

BAAM ECOLOGICAL CONSULTANTS

Client	Sutgold Pty Ltd c/- Tract Consultants Pty Ltd	
Project	Ecological Assessment 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent Victoria Point	
Design	BAAM	19.09.2018
Drawn	Bentline | MP	19.09.2018
Scale	1:12,500	0396-001
Cad File	BAAM_DJR10.dwg	NTP 38
Title	Redland City Council Waterway Corridors and Wetlands Overlay	APPENDIX 3

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APPENDIX 4
Likelihood of Occurrence for Threatened Flora and Fauna Species

Conservation significant terrestrial flora and vertebrate fauna species recorded or predicted to occur within a 5 km radius of the subject site and their likelihood of occurrence (known, likely, potential, unlikely) within or immediately adjoining the subject site.

Abbreviations: EPBC = status under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth); **NCA** = status under the *Nature Conservation Act 1992* (Queensland); **PM** = EPBC Protected Matters Search Tool database search within a 10 km radius of the study area; **WN** = Queensland Department of Environment and Heritage Protection WildNet database search within a 25 km radius of the study area; E = Endangered; V = Vulnerable; NT = Near Threatened; M = Migratory; S = Special Least Concern (Migratory or culturally significant); LC = Least Concern; X = species occurrence predicted (PM).

Likelihood of occurrence categories: Known - from other surveys (BAAM, other consultancies, databases), species recorded onsite; **Likely to occur** – species not known to occur onsite but the site is within the known range of the species, potentially suitable habitat is present and there are either database records for the local region or knowledge of the species occurrence suggests it may occur as a resident or visitor; means 'high potential' or good habitat is present but no species were observed onsite; **Potential to occur** – the site is within the known range of the species and potentially suitable habitat is present but there are no database records for the local region and/or it is a rare, erratic or poorly known species; means 'low potential' or habitat for species is not definitive; **Unlikely to occur** – no suitable habitat present and/or the site is outside of the known range of the species.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Birds								
Anthochaera phrygia	Regent Honeyeater	E,M	E	X			Box-ironbark eucalypt forests and woodlands on the inland slopes of the Great Dividing Range, preferring the wettest, most fertile sites (Garnett *et al*. 2011).	**Unlikely**. The species is not known from the local region and only low value habitats for the species.
Botaurus poiciloptilus	Australasian Bittern	E	C	X			Shallow, vegetated freshwater or brackish swamps, favouring those dominated by sedges, rushes and/or reeds (Garnett *et al*. 2011).	**Unlikely**. Very little suitable habitat present. The wetland and pondage areas on the subject site have little to no habitat of relevance to this species.
Erythrotriorchis radiatus	Red Goshawk	V	E	X			Woodlands and forests, ideally with a mosaic of vegetation types and permanent water, particularly riverine forests. The species avoids both very dense and very open habitats (Marchant and Higgins, 1993).	**Unlikely**. No observation records for the region and the species was not observed during the field survey.
Dasyornis brachypterus	Eastern Bristlebird	E		X			Occurs in a variety of habitats but has only been recorded from three disjunct populations in Queensland/New South Wales (DoEE 2017a).	**Unlikely**. No suitable habitat and the species is not known from the local region.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Geophaps scripta scripta	Squatter Pigeon	V		X			Dry grassy eucalypt woodlands and open forests, also *Callitris* and *Acacia* woodlands. Most birds live in sandy sites near permanent water (Frith 1982; Blakers *et al*. 1984; Crome and Shields 1992).	**Unlikely.** Not known in local landscape.
Poephila cincta cincta	Southern Black-throated Finch	E		X			Dry open grassy woodlands and forests with seeding native grasses and free-standing water (Higgins *et al.* 2006b).	**Unlikely.** Not known in local landscape.
Turnix melanogaster	Black-breasted Button-quail	V	V	X			Semi-evergreen vine thicket and low microphyll vine forest; also dry rainforest (softwood scrubs) of Brigalow Belt, mature Hoop Pine plantations, and *Acacia* and *Austromyrtus* scrubs on sandy coastal soils (Garnett *et al*. 2011).	**Unlikely**. The site is dry open woodland or pasture and provides no suitable habitat present.
Lathamus discolor	Swift Parrot	E	E	X			Mainly dry open eucalypt forest and woodland, including those with Grey Box or River Red Gum (Higgins 1999).	**Unlikely.** A rare visitor to flowering eucalypts, but no local records. The extant habitats hold low potential for the species to occur. The proposed restoration will increase habitat values. .
Rostratula australis	Australian Painted Snipe	E	V	X			Terrestrial shallow wetlands, ephemeral and permanent, usually freshwater but occasionally brackish. They also use inundated grasslands, saltmarsh, dams, rice crops, sewage farms and bore drains (Marchant and Higgins 1993).	**Unlikey.** The existing farmdams do not support preferred habitats.
Calyptorhynchus lathami lathami	Glossy-Black Cockatoo		V		X		Lives in coastal woodlands and drier forest areas, open inland woodlands or timbered watercourses where its main food trees are common	**Potential.** Vegetated portions of the study area are dominated by *Allocasuarin littoralis*, a favoured food source. No birds or feeding evidences (orts) were observed during the surveys.
Frogs								
Adelotus brevis	Tusked Frog		V		X		Found within wet eucalypt forest, rainforest and occasionally dry eucalypt forest in close proximity to slow-moving creeks. Also recorded in disturbed areas.	**Potential.** Little Eprapah Creek holds some habitat values for this species. If present, it is likely to only occur within the study area during extended rainfall periods.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Mammals								
Phascolarctos cinereus (SEQ Bioregion)	Koala (SEQ Bioregion)	V	V	X	X		Eucalypt forest and woodland, feeding mostly on eucalypts.	**Known.** The current and prior site surveys have recorded the evidence (scats) of this species presence. The species is known to occur across the locality. There is some loss of habitat envisaged by the development footprint; however the proposed restoration and mitigation actions will increase habitat and safe movement options.
Dasyurus maculatus	Spotted-tail Quoll	E	V	X			This species shelter in rock caves, boulder piles and hollow logs or trees, with basking sites usually nearby (Menkhorst and Knight 2004).	**Unlikely.** No local records and no suitable habitat for this species.
Pteropus poliocephalus	Grey-headed Flying-fox	V	C	X	X		Open eucalypt forests, woodlands, melaleuca swamps and banksia woodlands, particularly on more fertile alluvial soils. The establishment of a camp is only likely within riparian vegetation (Churchill 2008).	**Likely** regular visitor to flowering eucalypts and Melaleuca sp. on the subject site. No flying-fox camp currently occurs on the subject lands. The proposed restoration will increase the overall feeding habitat for this species.
Xeromys myoides	Water Mouse, False Water Rat, Yirrkoo	V	V	X			The species occurs in mangroves, saltmarsh, sedged lakes near foredunes and coastal freshwater swamps. They require relatively large areas of intertidal flats over which to forage, together with suitable adjacent areas for nest sites	**Unlikely**. The species will not occur within the subject site, as there are no suitable habitats present.
Chalinolobus dwyeri	Large Pied Bat	V	V	X			Little known, but may depend heavily on sandstone outcrops. It has been found roosting in disused mine shafts, caves, overhangs and disused Fairy Martin *Petrochelidon ariel* nests (Hoye and Schulz 2008). It also possibly roosts in the hollows of trees (Duncan *et al.* 1999).	**Unlikely**. No suitable habitat present and not known from the local region.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Potorous tridactylus tridactylus (SE Mainland)	Long-nosed Potoroo	V					There is no consistent pattern to the habitat of the Long-nosed Potoroo (SE Mainland); it can be found in wet eucalypt forests (Seebeck 1995) to coastal heaths and scrubs (Mason 1997). The main factors would appear to be access to some form of dense vegetation for shelter (Bennett 1987).	**Unlikely.** Due to past and ongoing landuses, that have resuted in a highly disturbed environment, there is no suitable dense vegetation present for this species.
Petauroides volans	Greater Glider	V		X			Restricted to eucalypt forests and woodlands that support old trees with large hollows. They have relatively low persistence in small forest fragments, and disperse poorly across vegetation that is not native forest (DoEE 2017b).	**Unlikely.** Although the subject site supports numerous old hollow-bearing trees, this species is unlikely to move through the highly fragmented environment.
Reptiles								
Coeranoscincus reticulatus	Three-toed Snake-toothed Skink	V		X			Inhabits subtropical rainforest and nearby wet sclerophyll forests. Most records are from montane rainforest on dark soils, but it also occurs on Fraser Island and nearby Cooloola coast in rainforests on pale sands.	**Unlikely.** No suitable habitat present and not known from the local region.
Delma torquata	Collared Delma	V	V	X			Shelters in soil cracks, leaf litter and under loose surface rocks in open eucalypt forest with a shrub and tussock grass understorey.	**Unlikely.** No suitable habitat present and not known from the local region.
Migratory Terrestrial Species								
Cuculus optatus	Oriental Cuckoo	M					This species is a relatively sparse migrant to south-east Queensland in areas of suitable, open habitat.	**Potential.** May be an occasional visitor to the subject site.
Hirundapus caudacutus	White-throated Needletail	M		X			This is an aerial species, typically occurring over forested habitats, but also over coastal areas, including cities (Higgins 1999; Pizzey and Knight 2003). They forage aerially in small to huge flocks for insects and spiders, often associated with low pressure weather systems in combination with other aerial species.	**Likely.** Well known in local area. This species may occur over the site, primarily in summer preceding rainfall and storm events. This species has little to no relevance to the proposed actions.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Monarcha melanopsis	Black-faced Monarch	S,M		X			Mainly rainforests, also wet sclerophyll forest and open forest near rainforest (Higgins *et al.* 2006a).	**Potential.** Summer visitor to forested habitats on the subject site, particularly denser vegetated portions along Little Eprapah Creek.
Monarcha trivirgatus	Spectacled Monarch	M		X			Spectacled Monarchs are mostly found singly or in pairs in low dense vegetation, mainly in rainforests, but also in wet sclerophyll forests and other dense vegetation such as mangroves, drier sclerophyll forests, woodlands, parks and gardens.	**Potential.** Low potential to occur in the forested habitats on the subject site, particularly denser vegetated portions associated with Little Eprapah Creek.
Myiagra cyanoleuca	Satin Flycatcher	M		X			Satin Flycatchers are mostly found in eucalypt forest, favouring wet forests, moist gullies and watercourses. They are largely absent from regrowth forests and feed on arthropods (mainly insects) and, occasionally, seeds. Generally, the Satin Flycatcher forages singly or in pairs high in the canopy and sub-canopy.	**Potential.** Potential to occur in the forested habitats on the subject site, particularly denser vegetated portions associated with Little Eprapah Creek.
Rhipidura rufifrons	Rufous Fantail	S,M		X			Moist habitats, including closed forests, coastal scrubs, mangroves and along watercourses and gullies, and urban/rural areas during mid-year migration (Pizzey and Knight, 2003; Higgins *et al.* 2006a).	**Potential.** Potential summer visitor to forested associated with Little Eprapah Creek.
Migratory Wetlands Species								
Ardea alba	Great Egret	M		X			This species is found in most shallow, coastal and inland wetland habitats, both estuarine and freshwater, including man-made dams and ponds and moist grasslands (Marchant and Higgins 1990; Pizzey and Knight 2003).	**Likely.** There are suitable habitats for this common wide ranging species within and adjoining the subject site.
Ardea ibis	Cattle Egret	M		X			The Cattle Egret inhabits grasslands, wetlands and wooded lands, often foraging away from water in grassland, pasture and crops. The species is strongly associated with grazing animals in Australia, but also forages at garbage tips, follows machinery, and feeds independently.	**Known.** This species is common in the local landscape. The proposed actions will reduce potential habitat values. However this will not have any notable impact on the species or its long term presence in the area.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Plants								
Mardenia longiloba	Clear Milkvine	V	V		X		Clear Milkvine grows in open eucalypt forest, or margins of subtropical and warm temperate rainforest, and in areas of rocky outcrops.	**Unlikely**. This species was not detected and there is no suitable habitat, due to past and ongoing agricultural activities and weed invasions.
Marsdenia coronata	Slender Milkvine		V		X		Most commonly found in open eucalypt forest and woodland communities on hillslopes and ridge tops at altitudes of 40–780 m above sea level.	**Unlikely**. This species was not detected and there is no suitable habitat, due to past and ongoing agricultural activities and weed invasions.
Arthraxon hispidus	Hairy-joint Grass	V	V	X			The species occupy a diverse range of ecosystem types including edges of rainforest, wet eucalyptus forest, near creeks or swamps, woodland, freshwater springs, coastal dunes, gullies and sandy alluvium in open forests DoEE 2017c).	**Unlikely.** This species was not detected. Whilst some suitable habitat is on site, the ground stratum is highly disturbed and there are no historical records within and surrounding the study area.
Baloghia marmorata	Marbled Baloghia	V	V	X			Marbled Baloghia is found in subtropical rainforest/notophyll vine forest and wet sclerophyll forest (brush box woodland) with rainforest understorey between 150 and 550 m above sea level, with associated soil type being rich black or dark brown clay and loam derived from basalt (DoEE 2017d).	**Unlikely**. This species was not detected. The subject site contains low-lying coastal vegetation community with patches of loamy soil derived from basalt (typical of this region) and no suitable habitat for this species.
Corchorus cunninghamii	Native Jute	E	E	X			This species has been recorded in ecotonal habitats between wet sclerophyll and rainforest, occupying a variety of habitat types from the gully to ridge lines (DoEE 2017e).	**Unlikely**. This species was not detected. Whilst a population of this endangered species occurs in a rainforest edge habitat on Mt Cotton, the species is unlikely to compete with weed species that are currently dominating the ground layer in addition to inappropriate fire regime for the species.
Cryptocarya foetida	Stinking Cryptocarya	V	V	X			The species typically occurs in littoral rainforest, usually on sandy and basaltic soils (DoEE 2017f).	**Unlikely**. This species was not detected. Whilst some suitable habitat is on site, there are no historical records within and surrounding the area.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Cryptostylis hunteriana	Leafless Tongue-orchid	V		X			The species predominantly occurs along coastal heathlands, margins of coastal swamps and sedge lands, coastal forest, dry woodland, often associated with understorey of forested vegetation communities. The species is only known to occur from a single plant near the village of Tinnanbar and four additional coastal populations north of the Glass Mountains to Tin Can Bay on sandy or rocky heathland, Mt Mee in montane heathy woodland and Mt Coolum in rocky coastal heath (DoEE 2017g).	**Unlikely**. This species was not detected. The study area does not support sutiable habitats and is outside of the known range for this species.
Endiandra floydii	Floyd's Walnut	E		X			Warm temperate, subtropical rainforest or wet sclerophyll forest with Brush Box overstorey, and in and Camphor Laurel forest.	**Unlikely.** No suitable habitats present
Macadamia integrifolia and *Macadamia tetraphylla*	Macadamia Nut	V	NT	X	X	X	These species often occupy ecotonal habitat, particularly between rainforest and sclerophyll forests, preferring well-drained fertile soil (DoEE 2017h).	**Known**. Macadamia trees were detected within one property of the studay area. However, the individuals that were detected were clearly planted in rows. Given the context, these individual plants are not protected under *Nature Conservation Act 1992* and or the *EPBC Act 1999.*
Phaius australis	Lesser Swamp-orchid	E	E	X			The species is typically restricted to heath/ sedge land, wetlands, swampy grassland or swampy forest in association with Broad-leaved Paperbark or Swamp Mahogany and or Swamp Box, swampy rainforest or fringing open forest.	**Unlikely.** The study area soes not support preferred habitats for this species.
Samadera bidwillii	Quassia	V		X			Commonly occurs in lowland rainforest or rainforest margins generally associated with watercourses. It is only known from populations north of Gympie (DoEE 2017i)	**Unlikely:** The study area is outside of the known range for this species.
Thesium australe	Toadflax	V	V	X			Semi-parasitic on roots of a range of grass species notably Kangaroo Grass (Themeda triandra) occurs in shrubland, grassland or woodland, often on damp sites (DoEE 2017j).	**Unlikely**. This species was not detected and there is no suitable habitat, due to past and ongoing agricultural activities and weed invasions.

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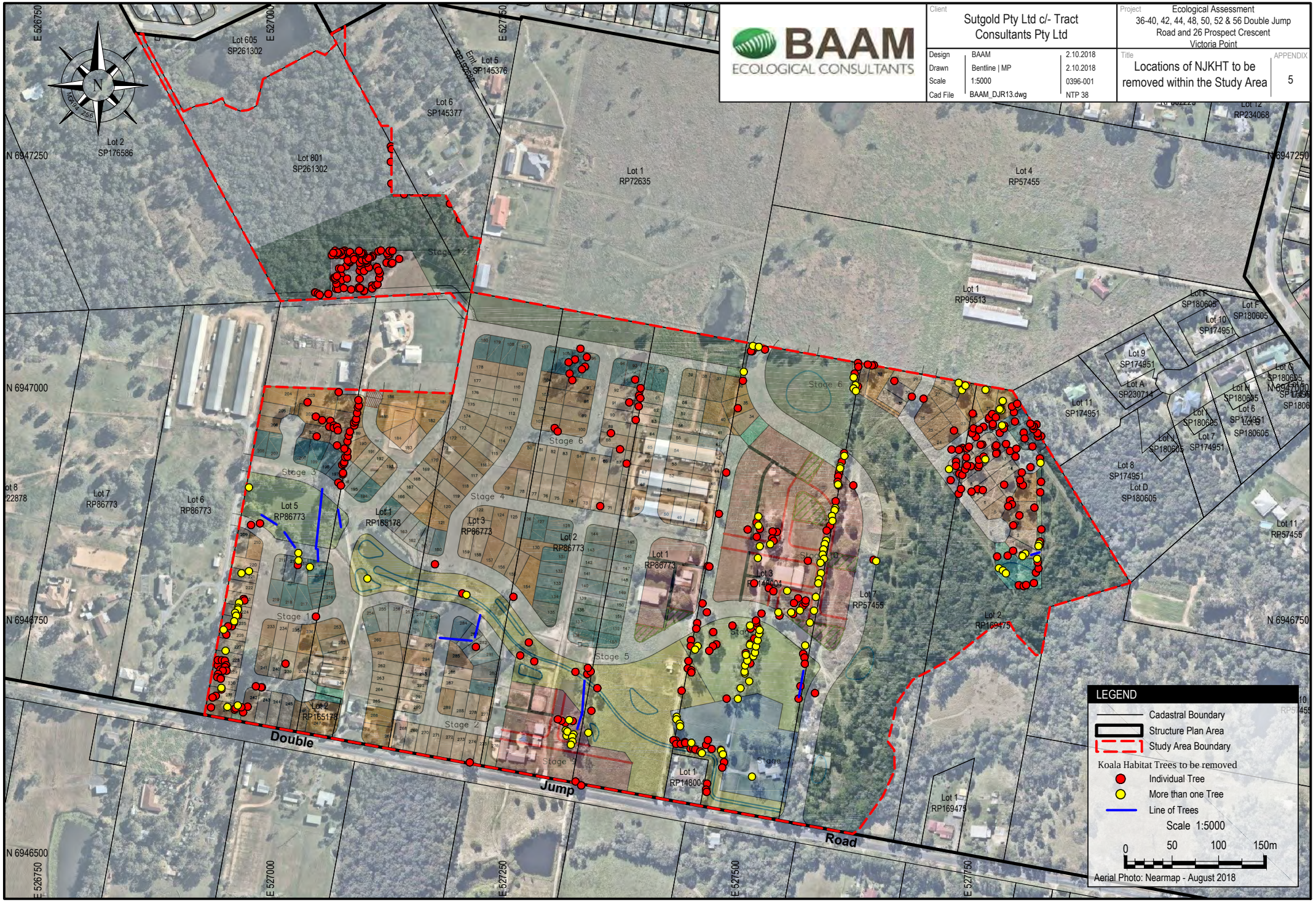
APPENDIX 5
Locations of NJKHT within the study Area



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APPENDIX 6
Fauna survey results and assessment of likelihood of occurrence of unrecorded species within the VPSPA

Victoria Point Structure Plan Area

Status under the *Nature Conservation Act 1992* (Queensland); V = Vulnerable; SL = Special Least Concern; LC = Least Concern; I = Introduced

Likelihood of occurrence categories: Known - from site surveys (BAAM, other consultancies, and public databases), species recorded onsite; **Expected** – species not known to occur onsite but the site is within the known range of the species, potentially suitable habitat is present and there are either database records for the local region or knowledge of the species occurrence suggests it may occur as a resident or visitor; means 'high potential' or good habitat is present but no species were observed onsite; **Potential**– the site is within the known range of the species and potentially suitable habitat is present but there are no database records for the local region and/or it is a rare, erratic or poorly known species; means 'low potential' or habitat for species is not definitive; **Unlikely**– no suitable habitat present and/or the site is outside of the known range of the species.

Scientific Name	Common Name	Status	Occurrence	Comments
Amphibians				
Limnodynastes tasmaniensis	spotted grassfrog	LC	Unlikely	Not recorded onsite. This species is uncommon in the Redlands and is unlikely to occur on the site.
Limnodynastes terraereginae	scarlet sided pobblebonk	LC	Known	Was recorded onsite across several lots. Primarily associated with vegetated areas and dams/ pondage habitats.
Platyplectrum ornatum	ornate burrowing frog	LC	Known	Species was not found breeding onsite. Several individuals were removed from pitfall traps within the western portions of the study area. Suitable habitats present and the species is known from surrounding landscape
Limnodynastes peronii	striped marshfrog	LC	Known	Common across the site primarily in association with waterways and wetland habitats
Adelotus brevis	tusked frog	V	Potential	Was not recorded despite targeted surveys in ideal conditions. Likely to be associated with the main creek lines and potentially farm dams where more permanent water is present
Pseudophryne raveni	copper backed broodfrog	LC	Potential	Known in local landscape and suitable habitat within the site. Was not recorded during targeted surveys.
Crinia parinsignifera	beeping froglet	LC	Known	A common local species which is known from the site and is expected to be present in several locations.
Mixophyes fasciolatus	great barred frog	LC	Potential	The study area has very limited habitats. The species may occur within the larger creek lines and waterways. The proposed land uses will not remove this species habitats.
Pseudophryne coriacea	red backed broodfrog	LC	Potential	Some local records and potential to occur within waterways and drainage lines. It should be noted these records are most likely *Pseudophryne raveni* which was once the same species.
Crinia signifera	clicking froglet	LC	Known	A common local species which has been recorded onsite in the central and eastern portions of the lands. It is expected to be present in several locations around the site.
Uperoleia fusca	dusky gungan	LC	Unlikely	Low likelihood of the species being present in the local landscape
Crinia tinnula	wallum froglet	V	Unlikely	No suitable habitat within or around the study area. This species does not occur within the study area.
Pseudophryne major	great brown broodfrog	LC	Unlikely	Low likelihood of this species in the local landscape. If present it will be associated with the riparian waterways and associated gully lines.

Scientific Name	Common Name	Status	Occurrence	Comments
Litoria nasuta	striped rocketfrog	LC	Potential	May occur within the waterways and drainage lines on and adjoining the site. Not recorded despite targeted frog surveys.
Litoria dentata	bleating treefrog	LC	Expected	Suitable habitat is present, pondage areas and waterways most likely areas of value.
Litoria rubella	ruddy treefrog	LC	Known	Occurs across the site and was recorded from dams, drainage lines and calling from structures.
Litoria caerulea	common green treefrog	LC	Known	Known. Expected to occur across the site and local landscape particularly in association with dwellings and wetland habitats.
Litoria gracilenta	graceful treefrog	LC	Known	Common across the site and particularly those areas where vegetated portions and suitable breeding locations coincide.
Litoria latopalmata	broad palmed rocketfrog	LC	Known	Recorded calling in flooded habitats and pondage areas within Little Eprapah Creek corridor and within the structure plan area. . Expected to occur across the study site in suitable habitats.
Litoria fallax	eastern sedgefrog	LC	Known	Common across the site and found calling from dams and adjacent waterways and drainage lines.
Litoria peronii	emerald spotted treefrog	LC	Potential	This species was recorded calling nearby in Springacre Road. Not found onsite despite ideal survey conditions. Could occur within the wetter portions of the site particularly where melaleuca habitats coincide with the major waterways.
Rhinella marina	cane toad	I	Known	Occurs across and throughout the site.
Reptiles				
Diporiphora australis	tommy roundhead	LC	Potential	Low potential to occur. If present it would be restricted to the more wooded areas.
Intellagama lesueurii	eastern water dragon	LC	Known	Recorded. Species is present within the water storages and waterways.
Morelia spilota	carpet python	LC	Expected	May occur within any habitats particularly the wooded areas.
Dendrelaphis punctulatus	green tree snake	LC	Known	Recorded in the core habitats in the western portions of the lands. This species is expected to occur across the site.
Tropidonophis mairii	freshwater snake	LC	Expected	In association with adjoining creeks
Boiga irregularis	brown tree snake	LC	Potential	In wooded areas across the site
Nebulifera robusta	robust velvet gecko	LC	Potential	In wooded areas across the site
Vermicella annulata	bandy-bandy	LC	Potential	In wooded areas across the site
Pseudechis porphyriacus	red-bellied black snake	LC	Potential	In association with adjacent riparian habitats
Cryptophis nigrescens	eastern small-eyed snake	LC	Potential	In wooded areas across the site
Cacophis krefftii	dwarf crowned snake	LC	Unlikely	In wooded areas across the site
Hemiaspis signata	black-bellied swamp snake	LC	Potential	In association with adjacent riparian habitats
Cacophis harriettae	white-crowned snake	LC	Expected	In wooded areas across the site
Demansia psammophis	yellow-faced whipsnake	LC	Known	Known. This species is present onsite and is expected to move across the entire study area.
Heteronotia binoei	Bynoe's gecko	LC	Known	Known. This species is primarily associated with the woodland habitats.
Hemidactylus frenatus	house gecko	I	Known	Recorded. This introduced species is known to occur on several lots across the study area in association with the dwellings.

Scientific Name	Common Name	Status	Occurrence	Comments
Lialis burtonis	Burton's legless lizard	LC	Potential	In wooded areas across the site
Ctenotus taeniolatus	copper-tailed skink	LC	Known	Known. A wide ranging species typically associated with the more vegetated portions of the site.
Lampropholis delicata	dark-flecked garden sunskink	LC	Known	This species is common across the site
Calyptotis scutirostrum	scute-snouted calyptotis	LC	Known	Recorded within the bushland portions of the study area.
Cyclodomorphus gerrardii	pink-tongued lizard	LC	Potential	In wooded areas across the site
Cryptoblepharus pulcher pulcher	elegant snake-eyed skink	LC	Known	In wooded areas and where large timber is present across the site.
Lygisaurus foliorum	tree-base litter-skink	LC	Known	Recorded. Associated with the more vegetated areas where suitable leaf litter is retained.
Tiliqua scincoides	eastern blue-tongue lizard	LC	Known	This species can occur across the local landscape.
Pogona barbata	bearded dragon	LC	Known	This species can occur across the local landscape.
Carlia vivax	tussock rainbow-skink	LC	Known	This species may occur across the local landscape where stands of vegetation are retained.
Concinnia martini	dark bar-sided skink	LC	Potential	In wooded areas across the site.
Eulamprus quoyii	eastern water skink	LC	Potential	In waterways and wetter vegetated areas. Site.
Concinnia tenuis	bar-sided skink	LC	Potential	In wooded areas across the site.
Varanus varius	lace monitor	LC	Expected	Known to occur within the structure plan area primarily in association with the vegetated areas. Expected to occasion the wooded areas and larger trees across the site
Birds				
Acanthiza reguloides	buff-rumped thornbill	LC	Potential	Could occur within the more forested portions of the site and adjoining waterways.
Gerygone olivacea	white-throated gerygone	LC	Known	Associated with the bushland habitats and recorded within Little Eprapah Creek corridor and the nearby vegetated habitats
Sericornis frontalis	white-browed scrubwren	LC	Known	Present within the denser vegetated portions of Little Eprapah Creek and Moogurrapum Creek. Expected to have more coverage upon establishment of proposed corridors.
Acanthiza pusilla	brown thornbill	LC	Expected	Expected to occasionally frequent the more vegetated portions of the site.
Acanthiza chrysorrhoa	yellow-rumped thornbill	LC	Potential	Associated with the bushland habitats
Smicrornis brevirostris	weebill	LC	Potential	Could occur where suitable forested vegetation and midstorey habitats are retained
Acanthiza lineata	striated thornbill	LC	Potential	Could occur where suitable woodland habitats are retained
Accipiter novaehollandiae	grey goshawk	LC	Potential	Could occasion the site in search of prey, unlikely to be a regular resident.
Accipiter cirrocephalus	collared sparrowhawk	LC	Potential	Could occasion the site in search of prey, unlikely to be a regular resident.
Haliaeetus leucogaster	white-bellied sea-eagle	LC	Unlikely	May occur over the site but is unlikely to use the extant habitats for foraging or nesting purposes.
Haliastur sphenurus	whistling kite	LC	Known	Occurs over and around the site. A wide ranging species.
Aviceda subcristata	Pacific baza	LC	Known	Recorded within the bushland habitats and vegetated portions of the study area. Primarily associated with the woodland habitats.

Scientific Name	Common Name	Status	Occurrence	Comments
Accipiter fasciatus	brown goshawk	LC	Expected	Could occur where suitable woodland habitats are retained. Species was observed nearby within the bushland habitats at rear of Brookland Drive
Lophoictinia isura	square-tailed kite	LC	Unlikely	May visit the larger bushland habitats in the local landscape and along waterways. Unlikely within the stage 1 habitats.
Circus approximans	swamp harrier	LC	Known	Recorded in the central portions of the structure plan area. This species may venture across the pastoral areas and drainage lines.
Pandion cristatus	eastern osprey	SL	Unlikely	No suitable habitats onsite
Elanus axillaris	black-shouldered kite	LC	Known	Recorded utilising the open pastoral areas. The open portions of the local landscape are suitable for hunting. This species could nest within vegetated areas.
Circus assimilis	spotted harrier	LC	Unlikely	Little to no suitable habitat
Haliastur indus	brahminy kite	LC	Potential	Expected to occur flying over the site – though only low potential to utilise the extant habitats
Aquila audax	wedge-tailed eagle	LC	Potential	Expected to occur flying over the site – though only low potential to utilise the extant habitats other than as occasional hunting options are identified.
Acrocephalus australis	Australian reed-warbler	LC	Potential	Low potential to occur. Primarily if land is left unmanaged to allow suitable cover to establish. Little to no suitable habitat onsite
Aegotheles cristatus	Australian owlet-nightjar	LC	Potential	There are suitable hollow bearing trees and wooded portions onsite. Was not recorded during spotlighting surveys.
Ceyx azureus	azure kingfisher	LC	Potential	Only within the main waterway habitats.
Dendrocygna arcuata	wandering whistling-duck	LC	Known	Observed feeding in pastoral areas nearby existing dams. Expected to occasion the larger dams and associated habitats.
Anas castanea	chestnut teal	LC	Potential	May occur within the Dams and associated habitats
Anas gracilis	grey teal	LC	Potential	May occur within the Dams and associated habitats
Aythya australis	hardhead	LC	Likely	May occur within the Dams and associated habitats
Anas superciliosa	Pacific black duck	LC	Known	A regularly recorded species within the suitable dams and associated habitats
Chenonetta jubata	Australian wood duck	LC	Known	Common across the open areas and local landscape. The site provides suitable habitats for feeding and potential to breed within the hollow bearing trees. Species is common across the local landscape.
Anhinga novaehollandiae	Australasian darter	LC	Potential	This species is known from the wider structure plan area but not recorded within stage 1. May associate with the waterways and dams for foraging purposes.
Anseranas semipalmata	magpie goose	LC	Potential	Waterways, open grasslands and dams for foraging purposes. Unlikely to breed onsite. Has been observed flying over the wider structure plan area.
Hirundapus caudacutus	white-throated needletail	SL	Expected	This aerial species will occur over the site.
Apus pacificus	fork-tailed swift	SL	Potential	This primarily aerial species may occur over the site.
Egretta novaehollandiae	white-faced heron	LC	Known	Known. This species is regularly present onsite and visitation is for foraging purposes. Unlikely to breed onsite.
Bubulcus ibis	cattle egret	LC	Known	Occurs in association with domestic stock within the open pastoral areas across the site if/where domestic stock are present. .
Ardea intermedia	intermediate egret	LC	Potential	Potential to occur within waterways, wetland

Scientific Name	Common Name	Status	Occurrence	Comments
				habitats and dams.
Egretta garzetta	little egret	LC	Known	Occurs within waterways, and dams.
Botaurus poiciloptilus	Australasian bittern	LC	Unlikely	Little to no suitable habitats present within the VPSP area.
Nycticorax caledonicus	nankeen night-heron	LC	Potential	Potential to occur within waterways, and dams. Not roosting onsite.
Cracticus tibicen	Australian magpie	LC	Known	Common across the site and local landscape.
Cracticus torquatus	grey butcherbird	LC	Known	Common across the site where the more vegetated portions are present.
Cracticus nigrogularis	pied butcherbird	LC	Known	Common across the site
Strepera graculina	pied currawong	LC	Potential	May occur within the study area though not recorded onsite.
Burhinus grallarius	bush stone-curlew	LC	Potential	Suitable habitats are present and the species is known form the local landscape.
Cacatua galerita	sulphur-crested cockatoo	LC	Known	Recorded. Known across the study area and observed regularly feeding on pastoral weeds. Expected to occasion habitats across the site and may breed onsite.
Calyptorhynchus banksii	red-tailed black-cockatoo	LC	Unlikely	Not known in local area.
Cacatua tenuirostris	long-billed corella	LC	Expected	Suitable habitats are present and the species occurs in the local landscape.
Eolophus roseicapilla	galah	LC	Known	Recorded breeding onsite within Lot 22. Species has been observed across stage 1.
Cacatua sanguinea	little corella	LC	Expected	Suitable habitats are present
Calyptorhynchus funereus	glossy black-cockatoo	LC	Potential	Potential to occur as suitable feeding resources are present. No evidence of their feeding has been recorded onsite despite targeted searches.
Lalage leucomela	varied triller	LC	Potential	Not recorded within Stage 1 but known from wider structure plan area. This species is associated with the more vegetated portions of the local landscape.
Coracina lineata	barred cuckoo-shrike	LC	Unlikely	Not known in local landscape.
Lalage tricolor	white-winged triller	LC	Unlikely	Not known in local landscape.
Coracina novaehollandiae	black-faced cuckoo-shrike	LC	Known	Common across the local landscape.
Coracina tenuirostris	cicadabird	LC	Known	Known. This species is restricted to the more vegetated portions and primary corridors. A seasonal visitor during summer months.
Vanellus miles	masked lapwing	LC	Known	Common in the open grassland portions.
Ephippiorhynchus asiaticus	black-necked stork	LC	Unlikely	Wetland and dams have low value for this species.
Cisticola exilis	golden-headed cisticola	LC	Expected	Where grassland habitats are not mown or reduced by presence of stock.
Climacteris affinis	white-browed treecreeper	LC	Potential	Known from the tributary of Moogurrapum Creek in the eastern portions of the Structure Plan area. This species will be restricted to the larger vegetated areas.
Phaps chalcoptera	common bronzewing	LC	Potential	May occur onsite within a variety of woodland habitats.
Chalcophaps indica	emerald dove	LC	Potential	Potential as a migrant during movement through the landscape. Little to no direct habitat values onsite.
Geopelia humeralis	bar-shouldered dove	LC	Known	Associated with the wooded portions of the site.
Macropygia amboinensis	brown cuckoo-dove	LC	Potential	Most likely along the larger waterways and wooded portions.
Streptopelia	spotted dove	I	Known	Across the site.

Scientific Name	Common Name	Status	Occurrence	Comments
chinensis				
Columba livia	rock dove	I	Known	Occurs in the more open areas.
Geopelia striata	peaceful dove	LC	Potential	Known from the more vegetated areas and adjoining open habitats in the eastern portions of the Structure Plan area.
Ocyphaps lophotes	crested pigeon	LC	Known	Across the site
Eurystomus orientalis	dollarbird	LC	Known	Recorded utilising the central portions of the study are and within the adjoining Little Eprapah Creek corridor. Expected to occur across the site, and potential breeding in the larger hollow bearing trees.
Corvus orru	Torresian crow	LC	Known	Common across the site
Cacomantis flabelliformis	fan-tailed cuckoo	LC	Known	Within the wooded portions of the study area and adjoining creek corridors.
Centropus phasianinus	pheasant coucal	LC	Known	Common across the local landscape. More likely within the vegetated portions and waterways.
Cacomantis variolosus	brush cuckoo	LC	Potential	Potential to occur within the more vegetated portions and Little Eprapah Creek.
Eudynamys orientalis	eastern koel	LC	Expected	Summer visitor within the more vegetated portions and waterways.
Chalcites minutillus barnardi	little bronze-cuckoo	LC	Potential	Most likely along the larger waterways and wooded portions.
Chalcites lucidus	shining bronze-cuckoo	LC	Potential	Most likely along the larger waterways and wooded portions.
Chalcites basalis	Horsfield's bronze-cuckoo	LC	Potential	Most likely along the larger waterways and wooded portions.
Scythrops novaehollandiae	channel-billed cuckoo	LC	Known	A summer vagrant, that is a wide ranging species that can utilise the entire study area.
Cacomantis pallidus	pallid cuckoo	LC	Potential	A summer vagrant, which may irregularly occur on or nearby the site.
Dicrurus bracteatus	spangled drongo	LC	Known	Present within and across all vegetated areas.
Neochmia temporalis	red-browed finch	LC	Known	Associated with the waterways and wetter portions of the study area. The creek corridors are the core habitats.
Neochmia modesta	plum-headed finch	LC	Unlikely	Not known in local landscape
Taeniopygia bichenovii	double-barred finch	LC	Known	This species can occur across the local landscape particularly where grassland and ground vegetation is dense and grasses hold seeds.
Eurostopodus mystacalis	white-throated nightjar	LC	Potential	Not known from the site. May occur within the wooded area and associated habitats
Falco peregrinus	peregrine falcon	LC	Potential	May occasion the site in search of prey.
Falco berigora	brown falcon	LC	Expected	May occasion the site in search of prey.
Falco longipennis	Australian hobby	LC	Known	Suitable habitats across the site
Falco cenchroides	nankeen kestrel	LC	Potential	Suitable habitats across the site
Todiramphus sanctus	sacred kingfisher	LC	Known	Woodland and waterways
Dacelo novaeguineae	laughing kookaburra	LC	Known	Occurs across the site and local landscape.
Todiramphus macleayii	forest kingfisher	LC	Potential	Within the larger vegetated portions
Petrochelidon nigricans	tree martin	LC	Potential	Across the site
Cheramoeca leucosterna	white-backed swallow	LC	Potential	Low potential to be present in the local landscape. Would utilise the open habitats and drainage lines across the site.

Scientific Name	Common Name	Status	Occurrence	Comments
Hirundo neoxena	welcome swallow	LC	Known	Common across the site particularly the open pastoral areas.
Petrochelidon ariel	fairy martin	LC	Known	Relatively common within the site and surrounds.
Irediparra gallinacea	comb-crested jacana	LC	Potential	The dams are primarily too small and lack sufficient waterlilies for this species to occur
Malurus cyaneus	superb fairy-wren	LC	Expected	Likely within the waterways and vegetated portions
Malurus lamberti	variegated fairy-wren	LC	Known	Known. This species is has been observed in several locations within and immediately adjoining the study area.
Malurus melanocephalus	red-backed fairy-wren	LC	Known	Relatively common within the vegetated areas where denser mid-storey is present.
Megalurus timoriensis	tawny grassbird	LC	Potential	Low potential due to existing land use and stoic limiting the height and cover of grassland habitats
Alectura lathami	Australian brush-turkey	LC	Known	Known. This common species is expected to use a variety of habitats onsite.
Lichmera indistincta	brown honeyeater	LC	Known	Present across the site where suitable vegetation exists.
Melithreptus lunatus	white-naped honeyeater	LC	Potential	Some local records and limited suitable habitats present.
Philemon corniculatus	noisy friarbird	LC	Known	Regular visitor in the local area. Known from across the VPSP area.
Manorina melanocephala	noisy miner	LC	Known	Present across the VPSP area.
Myzomela sanguinolenta	scarlet honeyeater	LC	Known	Winter visitor to the more intact woodland areas and melaleuca portions.
Philemon citreogularis	little friarbird	LC	Expected	The wooded portions have potential for this species to occur
Anthochaera chrysoptera	little wattlebird	LC	Potential	Some local records and suitable habitats present
Entomyzon cyanotis	blue-faced honeyeater	LC	Known	Common across the site and local landscape
Caligavis chrysops	yellow-faced honeyeater	LC	Known	Known. A seasonal/intermittent visitor Expected to be commonly present onsite and across the local landscape.
Meliphaga lewinii	Lewin's honeyeater	LC	Known	Known. Associated with the more vegetated portions and particularly the Creek Corridors.
Acanthorhynchus tenuirostris	eastern spinebill	LC	Expected	Seasonal visitor in response to localised flowering events.
Plectorhyncha lanceolata	striped honeyeater	LC	Known	Irregular visitor onsite and surrounds. Heard calling along Little Eprapah Creek.
Merops ornatus	rainbow bee-eater	LC	Known	Regularly present in the local landscape.
Grallina cyanoleuca	magpie-lark	LC	Known	Common across the site
Monarcha melanopsis	black-faced monarch	SL	Expected	Primarily within the riparian areas along Little Eprapah Creek and associated denser vegetation.
Myiagra inquieta	restless flycatcher	LC	Potential	Vegetated portions particularly Little Eprapah Creek.
Symposiachrus trivirgatus	spectacled monarch	SL	Unlikely	The site and surrounds lack the denser wetter rainforest elements preferred by this species.
Myiagra rubecula	leaden flycatcher	LC	Expected	Known in local area and suitable habitats present.
Anthus novaeseelandiae	Australasian pipit	LC	Known	Known. Suitable open habitats, pastoral areas, present within and across the local landscape.
Dicaeum hirundinaceum	mistletoebird	LC	Known	Regularly recorded in local landscape. Wooded portions of higher value.
Daphoenositta chrysoptera	varied sittella	LC	Potential	Would only utilise the larger wooded portions of the study area.
Oriolus sagittatus	olive-backed oriole	LC	Expected	Common in local area and suitable habitats exists

Scientific Name	Common Name	Status	Occurrence	Comments
Sphecotheres vieilloti	Australasian figbird	LC	Known	Across the site within the vegetated portions.
Pachycephala pectoralis	golden whistler	LC	Known	This species is known from the Moogurrapum riparian habitats.
Colluricincla megarhyncha	little shrike-thrush	LC	Potential	Woodland habitats and riparian areas.
Pachycephala rufiventris	rufous whistler	LC	Known	A locally common species within woodland and riparian habitats.
Colluricincla harmonica	grey shrike-thrush	LC	Known	Expected within the higher value woodland habitats and riparian areas.
Pardalotus punctatus	spotted pardalote	LC	Expected	Primarily within the denser vegetation and adjoining riparian habitats.
Pardalotus striatus	striated pardalote	LC	Known	Recorded calling in several locations where suitable wooded habitats are retained. .
Passer domesticus	house sparrow	I	known	Present within the VPSP area.
Microeca fascinans	jacky winter	LC	Potential	Very few local records and species not known in the area.
Eopsaltria australis	eastern yellow robin	LC	Known	Larger vegetated portions are of value. Recoded along Little Eprapah Creek and Moogurrapum Creeks.
Phalacrocorax sulcirostris	little black cormorant	LC	Known	Known. Likely within any of the waterways and dams
Microcarbo melanoleucos	little pied cormorant	LC	Potential	Waterways and Dams
Phalacrocorax carbo	great cormorant	LC	Unlikely	Low value habitats onsite
Phalacrocorax varius	pied cormorant	LC	Known	May occur within the larger dams
Coturnix ypsilophora	brown quail	LC	Known	Grassland and open woodland habitats.
Podargus strigoides	tawny frogmouth	LC	Known	This species may be present in most of the areas where vegetation is retained.
Poliocephalus poliocephalus	hoary-headed grebe	LC	Unlikely	Very low potential to occur due to small size of water bodies.
Podiceps cristatus	great crested grebe	LC	Unlikely	Very low potential to occur due to small size of water bodies.
Tachybaptus novaehollandiae	Australasian grebe	LC	Potential	May occur within the larger dams
Pomatostomus temporalis	grey-crowned babbler	LC	Unlikely	No recent records inn local area.
Platycercus eximius	eastern rosella	LC	Potential	Wide ranging species which could occur seasonally onsite.
Alisterus scapularis	Australian king-parrot	LC	Potential	Wide ranging species which could occur seasonally onsite.
Platycercus adscitus	pale-headed rosella	LC	Known	Regular visitor across the site This wide ranging species utilises a variety of habitats. .
Trichoglossus chlorolepidotus	scaly-breasted lorikeet	LC	Known	Wide ranging species which occurs regularly across the site.
Trichoglossus haematodus moluccanus	rainbow lorikeet	LC	Known	Wide ranging species which occurs regularly across the site.
Parvipsitta pusilla	little lorikeet	LC	Potential	Wide ranging species which would occur intermittently onsite.
Psophodes olivaceus	eastern whipbird	LC	Known	Primarily associated with the riparian and woodland areas of Little Eprapah Creek.
Sericulus chrysocephalus	regent bowerbird	LC	Unlikely	No suitable habitat
Porphyrio melanotus	purple swamphen	LC	Known	Regularly observed onsite. Primarily associated with dams and riparian areas.
Gallinula tenebrosa	dusky moorhen	LC	Known	Associated with dams and riparian areas.
Lewinia pectoralis	Lewin's rail	LC	Unlikely	May occur within riparian habitats and waterways. No suitable habitats within the Stage 1 area.

Scientific Name	Common Name	Status	Occurrence	Comments
Gallirallus philippensis	buff-banded rail	LC	Potential	May occur in the more densely vegetated and rank grassland areas particular along waterways.
Himantopus himantopus	black-winged stilt	LC	Potential	Could utilise dam's onsite – though low value as habitat.
Rhipidura leucophrys	willie wagtail	LC	Known	Present across the site
Rhipidura rufifrons	rufous fantail	SL	Expected	Seasonal visitor within the vegetated portions of the site and adjoining riparian habitats.
Rhipidura albiscapa	grey fantail	LC	Known	Present within the vegetated portions of Lot 22 and Little Eprapah Creek.
Ninox connivens	barking owl	LC	Unlikely	Not known in local landscape
Ninox strenua	powerful owl	V	Potential	May occasion the site in search of prey. No suitable roosting or breeding habitat present.
Ninox boobook	southern boobook	LC	Known	This nocturnal species is relatively common in local landscape.
Sturnus vulgaris	common starling	I	Potential	Not observed onsite but known in local landscape
Acridotheres tristis	common myna	I	Known	Common within the open areas and utilising hollow bearing trees for breeding.
Platalea regia	royal spoonbill	LC	Expected	Known in local landscape and suitable habitats present.
Platalea flavipes	yellow-billed spoonbill	LC	Potential	Could utilise dam's onsite – though low value as habitat.
Plegadis falcinellus	glossy ibis	SL	Potential	May visit the wetland portions onsite
Threskiornis molucca	Australian white ibis	LC	Known	Utilising the pastoral habitats across the site.
Threskiornis spinicollis	straw-necked ibis	LC	Known	This species will utilise the pastoral habitats.
Zosterops lateralis	silvereye	LC	Known	Recorded along Little Eprapah Creek and wooded habitats.
Turnix varius	painted button-quail	LC	Unlikely	No suitable habitat
Turnix maculosus	red-backed button-quail	LC	Unlikely	No suitable habitat
Tyto delicatula	eastern barn owl	LC	Potential	Could occur within the local landscape and may utilise the open habitats for hunting.
Tyto tenebricosa tenebricosa	sooty owl	LC	Unlikely	Not known in local landscape and no suitable habitat.
Mammals				
Acrobates pygmaeus	feathertail glider	LC	Unlikely	Little to no suitable habitat
Vulpes vulpes	red fox	I	Known	Evidence of visitation recorded. This species could occur anywhere onsite
Planigale maculata	common planigale	LC	Unlikely	Low value woodland habitats lacking size and structure. Likely excluded due to presence of predators.
Phascogale tapoatafa tapoatafa	brush-tailed phascogale	LC	Unlikely	A species which is present in larger bushland areas. Could occur onsite or within the adjoining riparian habitats.
Antechinus flavipes	yellow-footed antechinus	LC	Potential	Not trapped during targeted survey. Expected to occur in the wider landscape in larger more intact woodland and forest habitats.
Sminthopsis murina	common dunnart	LC	Unlikely	A species which is present in larger bushland areas and generally associated with intact bushland. Little to no suitable habitats within stage 1. .
Lepus europaeus	European brown hare	I	Known	Across the pastoral portions of the site.
Macropus giganteus	eastern grey kangaroo	LC	Unlikely	This common species is not known in local area and no evidence of visitation was recorded.
Wallabia bicolor	swamp wallaby	LC	Potential	Adjoining riparian habitats and vegetated

Scientific Name	Common Name	Status	Occurrence	Comments
				linkages. Not recorded onsite.
Macropus parryi	whiptail wallaby	LC	Unlikely	Not known in local area and no suitable habitats. Not recorded during site visits.
Macropus rufogriseus	red-necked wallaby	LC	Known	Can and does occur across the site.
Miniopterus australis	little bent-wing bat	LC	Potential	May forage across wooded areas
Miniopterus schreibersii oceanensis	eastern bent-wing bat	LC	Potential	May forage across wooded areas and nearby open areas.
Mormopterus norfolkensis	east coast freetail bat	LC	Potential	May forage across wooded areas and roost in hollows
Mormopterus lumsdenae	northern free-tailed bat	LC	Potential	Across the site
Tadarida australis	white-striped freetail bat	LC	Known	Present over the site during survey period. This species can forage across wooded areas, open pasture and urban environments.
Mormopterus ridei	eastern free-tailed bat	LC	Potential	May forage across wooded areas and roost in hollows
Mus musculus	house mouse	I	Known	Recorded. Would be present across the site.
Rattus rattus	black rat	I	Known	Recorded. Would be present across the site.
Rattus fuscipes	bush rat	LC	Potential	Low potential within the heavily wooded areas particularly riparian habitats along Little Eprapah Creek.
Rattus lutreolus	swamp rat	LC	Potential	Adjoining riparian habitats and swampy areas.
Hydromys chrysogaster	water rat	LC	Potential	Associated with creek systems. Would be restricted to Little Eprapah and Moogurrapum Creeks. .
Rattus norvegicus	brown rat	I	Potential	In heavily wooded areas
Ornithorhynchus anatinus	platypus	SL	Unlikely	In adjoining creek systems.
Perameles nasuta	long-nosed bandicoot	LC	Unlikely	Not known in local landscape.
Isoodon macrourus	northern brown bandicoot	LC	Known	Relatively common species across the local landscape and urban areas where suitable cover is retained. .
Petaurus breviceps	sugar glider	LC	Potential	In wooded habitats and tree hollows
Petaurus norfolcensis	squirrel glider	LC	Expected	In wooded habitats and tree hollows. Observed within roadside vegetation on Bunker road.
Trichosurus vulpecula	common brushtail possum	LC	Known	Mostly within the wooded areas but this species occurs across the site
Trichosurus caninus	short-eared possum	LC	Unlikely	Little to no suitable habitats.
Phascolarctos cinereus	koala	V	Known	In wooded areas supporting preferred feed trees
Pseudocheirus peregrinus	common ringtail possum	LC	Known	Across the site within vegetated areas.
Petauroides volans volans	southern greater glider	V	Unlikely	No suitable habitat. The site lacks suitable vegetation and habitats for this species to persist.
Pteropus scapulatus	little red flying-fox	LC	Expected	Seasonal visitor in response to flowering
Pteropus alecto	black flying-fox	LC	Known	Regular visitor in response to flowering
Pteropus poliocephalus	grey-headed flying-fox	LC	Expected	Seasonal visitation in response to flowering
Sus scrofa	pig	I	Potential	Although no evidence observed
Tachyglossus aculeatus	short-beaked echidna	SL	Potential	In wooded areas across the site

Scientific Name	Common Name	Status	Occurrence	Comments
Scoteanax rueppellii	greater broad-nosed bat	LC	Potential	In association with adjoining creek vegetation.
Chalinolobus nigrogriseus	hoary wattled bat	LC	Potential	May forage across wooded areas and roost in large dead trees
Myotis macropus	large-footed myotis	LC	Potential	May forage over adjacent creeks and hunt over existing dams.
Chalinolobus morio	chocolate wattled bat	LC	Potential	May forage across wooded areas and roost in hollows
Nyctophilus gouldi	Gould's long-eared bat	LC	Potential	May forage across wooded areas and roost in hollows
Scotorepens greyii	little broad-nosed bat	LC	Potential	May forage across wooded areas and roost in hollows
Chalinolobus gouldii	Gould's wattled bat	LC	Potential	May forage across wooded areas and roost in hollows

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Appendix 6.2: Ecological Assessment Report, 28 South

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Double Jump Road Residential Development

ECOLOGICAL ASSESSMENT REPORT IN SUPPORT OF A CONTROLLED ACTION REFERRAL

8 March 2024

DOCUMENT CONTROL

Project No.	2019-100
Project	Double Jump Road Development
Document	Controlled Action Referral Report
Client	Sutgold Pty Ltd

www.28south.com.au
28 South Environmental Pty Ltd

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1. Introduction

1.1. Purpose of this Report

28 South Environmental (**28 South**) has been engaged by SutGold Pty Ltd (**Proponent**) to advise on ecological and environmental planning matters in regard to the proposed development of a reconfiguration plan on Double Jump Road, Victoria Point, South-East Queensland (the **Proposed Action**). The development plan for the Double Jump Road Development is provided in **Attachment 1**.

The purpose of this report is to support a Controlled Action Referral (**CAR**) to be submitted to the Department of Climate Change, Energy, the Environment and Water (**DCCEEW**) to assist in determining if the Proposed Action should be deemed a Controlled Action under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**).

1.2. The Site

1.2.1. Locality

The Proposed Action is located in the Redlands City local government area, with Redlands City Council (**RCC**) being the local authority. The Proposed Action's local context, boundaries and constituent properties are shown in **Attachment 1** and **Figure 2**. The project area (referred to herein as the **Site**) extends over 37.9 hectares (ha), across five land parcels (as currently recognised), being:

- Lot 1 on RP86773
- Lot 2 on RP86773
- Lot 5 on SP293881
- Lot 23 on SP325035
- Lot 2 on RP165178.

1.2.2. Setting

The Proposed Action is bound by Double Jump Road to the south, situated within a pocket of larger rural and rural residential allotments. There are low density residential areas that occur to the north of the Site, which continue further northeast towards the centre of Victoria Point. Similar sized rural and rural residential properties exist to the east, south and west of the Site. The Site's more immediate setting, and its boundaries and features are shown by **Figure 1** and **Figure 2.**

Topographically, the Site slopes downwards in a west (40 m AHD) to east (10 m AHD) direction, at an average gradient of 4% (**Figure 2**).

The eastern boundary of Lot 23 coincides with an unnamed tributary of Moogurrapum Creek which flows into Moreton Bay approximately 2.2 kilometres (km) (straight line distance) north-east of the Site (**Figure 6**).

1.2.3. Land Use Planning Context

City Plan

The Site's land use planning intent is governed by RCC's *Redland City Plan 2018* ('the **City Plan**').

Following the commencement of the City Plan, Council commenced the preparation of a local plan for a future urban community in southwest Victoria Point. The local plan area is approximately 175 hectares and is situated between Bunker Road and Brendan Way in the north, Clay Gully Road and Cleveland-Redland Bay Road in the east, Double Jump Road in the south and Little Eprapah Creek in the west.

The southwest Victoria Point local plan area was included in the Emerging Community zone of the City Plan and the Urban Footprint of the South East Queensland Regional Plan (ShapingSEQ 2023), recognising its suitability for development as a new community following detailed local planning. The purpose of this designation is to ensure the development of the new community delivers a well-planned, attractive and walkable urban community with a range of infrastructure networks to service the new and wider community into the future.

The Site is situated in the southwest Victoria Point local plan area and is consequently zoned as Emerging Community.

Structure Plan

The Site is wholly located within the Victoria Point Structure Plan (**VPSP**) area. The VPSP is a developer led structure plan, prepared by Sutgold Pty Ltd in June 2018 as requested by Redland City Council as part of Reconfiguring a Lot development approval (ROL006166). The VPSP was formally adopted by Redland City Council in 2018.

The VPSP area is located in the south-west of Victoria Point and is bounded by Double Jump Road to the south, and existing residential and Cleaveland Redland Bay Road to the east. The VPSP illustrates conceptual land use, environmental, access and infrastructure opportunities, and sets a strategic framework for a new integrated residential community of approximately 4,500 residents to guide the future development of the area. The purpose of the VPSP was ensuring that planning of this area will only commence once there has been substantial uptake of the south east Thornlands and Kinross Road development areas and with this process now the Double Jump Road and Bunker Road developments will commence in western Victoria point.

South East Queensland Regional Plan context

The Site is located in the Regional Plan's *Urban Footprint*. This designation identifies land that can meet the region's urban development needs to 2031 and 2046. As stated by the Regional Plan, approximately 19,800 additional dwellings will be required to meet RCC's expected population growth and demographic change to 2031. The projections population by ShapingSEQ for 2046 is an increase of 49,800. This is majorly achieved through infill and

redevelopment in existing urban areas, the development of broad hectare land such as the VPLDA is essential for delivery of RCC's dwelling targets. The Proposed Action accords with the Regional Plan's vision for the Site (as expressed through VPLDA). The Proposed Action is also consistent with the Site's land use planning intent.

It is noted that Victoria Point has been identified as a Local Development Area for residential growth at a regional level since 2009. The Site and surrounds were identified in the *South East Queensland Regional Plan 2009 – 2031*(repealed SEQRP*)*.

1.3. The Proposed Action

1.3.1. Proposed Action Footprint

The Proposed Action entails the planned, logical and sequential expansion of existing urban areas into adjoining (cleared) farmland, and accords with broader planning direction established by the City Plan and VPSP.

The Proposed Action seeks to establish a residential subdivision, with provision of supporting services and functions, as follows:

- 294 single dwelling residential lots (121,460 m^2),
- Two medium density residential lots (27,583 m^2)
- Three conservation areas (combined 102,299 m^2), which will be rehabilitated, being: Conservation Area 1, Conservation Area 2 (East West Conservation Corridor) and Conservation Area 3.
- Two local parks (18,144 m^2)
- A local small business and retail centre (9,188 m^2)
- Multi-function spine (9,262 m^2) – pedestrian, cycle way and stormwater infrastructure
- Connecting roads throughout development (81,763 m^2).

The layout of the Proposed Action is shown in **Attachment 1**.

The Conservation Areas 1-3 will be rehabilitated to achieve High Value Bushland Habitat status. This rehabilitation will create an east-west corridor across the north of the development. This corridor provides a logical east-west connection corridor for fauna movement, and will contain an ephemeral overland flow path to Little Eprapah Creek (**Attachment 1**).

The two proposed local parks adjoin Conservation Areas and complement the primary habitat function of these areas (**Attachment 1**).

In addition to the designated Conservation Areas, individual trees will be retained within the development footprint, except where their removal is required to achieve the development intent and to deliver a safe space to live, work and play.

1.3.2. Construction Approach

The construction phase of the Proposed Action will entail the following steps:

- Clear and grub of vegetated components of the development footprint
- Civil groundworks to establish final land form
- Installation of erosion and sediment controls
- Installation of essential services and utilities, such as sewerage, stormwater, electricity, gas and communications
- Construction of roads and pavements, including installation of longitudinal and cross-drainage structures
- Subdivision of land into individual lots according to the approved design plan, including boundary markers and individual lot access
- Installation of landscaping features, community amenities (such as parks and recreational areas) and signage to enhance the appeal and functionality of the subdivision
- Construction of residential properties.

1.3.3. Development Timeframe

The following timeframes are currently targeted for each corresponding milestone:

- All approvals in place: end of 2025
- Commencement of operational works: beginning of 2026
- Plan sealing: end of 2027
- First residential occupancy: end of 2028
- Full occupancy of development: 2035.

2. Methods Used to Assess the Site's Ecological Values

2.1. Historic Disturbance

Historical aerial imagery of the Site is provided in **Table 1** showing the sequence of clearing and development of the Site over time.

Table 1. Historic Aerials

Date (Year)	Historic Aerial	Observation
1955		The Site is largely vegetated, except for approximately 2.7 ha of clearing that has occurred for small-scale agricultural use in the south of Lot 23 on SP325035.
1970		Almost the full balance of Lot 23 has been subject to clearing, with the retention of vegetated contour banks. The western two thirds of Lot 5 on SP293881 and the southern half of Lot 2 on RP86773 have also been cleared. Thinning of vegetation appears to have occurred throughout Lot 1 on RP86773. This image shows the first evidence of on-site dams having been established on Lot 5.

Date (Year)	Historic Aerial	Observation
1987		All lots that comprise the Site have been subject disturbance. Lot 23 retains the remnant vegetation in the north-west corner, as well as along the eastern lot boundary – the riparian corridor associated with the tributary of Moogurrapum Creek. Approximately 0.3 ha of remnant vegetation remains in the south-east corner of Lot 2. Land to the north and east of the Site has been largely cleared.
1997		Since 1987, the northern-western and north-eastern corners of Lot 23 have been cleared.

Date (Year)	Historic Aerial	Observation
2023		Regrowth vegetation is apparent across the eastern portion of Lot 23. Residential subdivision and construction has commenced to the immediate north of the Site. Development has also commenced on land to the east of Lot 23, on the other side of the creek.

2.2. Assessment of Flora and Vegetation Values

2.2.1. Database Searches and Shortlisting for Targeted Assessment

2.2.1.1. Vegetation

Pre-clear Vegetation Communities

Queensland Herbarium pre-clear regional ecosystem (**RE**) mapping shows that the Site historically would have accommodated three vegetation communities, across three different landzones. The three pre-clear REs are introduced and described in **Table 2.**

Table 2. Pre-clear regional ecosystems

Regional Ecosystem	Description
RE12.9-10.4	*Eucalyptus racemosa* subsp. *racemosa* woodland to open forest. Other species can include *Angophora leiocarpa*, *Eucalyptus seeana*, *E. siderophloia*, *Corymbia intermedia*, *E. tindaliae*, with *Lophostemon suaveolens*, *Melaleuca quinquenervia*, *E. tereticornis* common on lower slopes. Occurs on Cainozoic and Mesozoic sediments +/- remnant Tertiary surfaces. Not a Wetland.
RE 12.3.6	*Melaleuca quinquenervia* +/- *Eucalyptus tereticornis*, *Lophostemon suaveolens*, *Corymbia intermedia* open forest to woodland with a grassy ground layer dominated by species such as *Imperata cylindrica*. *Eucalyptus tereticornis* may be present as an emergent layer. *Eucalyptus*

Regional Ecosystem	Description
	seeana may also occur in this ecosystem to the south and east of Brisbane. Occurs on Quaternary floodplains and fringing drainage lines in coastal areas. Palustrine.
RE 12.12.14	Woodland to open forest characterised by *Eucalyptus racemosa* subsp. *racemosa*, *Angophora woodsiana*, *Corymbia gummifera*, *Syncarpia* spp., *Eucalyptus helidonica* or *E. acmenoides* and *Lophostemon confertus*. Other canopy species include *Corymbia trachyphloia* subsp. *trachyphloia*, *E. carnea*, *E. tindaliae*, *E. exserta*, *E. resinifera* and *E. microcorys*. Usually occurs on rocky near coastal areas on Mesozoic to Proterozoic igneous rocks. Not a Wetland.

Current Vegetation Communities

The Queensland Government's Vegetation Management Regional Ecosystem Map shows the riparian corridor associated with the unnamed tributary of Moogurrapum Creek on Lot 23 as being Category B (remnant vegetation) that is least concern under the *Vegetation Management Act 1999* (Qld) (**Attachment 2**). This vegetation community is mapped as being RE 12.3.6 (**Table 2**).

The remainder of the Site is mapped as Category X vegetation, being areas that are not generally regulated by Queensland's vegetation management laws.

Threatened Ecological Communities

The Protected Matters Search Tool (**PMST**) identified five MNES Threatened Ecological Communities (**TEC**s) as potentially occurring within 2 km of the Site (**Attachment 3**). The five TECs that were listed in the PMST report are summarised in **Table 3**.

Table 3. TECs potentially within 2 km of the Site

TEC	Threatened Status	Likelihood of Occurrence
Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and Southeast Queensland ecological community	Endangered	Likely to occur
Coastal Swamp Sclerophyll Forest of New South Wales and Southeast Queensland	Endangered	Likely to occur
Lowland Rainforest of Subtropical Australia	Critically Endangered	May occur
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Likely to occur
Subtropical eucalypt flood plain forest and woodland of New South Wales North Coast and Southeast Queensland Bioregions	Endangered	Likely to occur

2.2.1.2. Threatened flora

A search of the PMST illustrates the potential or likely occurrence of flora MNES within a 2 km search radius of the Site (**Attachment 3**Error! Reference source not found.). This desktop assessment is assisted through reference to the Queensland Department of Environment and Science (**DES**) Wildlife Online database, which provides verified records for some of the identified MNES (**Attachment 4**).

The PMST identified 18 threatened flora species as potentially occurring within 2 km of the Site. The 18 species that were listed in the PMST report are summarised in **Table 4**.

Table 4. Threatened flora potentially within 2 km of the Site

Flora Species		Threatened Status	Likelihood of Occurrence
Acronychia littoralis	Scented Acronychia	Endangered	May occur
Arthraxon hispidus	Hairy-joint Grass	Vulnerable	Likely to occur
Baloghia marmorata	Marbled Balogia	Vulnerable	May occur
Bosistoa transversa	Three-leaved Bosistoa	Vulnerable	Likely to occur
Corchorus cunninghamii	Native Jute	Endangered	Likely to occur
Cryptocarya foetida	Stinking Laurel	Vulnerable	May occur
Cryptostylis hunteriana	Leafless Tongue-orchid	Vulnerable	May occur
Cupaniopsis shirleyana	Wedge-leaf Tuckeroo	Vulnerable	May occur
Endiandra floydii	Floyd's Walnut	Endangered	Likely to occur
Macadamia integrifolia	Queensland Nut Tree	Vulnerable	Likely to occur
Macadamia tetraphylla	Macadamia Nut	Vulnerable	May occur
Notelaea lloydii	Lloyd's Olive	Vulnerable	May occur
Phaius australis	Lesser Swamp-orchid	Endangered	Likely to occur
Planchonella eerwah	Shiny-leaved Condoo	Endangered	Likely to occur

Flora Species		Threatened Status	Likelihood of Occurrence
Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Likely to occur
Rhodomyrtus psidioides	Native Guava	Critically Endangered	Likely to occur
Samadera bidwillii	Quassia	Vulnerable	Likely to occur
Thesium australe	Austral Toadflax	Vulnerable	May occur

The Queensland Government maintains Protected Plants Trigger Mapping as an indication of where threatened flora, protected under the *Nature Conservation Act 1992* (Qld), may occur. There is no Protected Plants Trigger Mapping within the Site.

2.2.2. Flora and Vegetation Surveys

Various vegetation and flora surveys have been conducted across the Site since September 2015, conducted by BAAM Ecological Consultants (**Attachment 5**) and 28 South Environmental (including affiliates). Surveys have been conducted for a variety of purposes across this period and, in some instances, included land beyond the bounds of the Site as it is currently nominated. Such surveys have included:

- Designation of plant communities (generally based on Queensland herbarium requirements)
- Identification of flora species
- General “ground truthing” of vegetation communities
- Full tree survey, using differential GPS to <1 m accuracy (2020-2021).

2.3. Assessment of Fauna Values

2.3.1. Database Searches and Shortlisting for Targeted Assessment

A search of the PMST reveals the potential or likely occurrence of fauna MNES within a 2 km search radius of the Site (**Attachment 3**).

The PMST identified 73 fauna threatened species and 64 migratory species as potentially occurring within 2 km of the Site. Subsequent review of the DES Wildlife Online database confirmed records of two MNES threatened fauna within 2 km of the Site, being:

- Koala (*Phascolarctos cinereus*) - Endangered
- White-throated needletail (*Hirundapus caudacutus*) – Vulnerable, Marine, Migratory

The DES Wildlife Online database report provides no record of grey-headed flying fox (*Pteropus poliocephalus*) within 2 km of the Site. However, RE 12.3.6 is known to include *Eucalyptus* and related genera which are considered a food source for grey-headed flying fox when in blossom.

2.3.2. Fauna Survey

Various vegetation and flora surveys have been conducted across the Site at regular intervals since September 2015, conducted by BAAM Ecological Consultants (**Attachment 5**) and 28 South Environmental (including affiliates). Surveys have been conducted for a variety of purposes across this period and, in some instances, included land beyond the bounds of the Site as it is currently nominated.

- 2015-2018:
  - Diurnal searches (general)
  - General and targeted spotlighting (two nights)
  - Bird survey (four mornings, 1.5 hours per day)
  - Elliot traps (four nights)
  - Targeted feed tree search
  - Targeted ground search
  - Electronic bait detectors
  - Opportunistic records.
- 2020-2021:
  - Diurnal searches (general)
  - GPS location of non-juvenile koala habitat trees (**NJKHT**)
  - Opportunistic records
- 2023:
  - Diurnal searches (general)
  - General and targeted spotlighting
  - Camera trapping
  - Opportunistic records.

The purpose and description of each survey technique is provided in **Table 5**.

Table 5. Field Survey Techniques

Technique	Purpose	Description
Diurnal Searches	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list.	This involves intensive investigation of ground layer (under logs, rocks and leaf litter), low vegetation (under bark and in tree stumps) for amphibians, reptiles, bats and animal signs, e.g. scats, owl pellets, remains and tracks.
Spotlighting	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list.	Undertaken on foot through representative habitats, at a leisurely pace using hand-held spotlights and/or head torches. This method samples nocturnal mammals (flying, arboreal and terrestrial), birds (owls and nightjars), reptiles (geckos) and frogs.
Bird Surveys	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list.	Bird species are recorded via their call, or visual observation. Surveys were conducted from dawn to early morning, dusk to early evening and during the night for nocturnal species.
Elliot Traps	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list.	25 baited Elliot 'A' and 2 baited Elliot 'B' traps were laid on ground transects 10 or more meters apart. Trap placement is influenced by vegetation diversity, the size and shape of habitat patches and by naturally occurring features such as logs, rock outcrops, tree bases and clumping vegetation.
Targeted Feed Tree Search	To determine the extent and distribution of utilisation of an area by glossy black-cockatoos and koala.	This involves intensive investigation of the site for isolated specimens and groves of feed trees for glossy black cockatoo and/or koala.
Targeted Ground Search	To determine the presence of significant species, including cryptic or rare species.	This involves intensive investigation of ground layer (under logs, rocks and leaf litter), low vegetation (under bark and in tree stumps), and other habitat features.
Targeted Spotlighting	To determine the presence of significant species, including cryptic or rare species such as greater glider.	Undertaken on foot through representative habitats, at a leisurely pace using hand-held spotlights and/or head torches to search for target fauna. May include intermittent nocturnal voice playback to elicit a response from target species.

Technique	Purpose	Description
Electronic Bat Detection	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list, as well as the presence of significant microbat species.	Survey involves walking a predetermined transect, stopping to record calls detected, and remote/stationary detection at specific locations such as stag trees.
Opportunistic records	To supplement the systematic survey results and provide a more comprehensive listing of fauna present	Covers all other fauna observations outside of systematic and targeted survey methodologies.

2.4. Other MNES

The Moreton Bay Ramsar wetland extends inland from the coastline, up Moogurrapum Creek. The Site is located approximately 850 m, direct line distance, from the most inland point of the Moreton Bay Ramsar wetland.

The Proposed Action is not expected to result in:

- Destruction or substantial modification of the wetland;
- Substantial or measurable change in the hydrological regime of the wetland;
- Impact to the habitat or lifecycle of native species that occupy the wetland;
- Substantial and measurable change in the water quality of the wetland
- Invasive species that is harmful to the ecological character of the wetland.

Consequently, the Proposed Action is not expected to result in a significant impact to the Moreton Bay Ramsar wetland, per the Significant impact guidelines 1.1 (DoE, 2013). Therefore, the potential impacts of the Proposed Action on the Ramsar wetland are not considered any further in this Report.

There are no other MNES places, properties or areas within proximity to the Site.

3. Findings of the Site Assessment

3.1. Flora Values

3.1.1. Vegetation Communities

Vegetation surveys of the Site determined that the remnant vegetation associated with the tributary of Moogurrapum Creek, mapped under the State's RE mapping as 12.3.6 (**Attachment 2**), is better described as RE 12.3.11, being *Eucalyptus tereticornis* +/- *Eucalyptus siderophloia*, *Corymbia intermedia* open forest on alluvial plains usually near coast.

The balance of the Site was confirmed to be consistent with the Category X mapping, comprising mown pastures of grass and weeds and occasional regrowth vegetation. Trees located within the Category X area are shown on **Figure 5**.

3.1.2. Threatened Ecological Communities

The PMST search report listed that there are five TECs with potential to occur onsite. No vegetation communities with species indicative of these TECs were identified under the State vegetation mapping (refer to **Section 2.2.1.1**) and these TECs do not occur within, or in close proximity to, the Site.

3.1.3. Threatened Species

No EPBC Act listed flora species were recorded during the surveys and, based on the habitat present, none are considered likely to occur.

3.1.4. Weeds

Weeds of national significance (**WONS**) were recorded within or immediately adjoining the Site, but mainly within vegetation associated with the tributary of Moogurrapum Creek. WONS recorded include:

- Asparagus fern (*Asparagus aethiopicus*);
- Cats Claw Creeper (*Dolichandra unguis-cati*);
- Fire Weed (*Senecio madagascariensis*)
- Madeira Vine (*Anredera cordifolia*); and
- Lantana (*Lantana camara*).

3.2. Fauna Values

3.2.1. Habitats

Remnant, riparian vegetation along the eastern boundary of the Site has been ground-truthed as RE 12.3.11, which is known to provide suitable habitat for koalas and contains feed trees for grey-headed flying fox.

The vegetated portions of the Site are providing suitable foraging, roosting and breeding resources for avian species. Within the development footprint patches of regrowth vegetation are mostly devoid of native mid and ground storey species and support few values for native fauna.

The mown grasses provide food resources for wallabies that would utilise adjacent densely vegetated areas for daytime shelter.

There are patches of native vegetation in association with existing dams that are intermittent along the drainage line across Lot 5 on SP293881 and Lot 2 on RP86773. These areas contain occasional large trees and regrowth dominated by Broad-leaved and Black wattle (*Acacia leiocalyx*). These dams provide aquatic habitats of varying degrees, from large permanent deep impoundage areas through to relatively small shallow water storages that provide permanent water sources for native species. introduced Mosquito fish (*Gambusia holbrooki*). Eastern Water dragon (*Intellagama lesueurii*) was also recorded in association with the dams, and there is high potential for native turtles and native eels to be present within the larger dams (**Attachment 5**).

3.2.2. Connectivity

The habitats associated with Moogurrapum Creek, and its tributaries, provide important ecological linkages within the local landscape. This riparian area holds the greatest value as fauna habitat and supports several species associated with the more complex habitat structure that were not recorded within in the more open, rural lands.

Opportunities for fauna movement within the remainder of the Site are limited due to existing rural uses and prior vegetation clearing. Scattered trees and pastures are being utilised by birds, though the species present are comprised mostly of larger, gregarious species that thrive in disturbed bushland, parks gardens and are known to move through urbanised landscapes.

Native ground-mammal species are few, with the more common occurring species being red necked wallaby and northern brown bandicoot which are well-suited to the current conditions. No koala evidence was recorded onsite although this species has been recorded immediately north and west of the site and is known to move relatively freely between isolated trees and woodland fragments, provided heavy weed infestations are not present and obstructing movement opportunities.

3.2.3. Threatened Species

Fauna surveys conducted by 28 South Environmental and BAAM (2018-2023) have established that two threatened species are known to utilise the Site, being koala and grey-headed flying fox (**Attachment 5**).

Evidence (scats and scratches) was recorded during surveys of koala utilisation of trees on the Site. Additionally, a koala was sighted during surveys on Lot 22 RP86773, which immediately adjoins the Site to the east, along the Moogurrapum Creek tributary (**Figure 6**).

Tree survey across the Site has determined there to be 1,054 NJKHTs within the development footprint for the Proposed Action (**Figure 5**).

No flying-fox camps are located on or peripheral to the Site. The closest recognised flying-fox camp (unspecified species) is 1.1 km north-east from the Site, located in Peppercorn Crescent, Victoria Park (**Figure 7**). However, trees located on Site include flowering Eucalypts and Melaleuca sp. that are recognised as being food sources for grey-headed flying fox.

One other MNES threatened species, the white-throated needletail, is likely to occur in proximity to the Site. This species is likely to utilise the air space above the Site, primarily in summer preceding rainfall and storm events, but is not expected to be reliant on on-ground habitat values. Consequently, it is not expected to be impacted by the Proposed Action.

Significant impact assessments have been conducted, in reference to the Matters of National Environmental Significance: Significant impact guidelines 1.1, for the MNES species that have potential to occur on Site, being the koala and grey-headed flying fox (**Section 6**).

4. Impacts of the Proposed Action

Direct impacts to MNES as a consequence of the Proposed Action are expected to arise from vegetation clearing and civil earthworks. This development is expected to result in the clearing of 1,316 native trees, 1,054 of which are NJKHTs (**Figure 5**).

In addition, the Proposed Action may result in indirect impacts to MNES, as follows:

- Disturbance to fauna during construction due to noise and vibration from construction vehicles, plant and machinery.
- Increased potential for road strike once internal roads are operational.
- Increased potential for interaction between native fauna and domestic animals, e.g. cats and dogs, due to residential occupancy of the Site.

5. Avoidance, Mitigation and Management Measures

The mitigation hierarchy is a tool that is used to limit the amount of damage an action, such as a development, will have on the environment. There are three steps, being 'Avoid', 'Mitigate' and 'Offset'. Each step must be followed in order and to the greatest extent possible before moving on to the next. This section provides discussion on the measures that have been adopted to avoid, in the first instance, then minimise potential impacts to MNES and their habitat.

5.1. Ecologically Sustainable Development

5.1.1. The Principles of ESD

The principles of Ecologically Sustainable Development (**ESD**), as defined by section 3A of the EPBC Act, are:

(a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations;

(b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;

(c) the principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;

(d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making; and

(e) improved valuation, pricing and incentive mechanisms should be promoted.

5.1.2. How the Proposed Action achieves the Principles of ESD

5.1.2.1. Principle (a)

This Report provides detail on the short and longer term ecological effects of the Proposed Action. However, it is well documented that much of Queensland is currently experiencing a housing crisis, driven by a number of factors, including an imbalance between supply and demand; affordability issues; rental market pressures; social and demographic change; and, post-COVID supply chain disruption.

ShapingSEQ 2023 is the Queensland Government's long-term vision for added growth in the South East Queensland region. It forecasts that an additional 2.2 million people will require 900,000 new homes by 2046.

The Proposed Action includes provision of 294 single dwelling residential lots and two medium density residential lots, and will play a part in the State's attempt to overcome the growing housing crisis.

5.1.2.2. Principle (b)

This Report outlines investigations undertaken to determine the inherent environmental values of the Site and its role in the broader landscape. The investigations are comprehensive and scientifically robust, and where minor uncertainty exists the precautionary principle has been adopted.

5.1.2.3. Principle (c)

By way of intentional design, the Proposed Action has been sited on land which has, for the most part, been previously subject to significant historical disturbance in the form of clearing, occupation and use for rural residential purposes.

In conjunction with strategic orientation of the development plan, the Proposed Action relies heavily on the 'Avoid' principle of the mitigation hierarchy and represents a development outcome that, once full rehabilitation of conservation areas is achieved, will provide a better ecological outcome for the Site.

5.1.2.4. Principle (d)

The conservation of biological diversity and ecological integrity is a primary focus of the design of the Proposed Action and the assessment thereof. Ecologically conscious infrastructure design contributes to the avoidance of those identified features. Making a well-informed referral application ensures DCCEEW as a decision-maker can ensure an appropriate balance of biodiversity and ecological conservation is upheld.

5.1.2.5. Principle (e)

The costs for addressing biodiversity impacts arising from the Proposed Action are imposed solely on the Proponent.

The housing products made available through delivery of the Proposed Action will be priced according to market rates at the time of stock availability.

5.2. Impact Avoidance

5.2.1. Site Location

The Proposed Action has been sited on land which has, for the most part, been previously subject to significant historical disturbance in the form of clearing, occupation and use for rural residential purposes.

The Site is within the Urban Footprint area, as identified by ShapingSEQ 2023. The plan specifies that *'The priority for developing land in the Urban Footprint is to accommodate urban growth.'*; however, it also states that '*remnant vegetation will continue to be protected and managed under relevant state legislation, including the* Vegetation Management Act 1999'. This intent is achieved by the Proposed Action, which has been configured to retain and enhance the remnant vegetation (ground-truthed as RE 12.3.11) that is associated with the riparian corridor of the Moogurrapum Creek tributary.

The intended use of the Site for residential purposes is consistent with the nature of surrounding development, such as that which has occurred immediately to the north (Brendan Way and Clay Gully Road), to the east (corner of Double Jump Road and Cleveland-Redland Bay Rd) and the west (Wollemi Avenue, off Bunker Road) of the Site.

There have been various residential developments in vicinity of the Proposed Action that have been previously referred to the Department for assessment under the EPBC Act, each of which have been determined Not a Controlled Action:

- Clay Gully Road residential development (EPBC Referral 2017/7984); Not a Controlled Action
- Residential Estate, Bunker Road (EPBC Referral 2005/2130); Not a Controlled Action
- Residential subdivision, Redland Bay Road (EPBC Referral 2002/739); Not a Controlled Action
- Eprapah Heights Bushland Residential Development (EPBC Referral 2001/286); Not a Controlled Action.

5.2.1.1. Alternative Sites

The Site has been identified for residential development, as intended by the Proposed Action, through acceptance by RCC of the VPSP area (**Section 1.2.3**). No alternative sites have been considered for this development.

5.2.2. Avoiding Impacts Through Design

The proposed development plan has been designed and orientated to avoid disturbance to the only remnant vegetation mapped within the bounds of the Site, that which is associated with the Moogurrapum Creek tributary riparian area. This remnant vegetation will not only be avoided, but will be designated as one of the three

Conservation Areas as part of the development and will be subject to further improvement, through rehabilitation, as a component of this conservation.

Avoidance of this vegetation in the east of the Site also ensures retention of continued connectivity opportunity for fauna movement through the broader landscape.

5.3. Impact Minimisation Through Mitigation

The Proposed Action has taken into consideration the Site's ecological, environmental and landscape character when considering impact avoidance and mitigation. While largely reliant on avoidance, impacts from the Proposed Action can be further mitigated and minimised.

The following mitigation measures will be implemented to ensure that impacts to MNES and their habitat that cannot be avoided are minimised to the greatest extent possible:

- Development and implementation of a Construction Environmental Management Plan (**CEMP**) to outline relevant environmental requirements for undertaking the works;
- Hours of work will be limited to Monday to Saturday between 6:30 am to 6:30 pm, excluding public holidays, thereby avoiding potential nighttime disturbance from noise, vibration and lighting.
- An Erosion and Sediment Control Plan will be developed, certified by a Registered professional Engineer Queensland (**RPEQ**) or an accredited professional in erosion and sediment control, and implemented.
- Implementation of weed management and controls across the Site and reestablishment of native grasses;
- The extent of permissible clearing will be clearly demarcated by an ecologist prior to the commencement of construction works to prevent clearing in excess of the approved footprint of works.
- Felled trees will be mulched on-site for use in rehabilitation works. Other habitat features (e.g. boulders, logs etc.) will be retained and reinstated across the disturbed footprint as part of Site rehabilitation works.
- A licensed Wildlife Spotter/Catcher under the *Nature Conservation Act 1992* is to undertake a survey of the site to identify any fauna or habitat features (e.g. nests, tree hollows) and certify that any necessary fauna protection measures or relocation procedures have been implemented.

5.4. On-site Compensation

The three Conservation Areas, totalling 102,299 m^2 (10.2 ha), have been designated in the proposed development plan (**Attachment 1**). The intended purpose of these Conservation Areas is to provide a long-term ecological benefit to the Site, relative to present day condition. Once rehabilitated, these areas will provide for continued fauna movement connectivity 1) along the Moogurrapum Creek tributary riparian corridor; and 2) in a north-west direction and east-west direction, connecting bushland south of Bunker Road to the Moogurrapum Creek tributary riparian corridor.

Minor earthworks will occur in the northern and eastern Conservation Areas during Site establishment, for the purpose of installing utilities and stormwater infrastructure. However, this earthworks will be orientated to avoid the need for tree clearance.

More extensive earthworks will be required within the western Conservation Area to achieve the necessary development land-form.

Regardless, all three Conservation Areas will be subject to rehabilitation through weed control and a combination of broad re-planting (in largely cleared areas) or selective in-fill planting (where remnant vegetation is retained). In cleared and heavily disturbed areas, supplementary planting will be conducted to establish an overall plant density (canopy, mid-storey and groundcover) of 1 plant/m^2, with a species palette consistent with the corresponding pre-clear RE.

Furth on-site compensation for habitat loss will be provided through the two local parks. These parks will be required to maintain a core recreational function, so will not be rehabilitated and preserved to the same extent as the Conservation Areas; however, native trees will be incorporated into the landscape design to provide an aesthetic connection to the natural environment, as well as provide shading opportunities for park users.

6. Assessment against Significant Impact Guideline 1.1

The following sections provide significant impact assessments under the MNES Significant Impact Guidelines 1.1 (DoE, 2013) for the koala and grey-headed flying fox.

6.1. Koala

Koala is an Endangered species under the EPBC Act and therefore the significance of impact on this community has been assessed against the significant impact criteria for '*Critically endangered and endangered species*' in the MNES Significant impact guidelines 1.1 (DoE, 2013). This assessment is presented in Table 6.

Table 6. Significant impact assessment for koala

Criteria	Proposed Action Response
An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:	
Lead to a long-term decrease in the size of a population	The Proposed Action will result in the clearing of approximately 1,054 NJKHTs (**Figure 5**), which equates to approximately 4.2 ha of koala habitat when applying the Queensland Government's rule of 40 m^2 per tree (DES, 2023). Whilst the clearing of these trees will not result in a direct impact to the size of the regional koala population, it will cause a short to medium term reduction in the occupancy area for this species (see below).
Reduce the area of occupancy of the species	The Proposed Action will result in the clearing of the equivalent of approximately 4.2 ha of koala habitat trees. This clearing will result in a reduction in the occupancy area for the regional koala population. However, this reduction in area of occupancy is expected to be overcome in the longer term with the establishment and rehabilitation of the three Conservation Areas (10.2 ha). These Conservation Areas will improve upon current-day fauna connectivity, which in turn may serve to open up accessibility for koala into other vegetated areas that would otherwise remain fully or partially isolated.
Fragment an existing population into two or more populations	No koalas have been observed on Site; however, surveys did identify evidence (scats and scratches) of koala having utilised trees on Site. A koala has previously been sighted on land adjoining the Site to the east, within the Moogurrapum Creek tributary riparian corridor (**Figure 6**). Based on this evidence, there is likely to be occasional visitation of the Site by koala, but there is no known resident population. On this basis, the Proposed Action is not expected to result in fragmentation of an existing koala population.

Criteria	Proposed Action Response
Adversely affect habitat critical to the survival of a species	Being an endangered species, the Department specifies that all habitat is habitat critical to the survival of koala and that even small areas of habitat loss (as little as 1 ha) can have a significant impact. The Proposed Action is expected to result in the clearance of approximately 1,054 NJKHTs, equating to 4.2 ha of habitat loss (DES, 2023). On this basis, the Proposed Action will adversely affect habitat critical to the survival of the species. However, this impact is expected to be overcome in the longer term with the establishment and rehabilitation of the three Conservation Areas (10.2 ha).
Disrupt the breeding cycle of a population	Current literature does not provide distinction between breeding and non-breeding habitat for koala (Youngentob, 2021). Therefore, loss of any habitat for this species is to be regarded as habitat in which breeding could occur. However, the behavioural ecology of koala is such that this species would not seek to breed exclusively in habitat within the Site. Therefore, the Proposed Action is unlikely to disrupt the breeding cycle of a koala population.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The Proposed Action is expected to result in the clearance of approximately 1,054 NJKHTs, equating to 4.2 ha of habitat loss (DES, 2023). On this basis, the Proposed Action will, at the time of development, result in a decrease in the availability of habitat for the species. However, given the highly fragmented and disturbed landscape in which the removal of habitat will occur, it is considered unlikely that the Proposed Action would result in a decline in the species in its own right. The removal of habitat through Site development is expected to be overcome in the longer term with the establishment and rehabilitation of the three Conservation Areas (10.2 ha).
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	The Proposed Action will ultimately result in an increased density of residential occupation within the bounds of the Site. Increased residential occupancy is likely to be coupled with a greater number of domestic animals. Dogs, in particular, are recognised as being a key threat to koala. Whilst the Proposed Action will see an increased number of domestic dogs in the area, the potential threat to koala is expected to be managed through a combination of engineered (fencing) and administrative (signage) controls.
Introduce disease that may cause the species to decline, or	The proposal is unlikely to introduce or increase the prevalence of a disease that is harmful to koala, e.g. Chlamydia.

Criteria	Proposed Action Response
Interfere with the recovery of the species.	The Proposed Action is not expected to interfere with, nor assist in the recovery of the species.
Conclusion:	
The Proposed Action is expected to result in a significant impact to koala on the basis that it will result in the clearing of the equivalent of 4.2 ha of habitat for the species. In doing so, the Proposed Action will: ▪ Adversely affect habitat critical to the survival of a species ▪ Reduce the area of occupancy of the species, at least until full rehabilitation of the Conservation Areas is achieved.	

6.2. Grey-headed flying fox

Grey-headed flying fox is a Vulnerable species under the EPBC Act and therefore the significance of impact on this community has been assessed against the significant impact criteria for '*Vulnerable species*' in the MNES Significant impact guidelines 1.1 (DoE, 2013). This assessment is presented in Table 6.

Table 7. Significant impact assessment for grey-headed flying fox

Criteria	Proposed Action Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:	
Lead to a long-term decrease in the size of an important population	The Proposed Action will result in the clearing of approximately 1,054 NJKHTs, which are tree species that would also be regarded as feed trees for grey-headed flying fox and equates to approximately 4.2 ha of habitat. Whilst the clearing of these trees will not result in a direct impact to the size of the regional grey-headed flying fox population, it will cause a short to medium term reduction in the occupancy area for this species (see below).
Reduce the area of occupancy of an important population	There are no separate or distinct grey-headed flying fox populations due to the constant genetic exchange and movement between camps throughout the species' entire geographic range. This indicates that there is one single interbreeding population (Webb, 1995; DSE, 2005). Consequently, the concept of an 'important population' does not apply to this species.

Criteria	Proposed Action Response
	Roost sites are the closest surrogate to an important population for this species. There is no roost site for this species within the bounds of the Site. The Proposed Action, and resultant clearing of 4.2 ha of habitat, will result in short to medium term reduction in the occupancy area for this species. However, this impact is expected to be overcome in the longer term with the establishment and rehabilitation of the three Conservation Areas (10.2 ha).
Fragment an existing important population into two or more populations	As above, the concept of an 'important population' does not apply to this species. Regardless, the Proposed Action is not expected to result in the fragmentation of this species given that a) there is no roost site for this species within the bounds of the Site; b) the species is avian and highly mobile, meaning that removal of approximately 4.2 ha of potential feed trees is unlikely to affect the species in the context of the broader landscape.
Adversely affect habitat critical to the survival of a species	Spring foraging resources are considered to be critical to the survival of the species (DoE, 2024). Trees that will be cleared for the Proposed Action include Spring flowering species (e.g. *E. tereticornis*, *C. intermedia*). Therefore, the 4.2 ha (equivalent area) that will be cleared for the Proposed Action aligns with the definition of 'habitat critical to the survival of the species'. However, this impact is expected to be overcome in the longer term with the establishment and rehabilitation of the three Conservation Areas (10.2 ha).
Disrupt the breeding cycle of an important population	There is no roost site for this species within the bounds of the Site. The closest ross site for flying fox (unspecified species) is located 1.1 km north-east of the Site, at Peppercorn Crescent, Victoria Point (**Figure 7**).
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The Proposed Action is expected to result in the clearance of approximately 4.2 ha of foraging habitat for this species. On this basis, the Proposed Action will, at the time of development, result in a decrease in the availability of habitat for the species. However, given the highly fragmented and disturbed landscape in which the removal of habitat will occur, it is considered unlikely that the Proposed Action would result in a decline in the species in its own right. The removal of habitat through Site development is expected to be overcome in the longer term with the establishment and rehabilitation of the three Conservation Areas (10.2 ha).
Result in invasive species that are harmful to a vulnerable species	Invasive species are not recognised as being a key threat to this species (DoE, 2024).

Criteria	Proposed Action Response
becoming established in the vulnerable species' habitat	
Introduce disease that may cause the species to decline	The listing advice for the species Australian Bat Lyssavirus (ABL), Bat Paramyxovirus and Menangle Pig virus as being potential threats to the grey-headed flying fox, but of unknown magnitude or severity. Though it is noted that the incidence of ABL in the species is very low whilst approximately 25% of wild flying-foxes carry antibodies to Menangle Pig virus. The Proposed Action is not expected to result in the introduction or exacerbation in occurrence of any of these pathogens.
Interfere with the recovery of the species.	The Proposed Action is not expected to interfere with, nor assist in the recovery of the species.
Conclusion:	
The Proposed Action is expected to result in a significant impact to grey-headed flying fox on the basis that it will result in the clearing of the equivalent of 4.2 ha of foraging habitat for the species. In doing so, the Proposed Action will: ▪ Adversely affect habitat critical to the survival of a species.	

7. Summary and Conclusion

The purpose of this report is to support a CAR to be submitted to the DCCEEW to assist in determining if the Proposed Action should be deemed a Controlled Action under the EPBC Act.

The Proposed Action, the Double Jump Road Residential Development, is a proposed a residential subdivision, with provision of supporting services and function. The Proposed Action entails the planned, logical and sequential expansion of existing urban areas into adjoining (cleared) farmland, and accords with broader planning direction established by the City Plan and VPSP.

A combination of desktop assessment and various site surveys have been conducted to determine the likelihood of MNES occurring in proximity to, and being impact by the Proposed Action. This assessment has determined that two MNES threatened species, koala (Endangered) and grey-headed flying fox (Vulnerable) are likely to utilise the Site and be impacted by its development.

Assessment of both species against the Significant impact guidelines 1.1 (DoE, 2013) are likely to be significantly impacted by the Proposed Action on the grounds that it will:

- Adversely affect habitat critical to the survival of a species (both koala and grey-headed flying fox)
- Reduce the area of occupancy of the species, at least until full rehabilitation of the Conservation Areas is achieved (koala only).

8. References

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28ºS
ENVIRONMENTAL

Figures

Double Jump Road Development

Legend

Site Boundary

Road

Waterway/overland flow path

Figure 1 - Locality

28 South Project Ref: 2019 -100e

Source: C:\Users\Mitch\Dropbox\(d) Projects\2019\2019-100e (Double Jump Road Development)

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Links to data sources can be provided upon request.

28ºS ENVIRONMENTAL

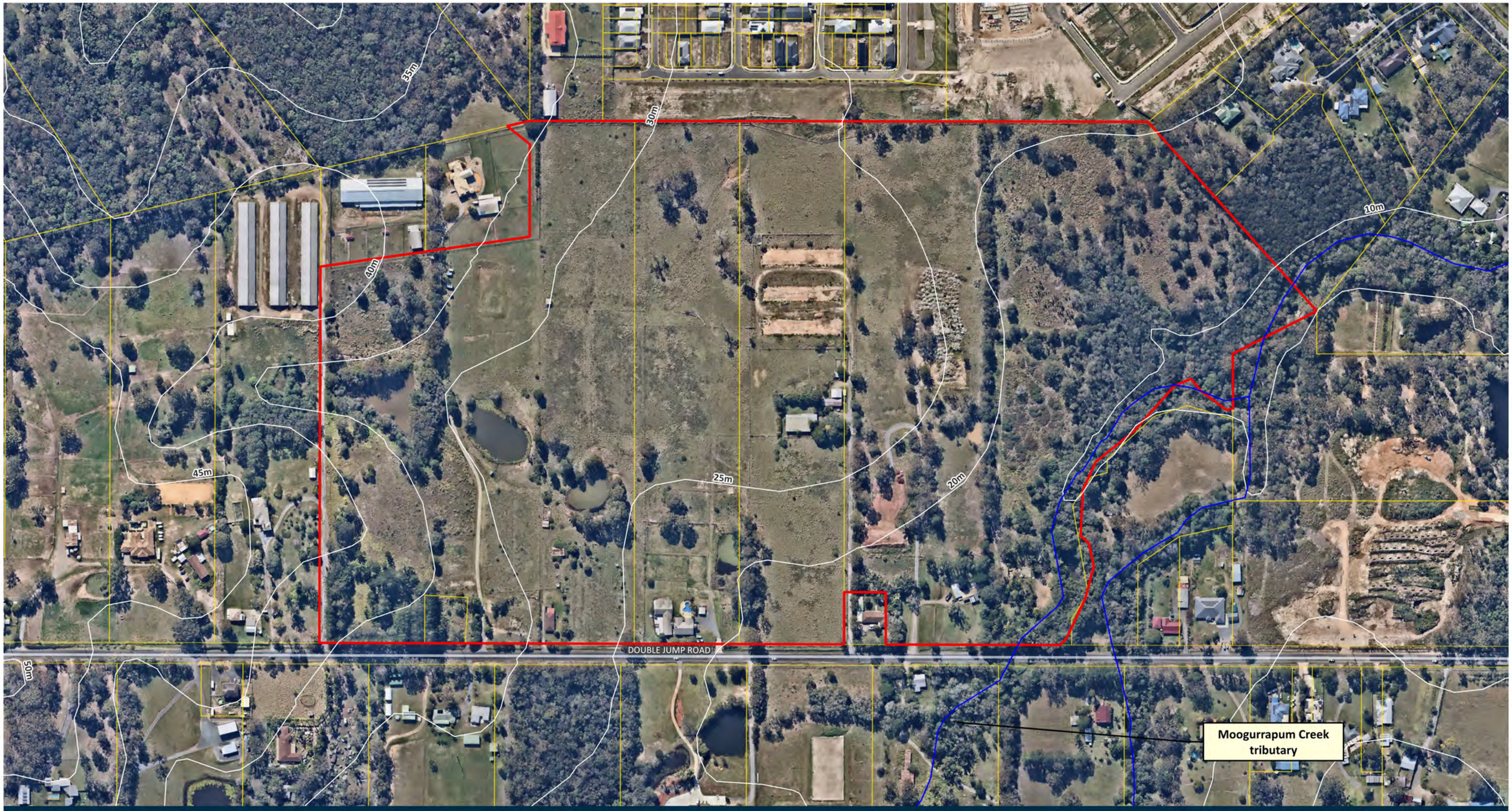
Issue Date	Dwg No.	Author
08-03-2024		MO
Approved	**Revision Note**	
WM		

GDA2020 MGA 56

1:13,000

0 0.25 0.5 0.75 km

N



Double Jump Road Development

Legend

- Site Boundary
- Property Boundaries
- Road
- 5m Contours
- Waterway/overland flow path

Figure 2 - Site Context

28 South Project Ref: 2019 -100e

Source: Source: C:\Users\Mitch\Dropbox\(d) Projects\2019\2019-100e (Double Jump Road Development)

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MB		

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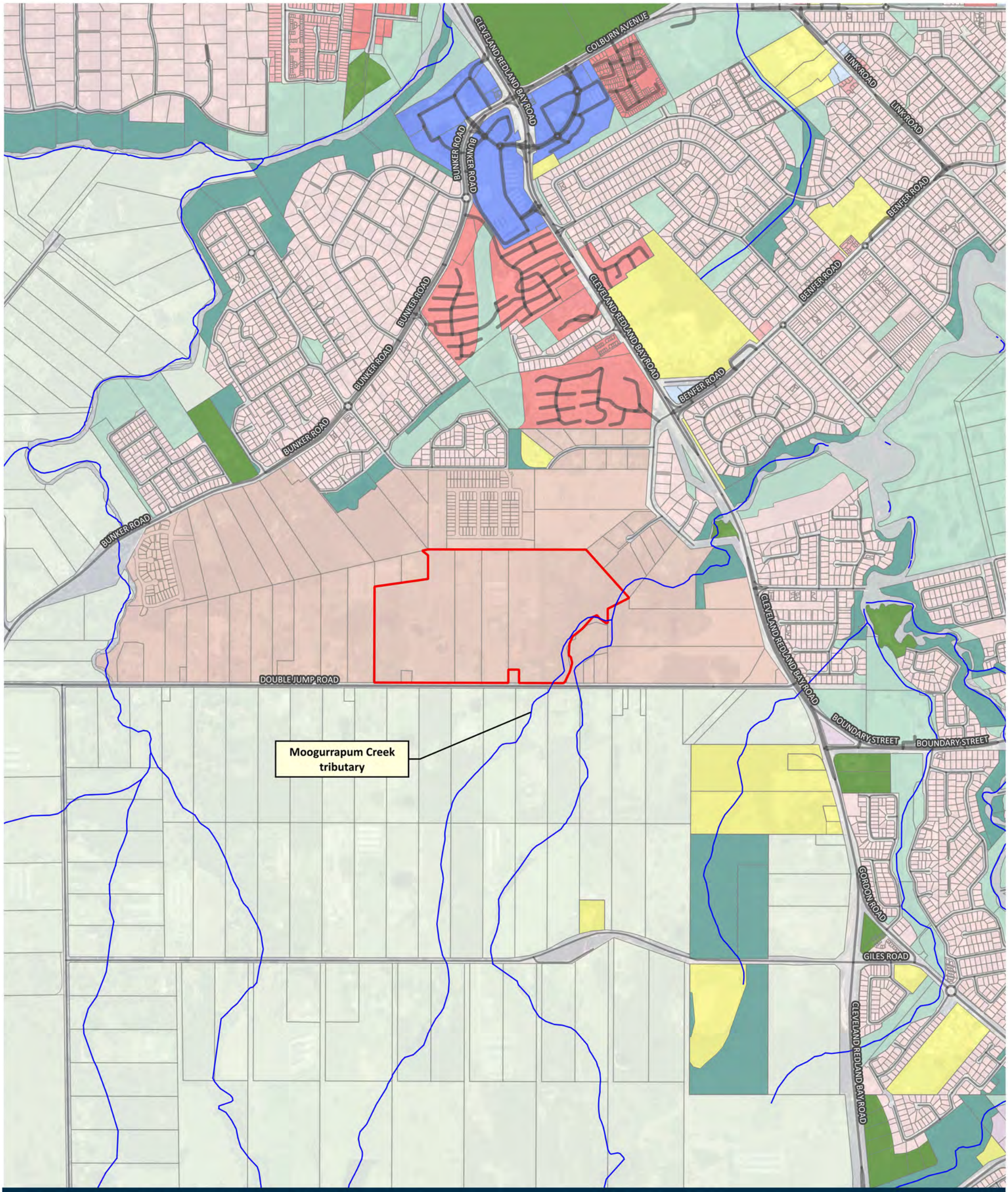
1:3,500

0 100 200 m

N



Double Jump Road Development

Figure 3 - RCC Zoning

28 South Project Ref: 2019 -100e

Source: C:\Users\Mitch\Dropbox\(d) Projects\2019\2019-100e (Double Jump Road Development)

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Links to data sources can be provided upon request.

28ºS ENVIRONMENTAL

Legend

- Site Boundary
- Property Boundaries
- Road

Residential Zones
- Low Density Residential
- Low-medium Density Residential
- Medium Density Residential
- Character Residential
- Tourist Accomodation

Centre Zones
- Principal Centre
- Major Centre
- District Centre
- Local Centre
- Neighbourhood Centre
- Specialised Centre

Recreation Zones
- Recreation and Open Space

Environmental Zones
- Environmental Management
- Conservation

Industry Zones
- Low Impact Industry
- Medium Impact Industry
- Waterfront and Marine Industry

Other Zones
- Community Facilities
- Emerging Communities
- Mixed Use
- Rural
- Precinct Boundary
- Cadastral Properties
- Outline of RCC
- Local Authorities outside RCC

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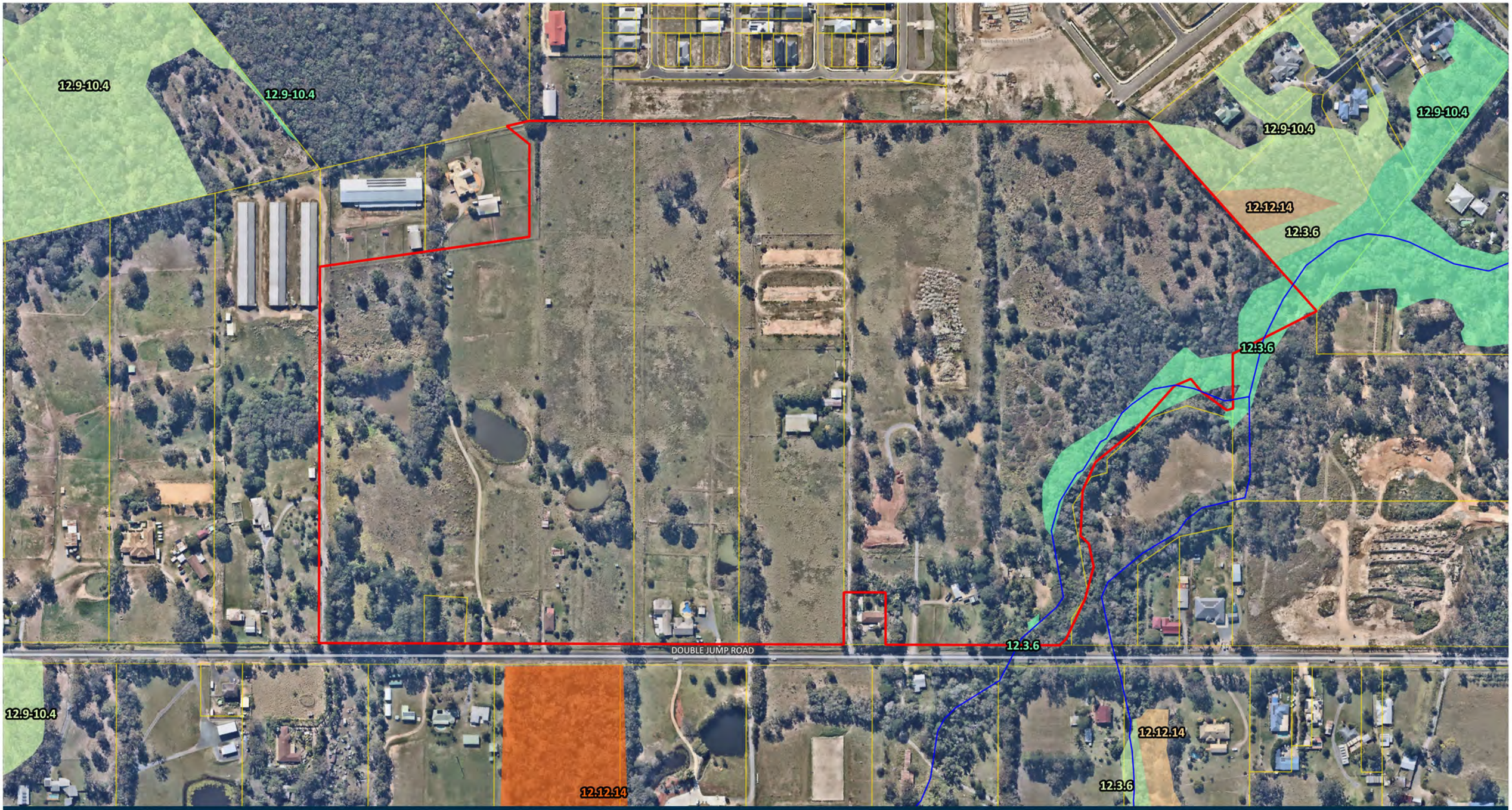
1:13,000

0 200 400 m

N



Double Jump Road Development

Figure 4 - Regulated Vegetation

28 South Project Ref: 2019 -100e

Source: C:\Users\Mitch\Dropbox\(d) Projects\2019\2019-100e (Double Jump Road Development)

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Links to data sources can be provided upon request.

28ºS ENVIRONMENTAL

Legend

- Site Boundary
- Property Boundaries
- Road
- Waterway/overland flow path

QLD Regulated Vegetation

- High Value Regrowth Least Concern
- High Value Regrowth Of Concern
- Remnant Least Concern
- Remnant Of Concern

Issue Date	Dwg No.	Author
08-03-2024		MO
Approved	**Revision Note**	
MB		

GDA2020 MGA 56

1:3,500

0 100 200 m

N

DOUBLE JUMP ROAD

Double Jump Road Development

Figure 5 - Tree Retention and Clearance

28 South Project Ref: 2019 -100e

Source: C:\Users\Mitch\Dropbox\(d) Projects\2019\2019-100e (Double Jump Road Development)

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Links to data sources can be provided upon request.

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Legend

- Site Boundary
- Extent of Impact
- Proposed design
- Road
- Waterway/overland flow path
- Area for conservation and rehabilitation
- NJKHT to be removed [1054]
- Other tree to be removed [262]

Issue Date	Dwg No.	Author
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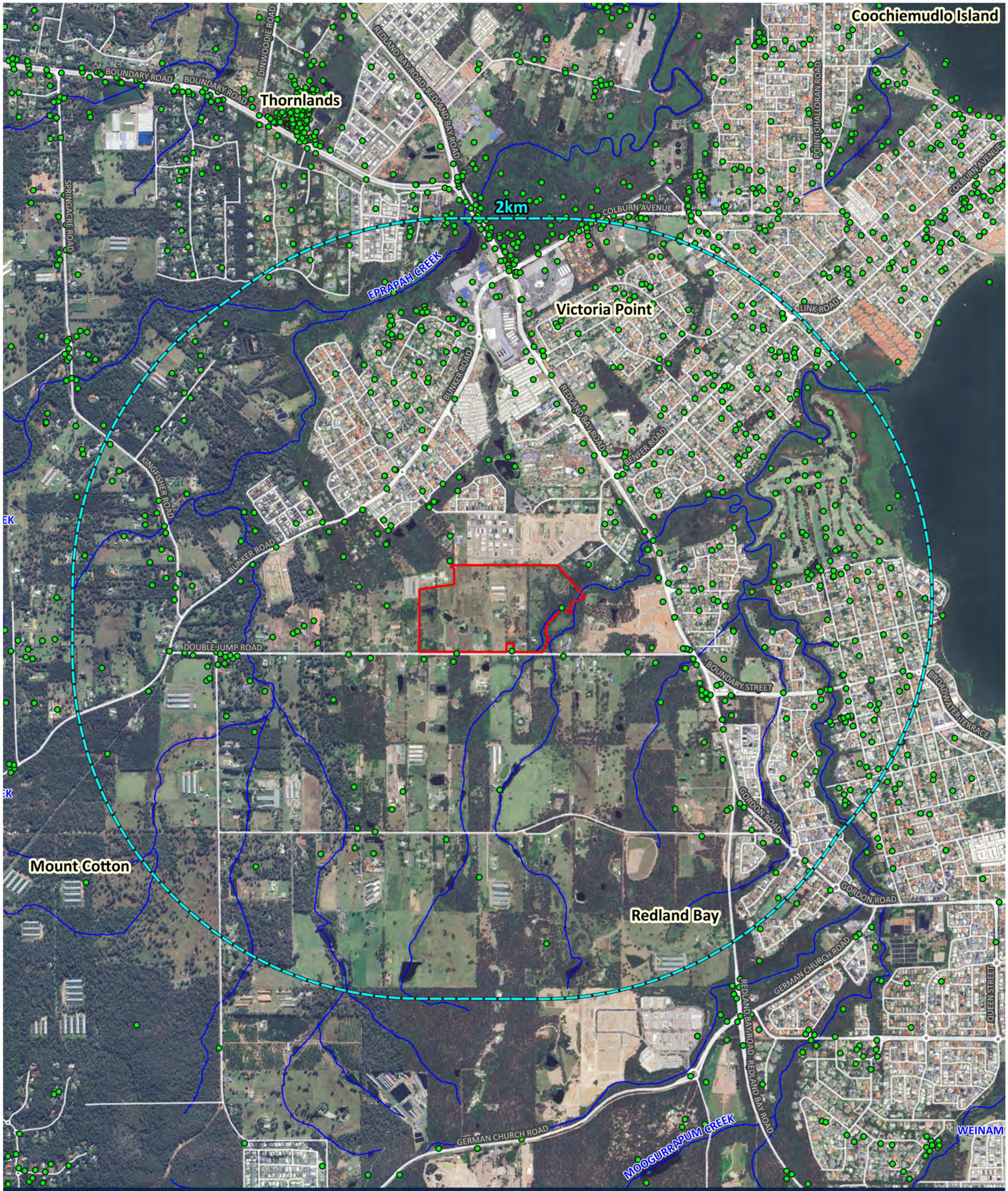
GDA2020 MGA 56

1:2,650

0 100 200 m

N



Double Jump Road Development

Legend

Site Boundary

Road

Waterway/overland flow path

Koala record

Figure 6 - Koala records within 2km of Site

28 South Project Ref: 2019 -100e

Source: C:\Users\Mitch\Dropbox\(d) Projects\2019\2019-100e (Double Jump Road Development)

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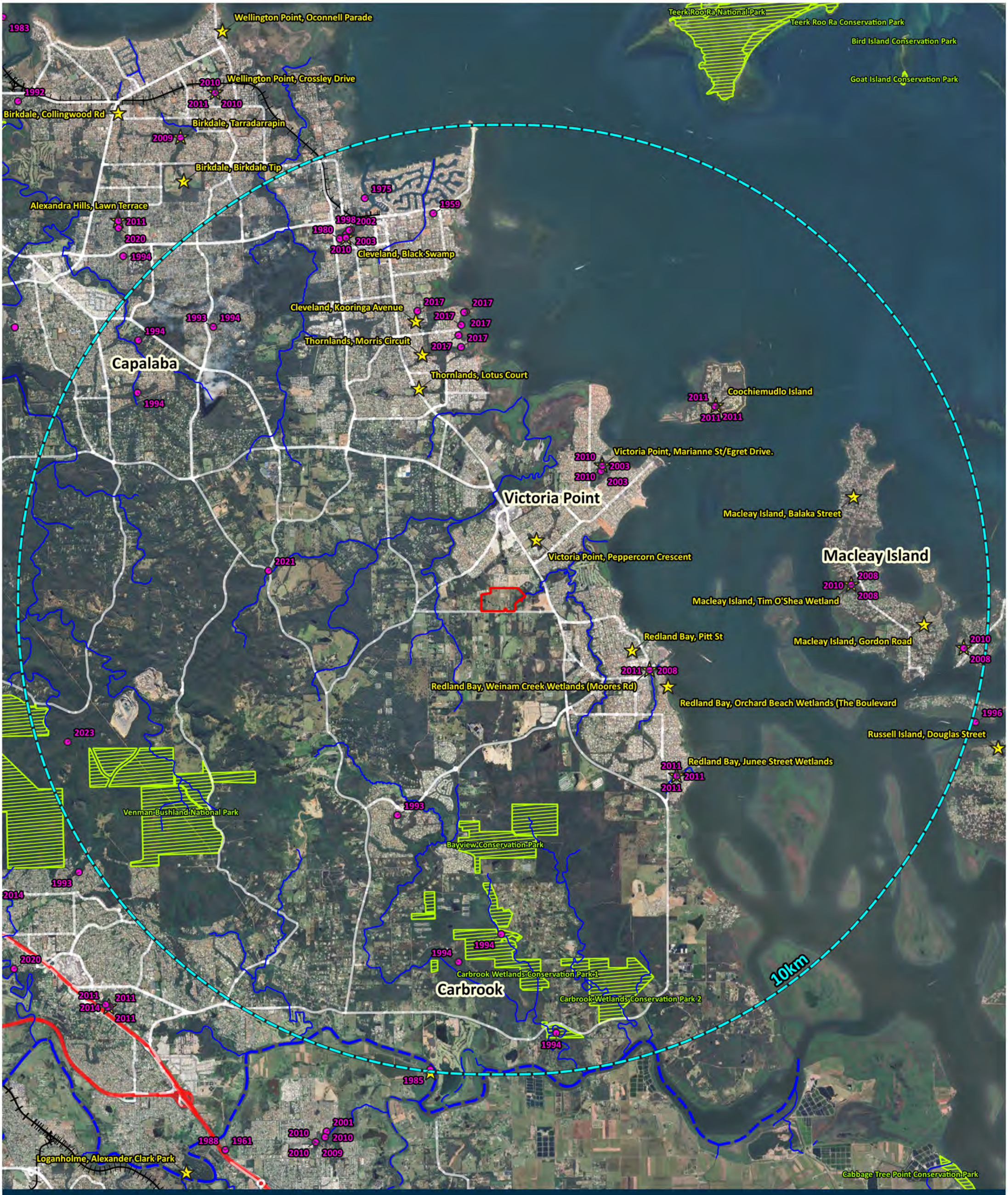
1:20,000

0 0.25 0.5 0.75 km

N



Double Jump Road Development

Legend

Site Boundary

Road

Rail Network

Waterway/overland flow path

QLD Protected Areas

Grey-headed flying fox record

Flying fox monitoring camp

Figure 7 - Grey-headed flying fox records and monitoring camps within 10km of Site

28 South Project Ref: 2019 -100e

Source: C:\Users\Mitch\Dropbox\(d) Projects\2019\2019-100e (Double Jump Road Development)

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28ºS ENVIRONMENTAL

Issue Date	Dwg No.	Author
08-03-2024		MO
Approved	**Revision Note**	
MB		

GDA2020 MGA 56

1:75,000

0 1 2 3 km

N

28ºS
ENVIRONMENTAL

Attachments

Attachment 1. Development plan

2009
11073m²

2009
10041m²

235m²

2005
1037m²

2004

2006
5084m²

2007
22519m²

2007
3739m²

2002
450m²

2003

2001
9262m²

2000
13060m²

1000
9188m²

2008
40011m²

2008
12666m²

296
15341m²

295
12317m²

Attachment 2. Regulated vegetation management mapping

resources.QLD.GOV.AU

Vegetation management report

For Lot: 1 Plan: RP86773

13/02/2024

Queensland Government

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Recent changes

Updated mapping

Updated vegetation mapping was released on 22 November 2023 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, essential habitat, wetland and high-value regrowth mapping.

The Department of Environment and Science have also updated their koala protection mapping to align with the Queensland Herbarium scientific updates.

The latest version (v10) of the Protected Plants Flora Survey Trigger Map (trigger map) was released on 6 September 2023.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Resources who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:

- the vegetation management framework, which may include:
  - exempt clearing work;
  - accepted development vegetation clearing code;
  - an area management plan;
  - a development approval;

- the protected plant framework, which may include:
  - the need to undertake a flora survey;
  - exempt clearing;
  - a protected plant clearing permit;

- the koala protection framework, which may include:
  - exempted development;
  - a development approval;
  - the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 1 Plan: RP86773, are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
1	RP86773	Freehold	50,300

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

Does this property have a freehold tenure and is in the Wet Tropics of Queensland World Heritage Area?

No, this property is not located in the Wet Tropics of Queensland World Heritage Area.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 1 Plan: RP86773, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Redland City

Bioregion(s)	Subregion(s)
Southeast Queensland	Sunshine Coast - Gold Coast Lowlands
Southeast Queensland	Burringbar - Conondale Ranges

Catchment(s)
Logan-Albert

2. Vegetation management framework (administered by the Department of Resources)

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2023, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem identified in the Vegetation Management Regional Ecosystem Description Database (VM REDD) as having a grassland structure; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Resources or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Resources before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Resources prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Resources before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at
https://vegetation-apps.dnrm.qld.gov.au

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Resources and then follow the conditions and requirements listed in the AMP.
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:
Phone 135VEG (135 834)
Email vegetation@resources.qld.gov.au
Visit https://www.resources.qld.gov.au/?contact=vegetation to submit an online enquiry.

3. Vegetation management framework for Lot: 1 Plan: RP86773

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 5.03ha

Vegetation category	Area (ha)
Category X	5.0

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Resources to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department of Resources to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

The following Property Map of Assessable Vegetation (PMAVs) may be present on this property:

Reference number

2018/001214

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at
https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
non-rem	None	X	5.03	None	None

Please note:

1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or

2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

No records

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

No Class A

Class B (with urban areas masked as per SPP): 2.77ha

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 1 Plan: RP86773.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:
https://www.resources.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new property maps of assessable vegetation (PMAV).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

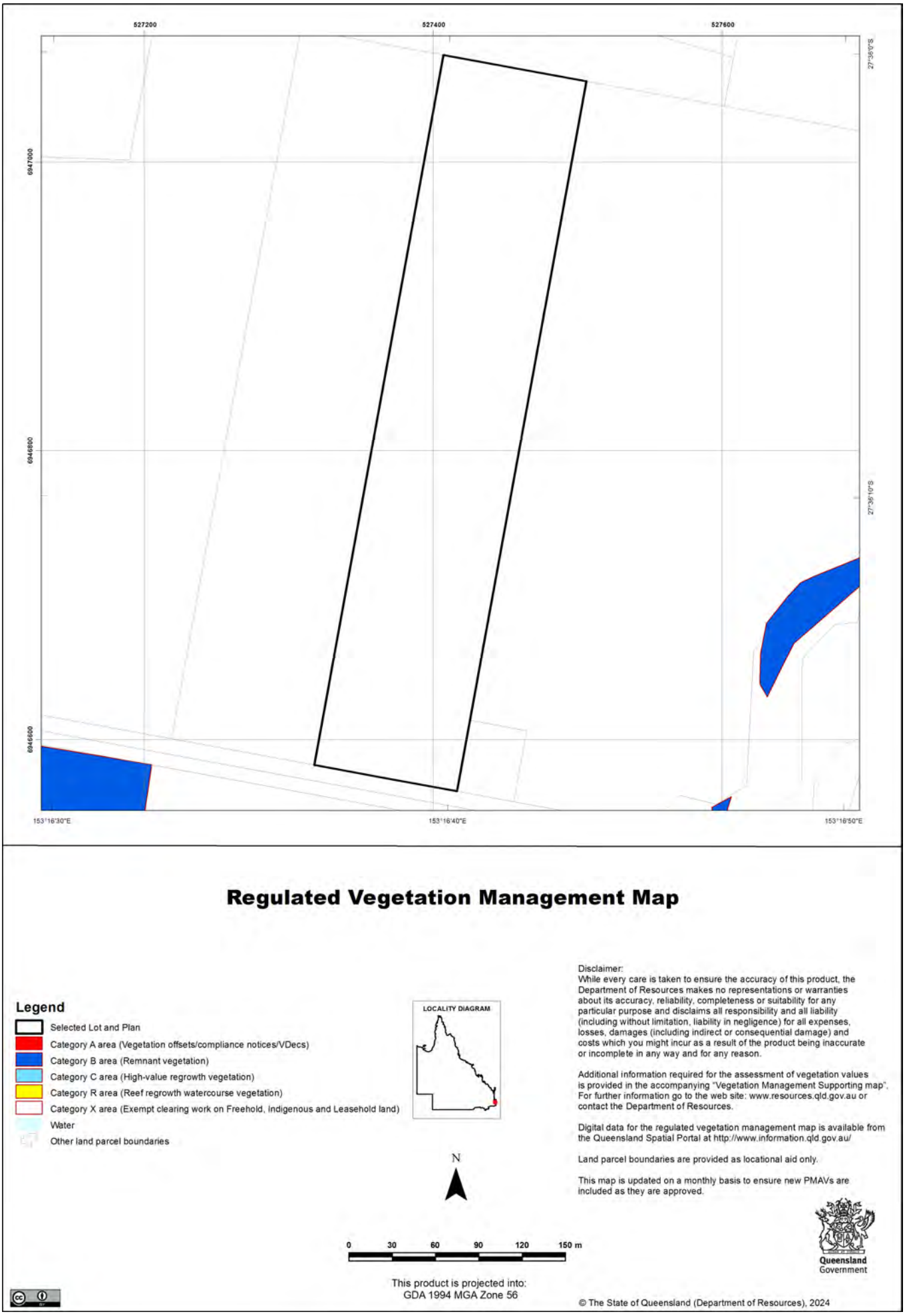
Coastal/non-coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

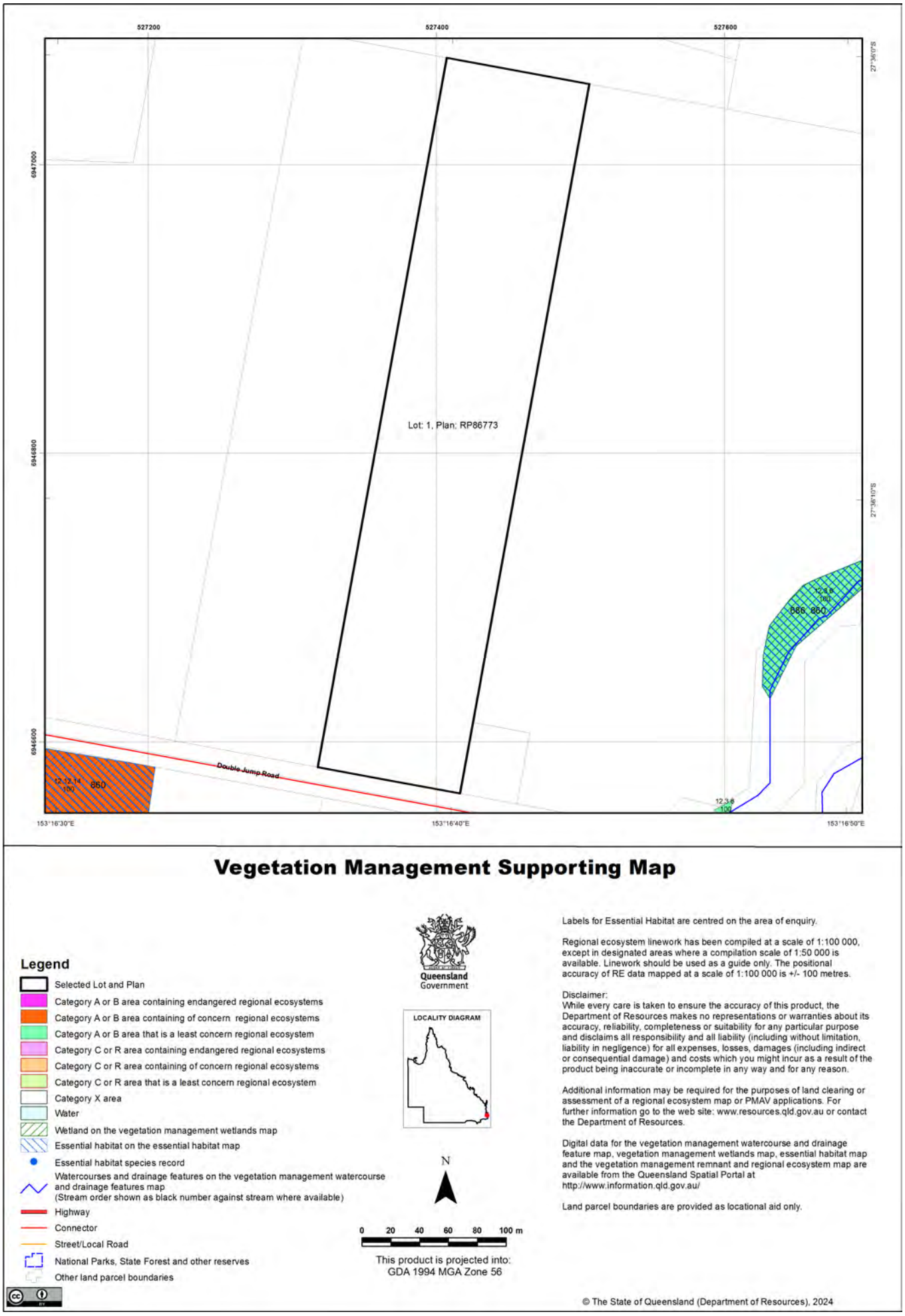
Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

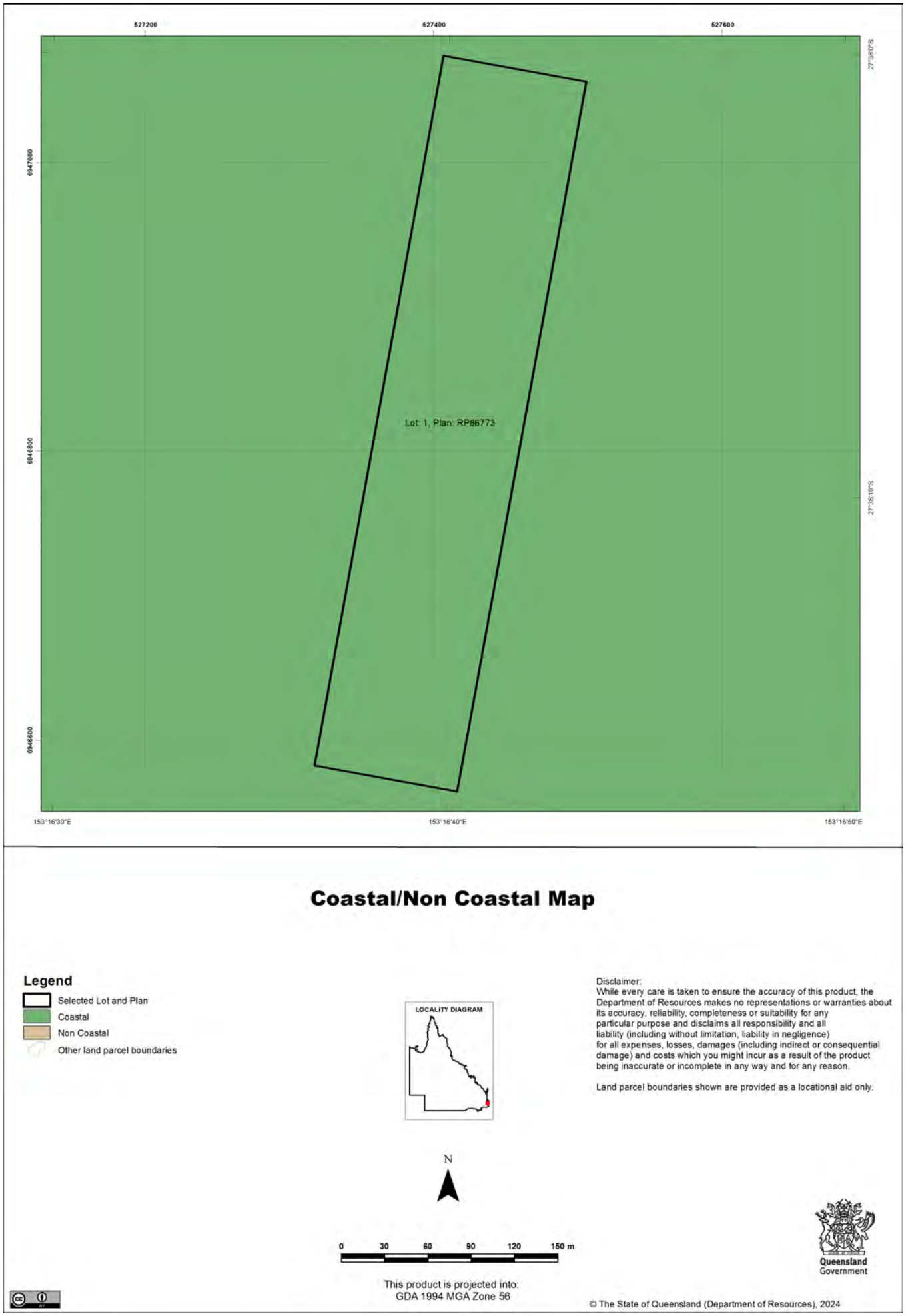
4.1 Regulated vegetation management map



4.2 Vegetation management supporting map



4.3 Coastal/non-coastal map



4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

5. Protected plants framework (administered by the Department of Environment and Science (DES))

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992* (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see Operational policy: When a protected plant in Queensland is considered to be 'in the wild') that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for threatened and near threatened plants. These are areas where threatened or near threatened plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the Flora survey guidelines. The main objective of a flora survey is to locate any threatened or near threatened plants that may be present in the clearing impact area.

If the flora survey identifies that threatened or near threatened plants are not present within the clearing impact area or clearing within 100m of a threatened or near threatened plant can be avoided, the clearing activity is exempt from a permit. An exempt clearing notification form must be submitted to the Department of Environment and Science, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that threatened or near threatened plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the clearing permit application form.

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that threatened or near threatened plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DES

For further information on the protected plants framework:
Phone 1300 130 372 (and select option four)
Email palm@des.qld.gov.au
Visit https://www.qld.gov.au/environment/plants-animals/plants/protected-plants

5.5 Protected plants flora survey trigger map

This map included may also be requested individually at: https://apps.des.qld.gov.au/map-request/flora-survey-trigger/.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the clearing of protected plants for more information.

Protected Plants Flora Survey Trigger Map

Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets

N

0 20 40 60 80 100 m

This product is projected into:
GDA 1994 MGA Zone 56

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@des.qld.gov.au

Disclaimer:
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

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6. Koala protection framework (administered by the Department of Environment and Science (DES))

The koala (*Phascolarctos cinereus*) is listed in Queensland as endangered by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.
Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document Spatial modelling in South East Queensland.

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document Guideline - Requests to make, amend or revoke a koala habitat area determination.

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley,

Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

1) Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
2) Does not include destroying standing vegetation by stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the Planning Regulation 2017. More information on exempted development can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:
  - the local government planning scheme makes the development assessable;
  - the premises includes an area that is both a koala priority area and a koala habitat area; and
  - the development does not involve interfering with koala habitat (defined above); and

- development in identified koala broad-hectare areas.

The Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the Nature Conservation (Koala) Conservation Plan 2017 prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DES

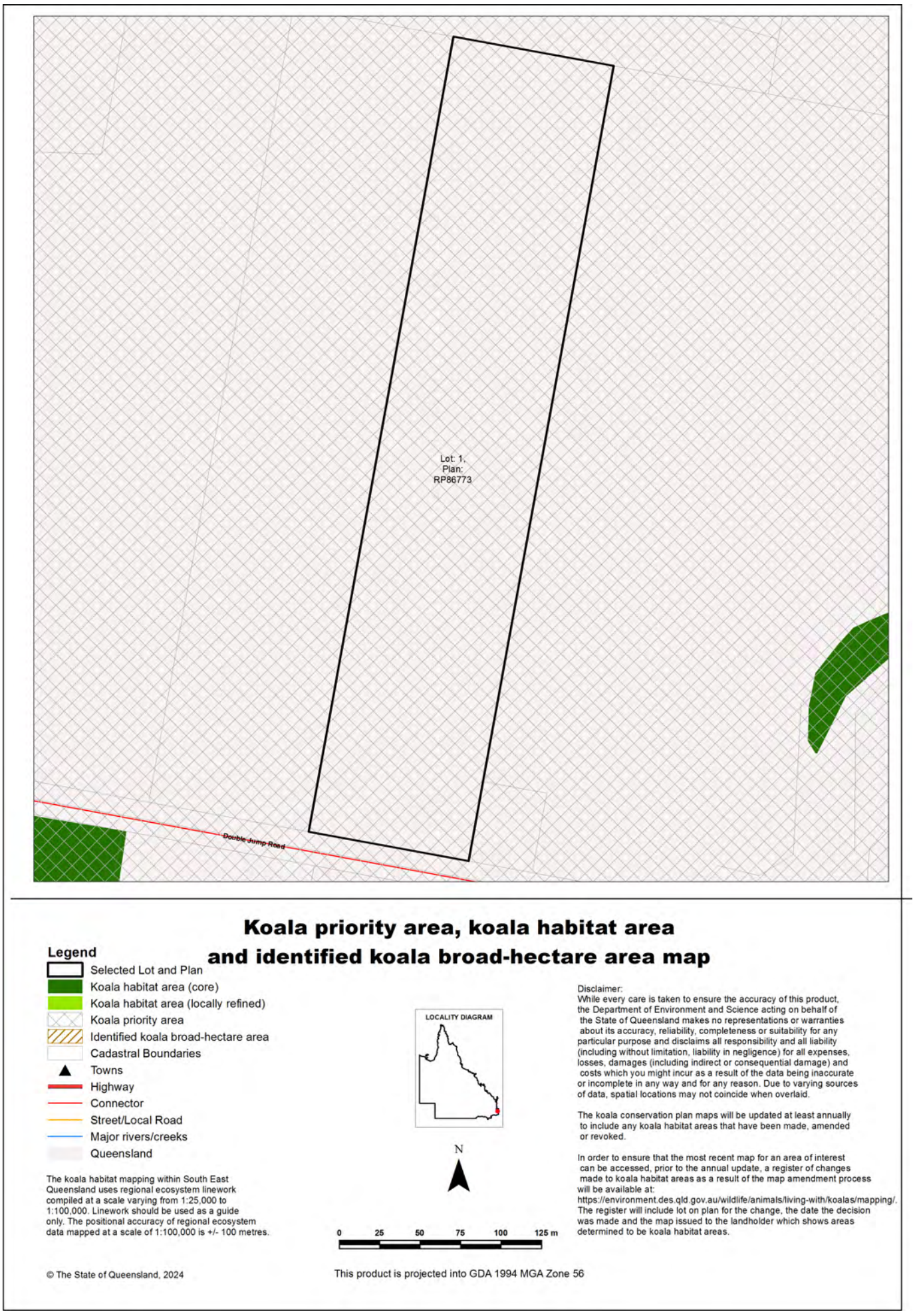
For further information on the koala protection framework:
Phone 13 QGOV (13 74 68)
Email koala.assessment@des.qld.gov.au
Visit https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping

7. Koala protection framework details for Lot: 1 Plan: RP86773

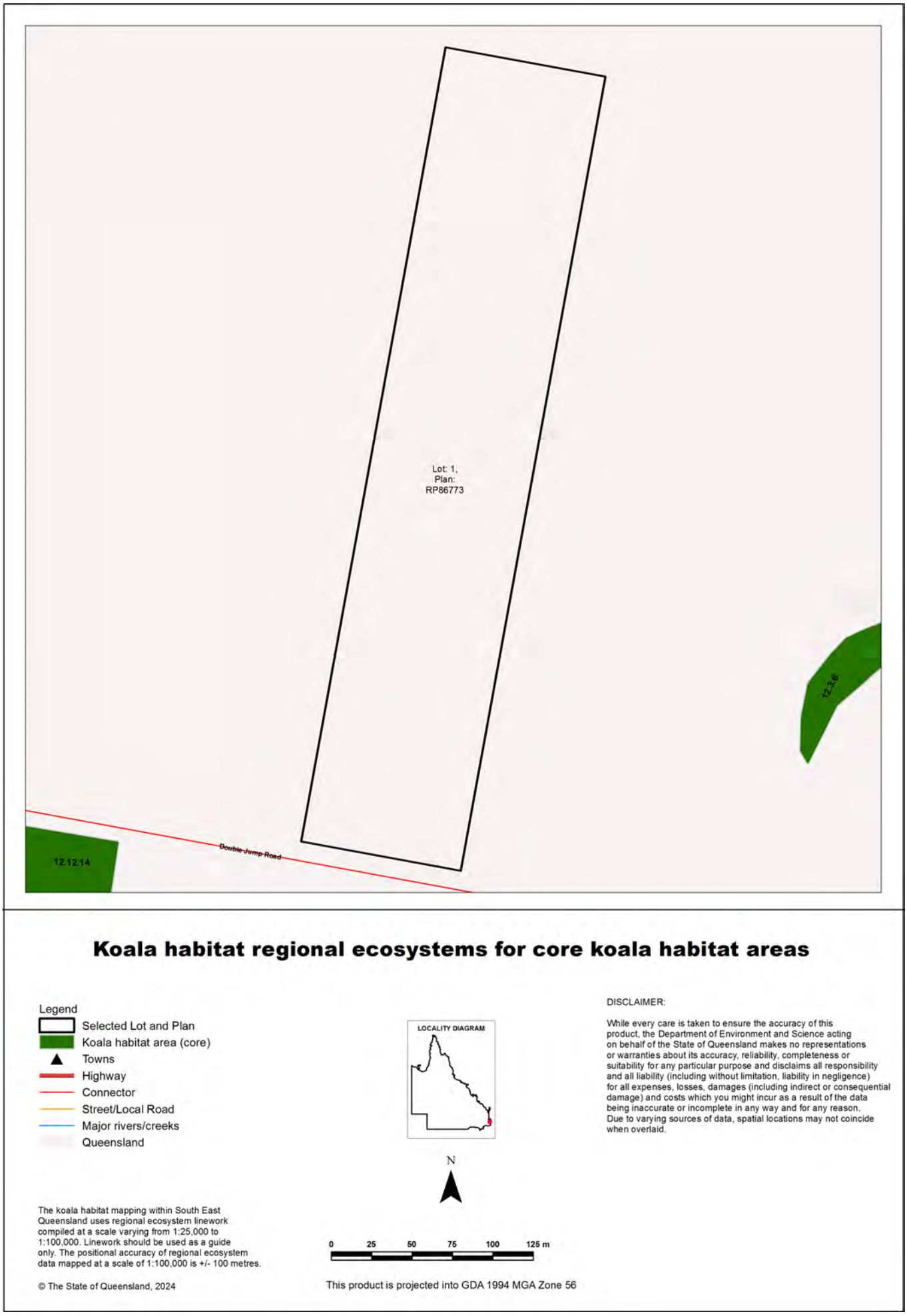
7.1 Koala districts

Koala District A

7.2 Koala priority area, koala habitat area and identified koala broad-hectare area map



7.3 Koala habitat regional ecosystems for core koala habitat areas



8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
• Interference with overland flow • Earthworks, significant disturbance	*Water Act 2000* *Soil Conservation Act 1986*	Department of Regional Development, Manufacturing and Water (Queensland Government) Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.rdmw.qld.gov.au www.resources.qld.gov.au
• Indigenous Cultural Heritage	*Aboriginal Cultural Heritage Act 2003* *Torres Strait Islander Cultural Heritage Act 2003*	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
• Mining and environmentally relevant activities • Infrastructure development (coastal) • Heritage issues	*Environmental Protection Act 1994* *Coastal Protection and Management Act 1995* *Queensland Heritage Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
• Protected plants and protected areas	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 1300 130 372 (option 4) palm@des.qld.gov.au www.des.qld.gov.au
• Koala mapping and regulations	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) Koala.assessment@des.qld.gov.au
• Interference with fish passage in a watercourse, mangroves • Forestry activities on State land tenures	*Fisheries Act 1994* *Forestry Act 1959*	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
• Matters of National Environmental Significance including listed threatened species and ecological communities	*Environment Protection and Biodiversity Conservation Act 1999*	Department of Agriculture, Water and the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
• Development and planning processes	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
• Local government requirements	*Local Government Act 2009* *Planning Act 2016*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office
• Harvesting timber in the Wet Tropics of Qld World Heritage area	*Wet Tropics World Heritage Protection and Management Act 1993*	Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au

resources.QLD.GOV.AU

Vegetation management report

For Lot: 2 Plan: RP86773

13/02/2024

Queensland Government

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Recent changes

Updated mapping

Updated vegetation mapping was released on 22 November 2023 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, essential habitat, wetland and high-value regrowth mapping.

The Department of Environment and Science have also updated their koala protection mapping to align with the Queensland Herbarium scientific updates.

The latest version (v10) of the Protected Plants Flora Survey Trigger Map (trigger map) was released on 6 September 2023.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Resources who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:

- the vegetation management framework, which may include:
  - exempt clearing work;
  - accepted development vegetation clearing code;
  - an area management plan;
  - a development approval;

- the protected plant framework, which may include:
  - the need to undertake a flora survey;
  - exempt clearing;
  - a protected plant clearing permit;

- the koala protection framework, which may include:
  - exempted development;
  - a development approval;
  - the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 2 Plan: RP86773, are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
2	RP86773	Freehold	50,310

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

Does this property have a freehold tenure and is in the Wet Tropics of Queensland World Heritage Area?

No, this property is not located in the Wet Tropics of Queensland World Heritage Area.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 2 Plan: RP86773, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Redland City

Bioregion(s)	Subregion(s)
Southeast Queensland	Sunshine Coast - Gold Coast Lowlands
Southeast Queensland	Burringbar - Conondale Ranges

Catchment(s)
Logan-Albert

2. Vegetation management framework (administered by the Department of Resources)

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2023, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem identified in the Vegetation Management Regional Ecosystem Description Database (VM REDD) as having a grassland structure; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Resources or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Resources before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Resources prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Resources before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at
https://vegetation-apps.dnrm.qld.gov.au

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Resources and then follow the conditions and requirements listed in the AMP.
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:
Phone 135VEG (135 834)
Email vegetation@resources.qld.gov.au
Visit https://www.resources.qld.gov.au/?contact=vegetation to submit an online enquiry.

3. Vegetation management framework for Lot: 2 Plan: RP86773

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 5.03ha

Vegetation category	Area (ha)
Category X	5.0

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Resources to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department of Resources to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

The following Property Map of Assessable Vegetation (PMAVs) may be present on this property:

Reference number

2018/001214

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at
https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
non-rem	None	X	5.03	None	None

Please note:

1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or

2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

No records

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

No Class A

Class B (with urban areas masked as per SPP): 2.95ha

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 2 Plan: RP86773.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:
https://www.resources.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new property maps of assessable vegetation (PMAV).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

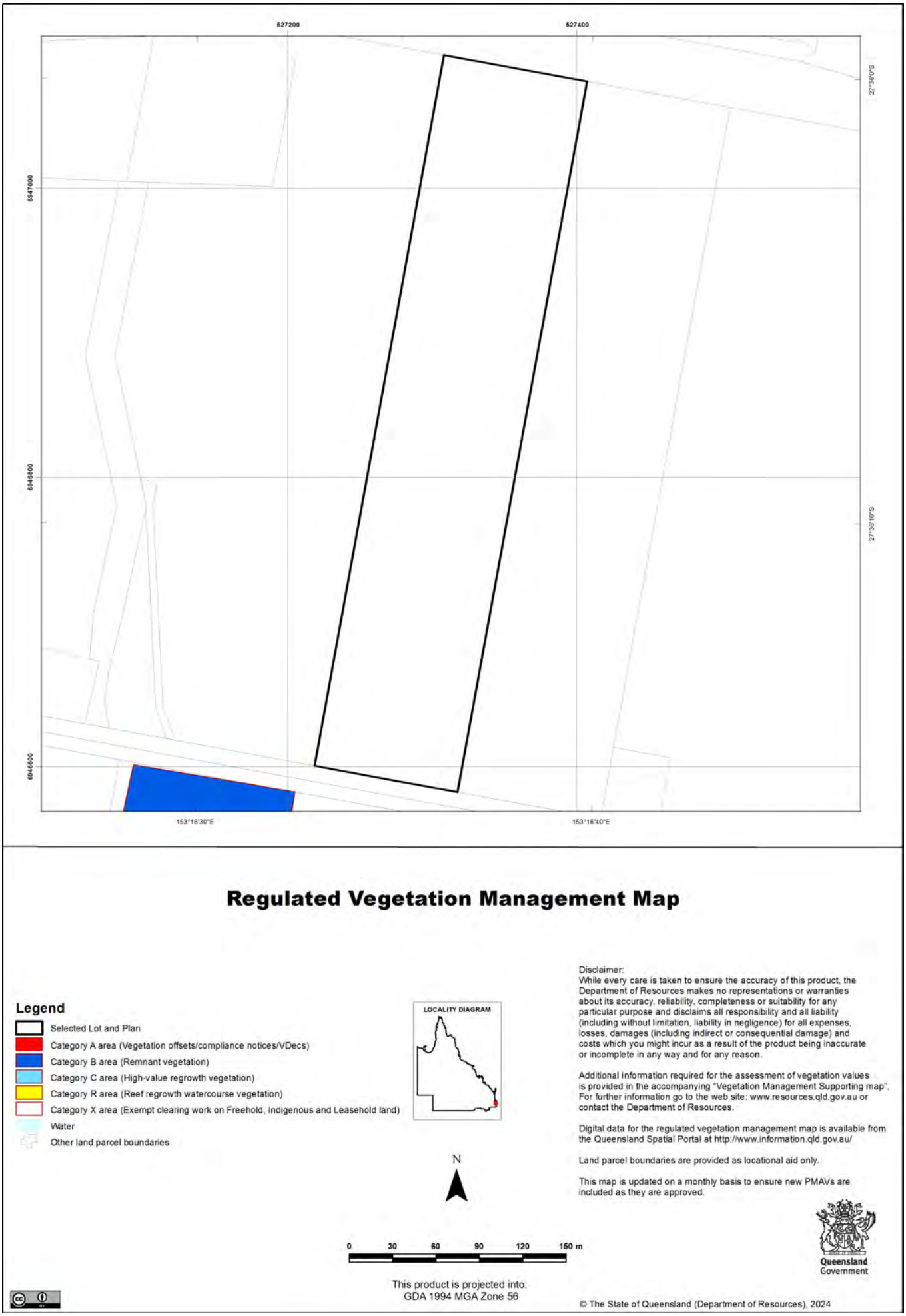
Coastal/non-coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

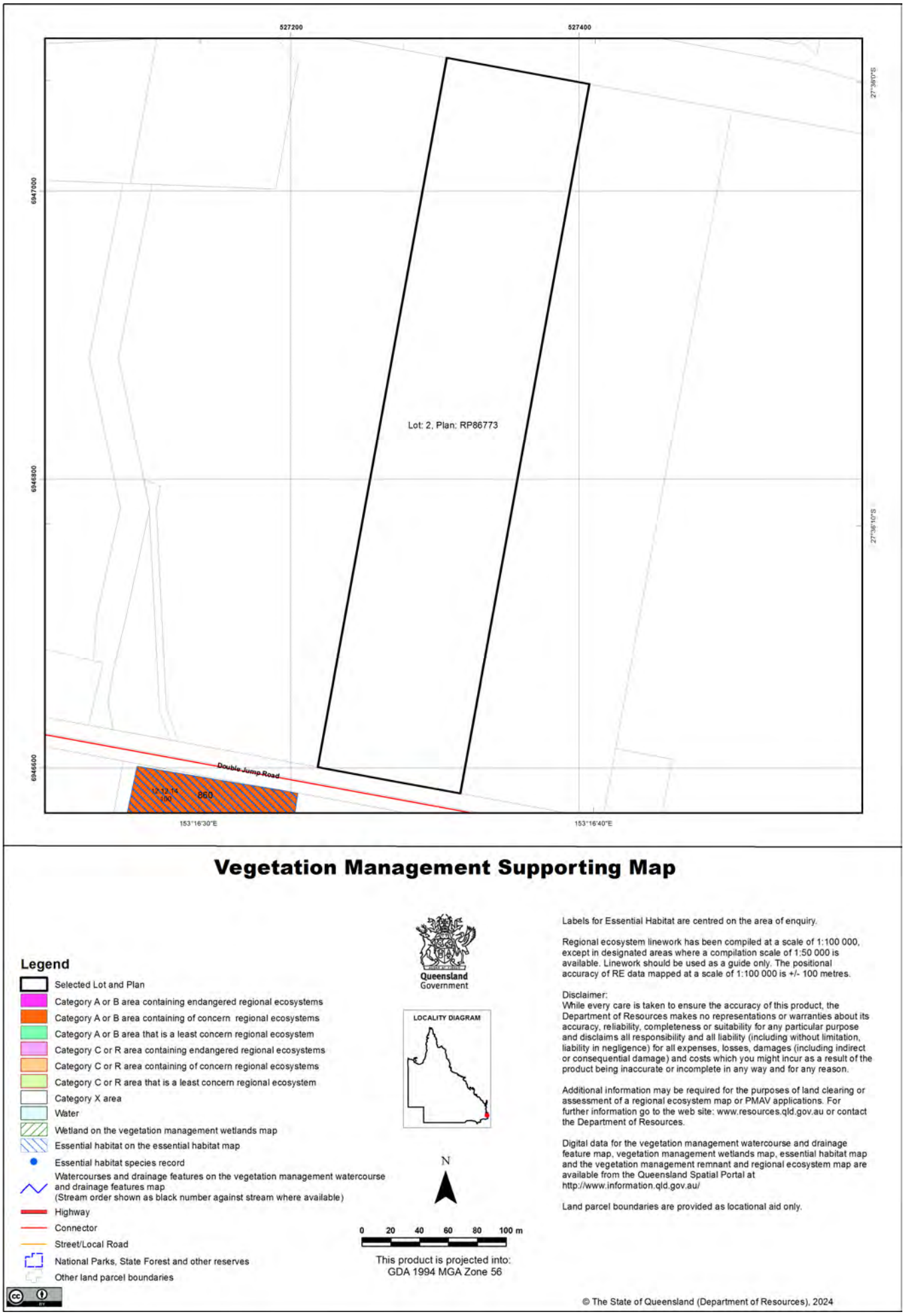
Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

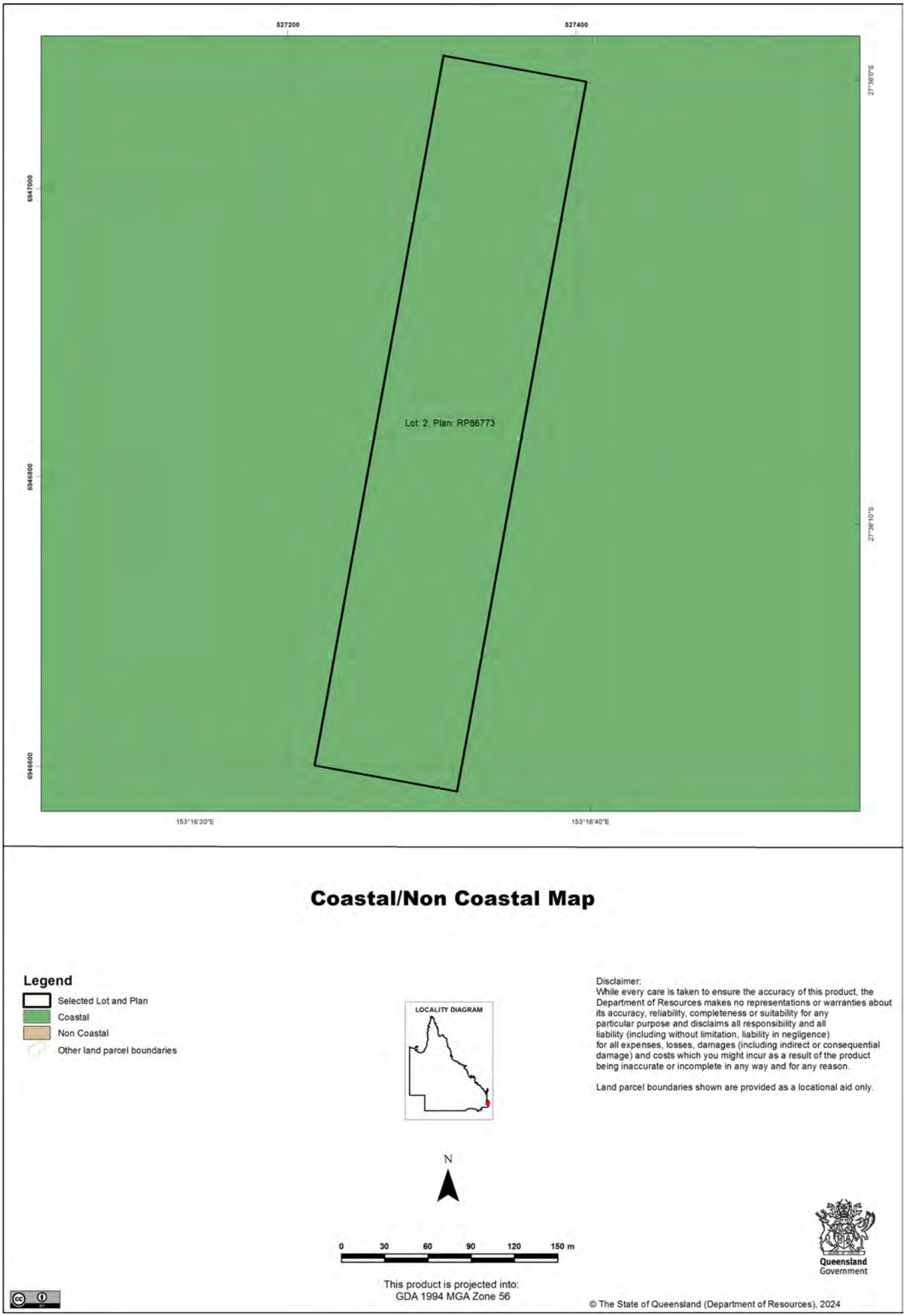
4.1 Regulated vegetation management map



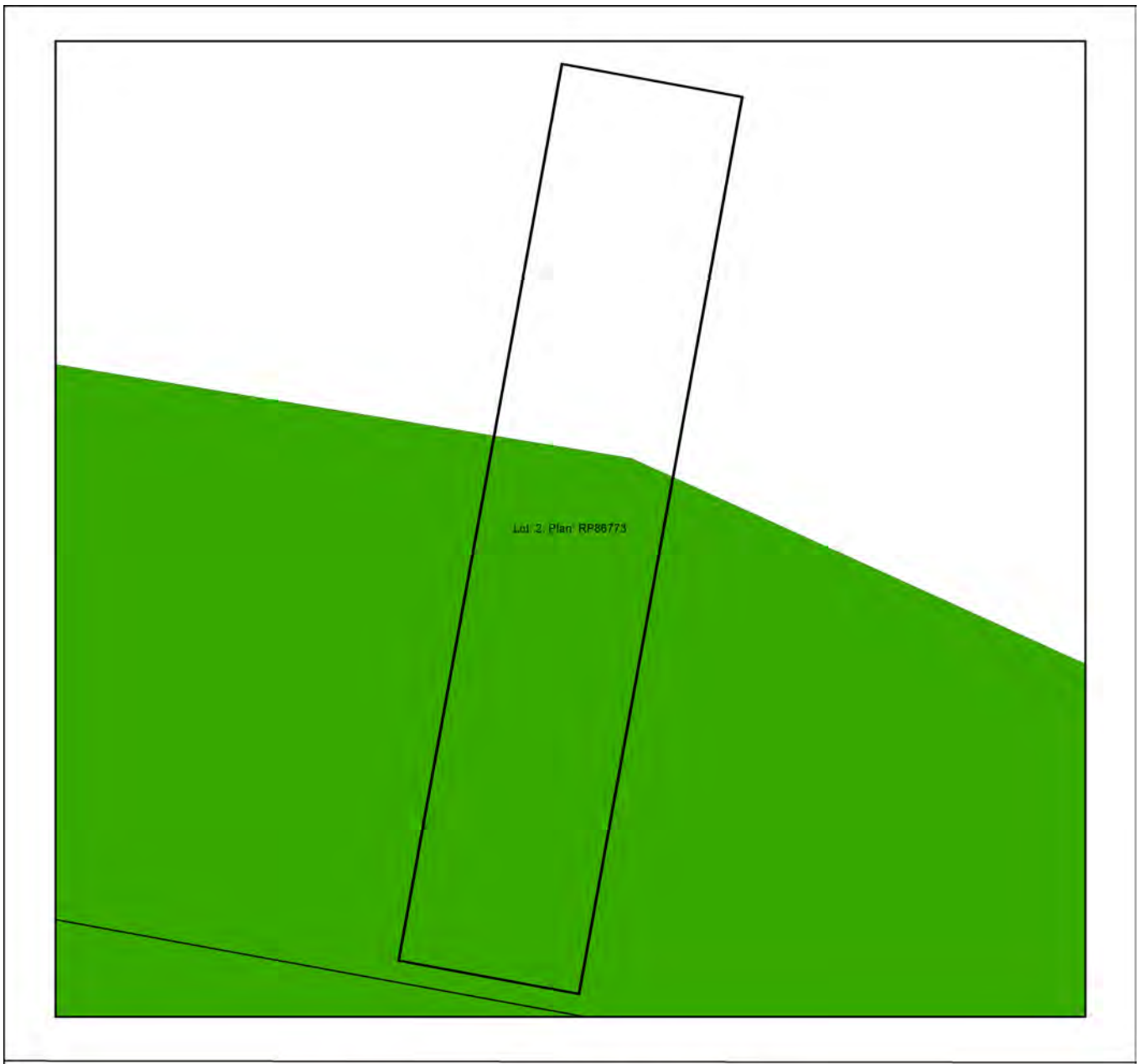
4.2 Vegetation management supporting map



4.3 Coastal/non-coastal map



4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture



5. Protected plants framework (administered by the Department of Environment and Science (DES))

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992* (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see Operational policy: When a protected plant in Queensland is considered to be 'in the wild') that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for threatened and near threatened plants. These are areas where threatened or near threatened plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the Flora survey guidelines. The main objective of a flora survey is to locate any threatened or near threatened plants that may be present in the clearing impact area.

If the flora survey identifies that threatened or near threatened plants are not present within the clearing impact area or clearing within 100m of a threatened or near threatened plant can be avoided, the clearing activity is exempt from a permit. An exempt clearing notification form must be submitted to the Department of Environment and Science, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that threatened or near threatened plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the clearing permit application form.

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that threatened or near threatened plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DES

For further information on the protected plants framework:
Phone 1300 130 372 (and select option four)
Email palm@des.qld.gov.au
Visit https://www.qld.gov.au/environment/plants-animals/plants/protected-plants

5.5 Protected plants flora survey trigger map

This map included may also be requested individually at: https://apps.des.qld.gov.au/map-request/flora-survey-trigger/.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the clearing of protected plants for more information.

Protected Plants Flora Survey Trigger Map

Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets

N

0 20 40 60 80 100 m

This product is projected into:
GDA 1994 MGA Zone 56

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@des.qld.gov.au

Disclaimer:
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

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6. Koala protection framework (administered by the Department of Environment and Science (DES))

The koala (*Phascolarctos cinereus*) is listed in Queensland as endangered by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.
Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document Spatial modelling in South East Queensland.

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document Guideline - Requests to make, amend or revoke a koala habitat area determination.

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley,

Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

1) Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
2) Does not include destroying standing vegetation by stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the Planning Regulation 2017. More information on exempted development can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:
  - the local government planning scheme makes the development assessable;
  - the premises includes an area that is both a koala priority area and a koala habitat area; and
  - the development does not involve interfering with koala habitat (defined above); and

- development in identified koala broad-hectare areas.

The Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the Nature Conservation (Koala) Conservation Plan 2017 prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DES

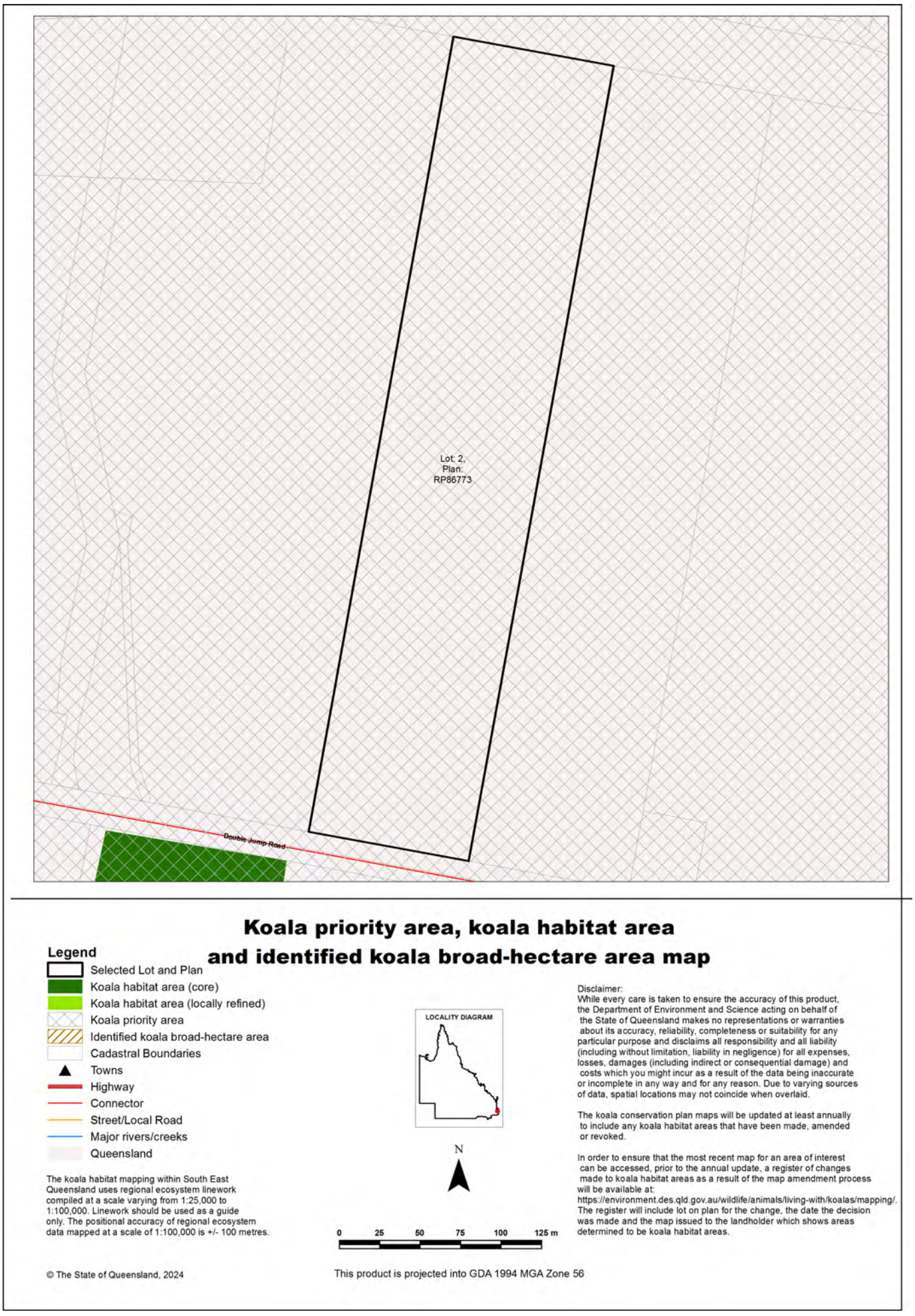
For further information on the koala protection framework:
Phone 13 QGOV (13 74 68)
Email koala.assessment@des.qld.gov.au
Visit https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping

7. Koala protection framework details for Lot: 2 Plan: RP86773

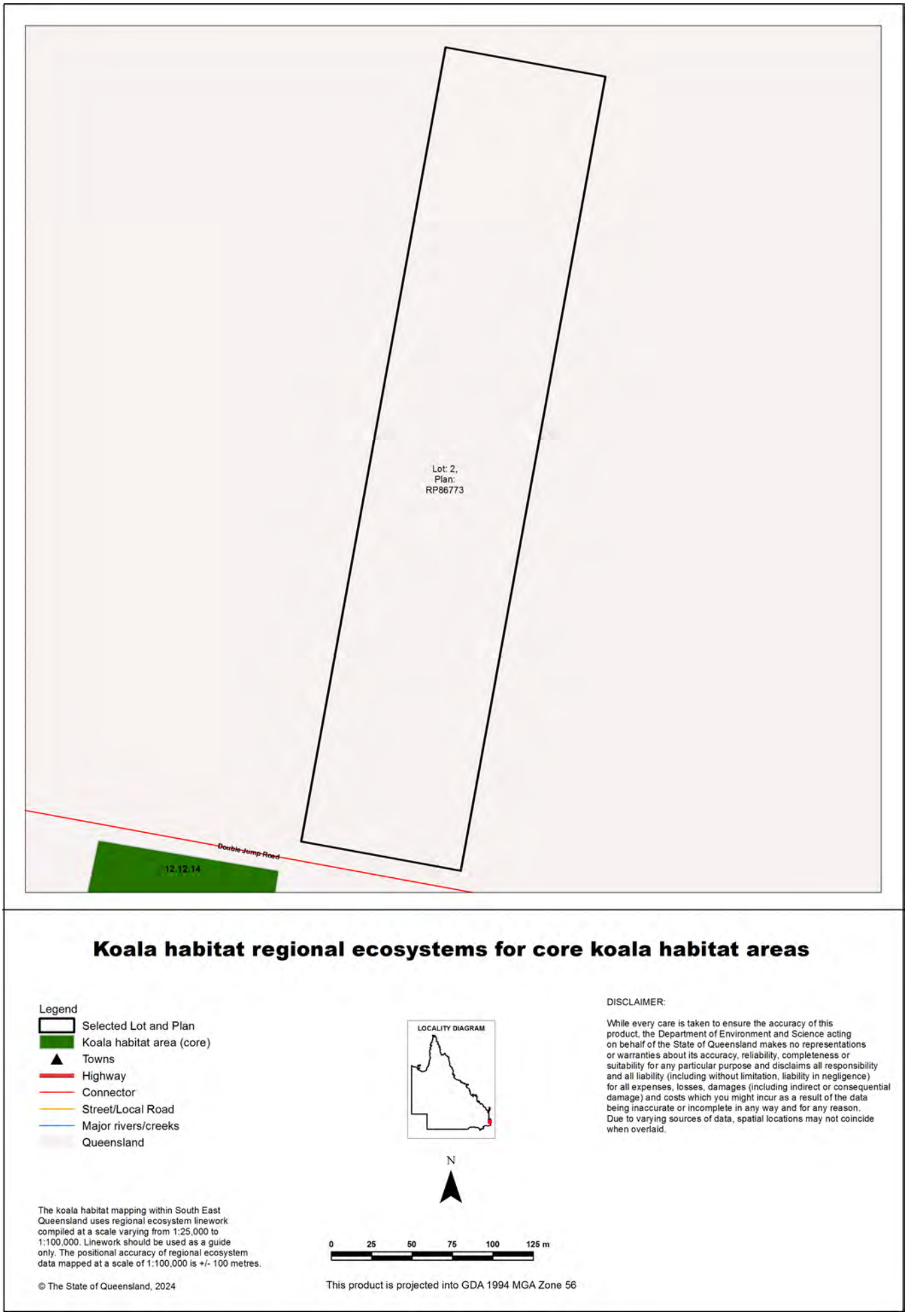
7.1 Koala districts

Koala District A

7.2 Koala priority area, koala habitat area and identified koala broad-hectare area map



7.3 Koala habitat regional ecosystems for core koala habitat areas



8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
• Interference with overland flow • Earthworks, significant disturbance	*Water Act 2000* *Soil Conservation Act 1986*	Department of Regional Development, Manufacturing and Water (Queensland Government) Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.rdmw.qld.gov.au www.resources.qld.gov.au
• Indigenous Cultural Heritage	*Aboriginal Cultural Heritage Act 2003* *Torres Strait Islander Cultural Heritage Act 2003*	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
• Mining and environmentally relevant activities • Infrastructure development (coastal) • Heritage issues	*Environmental Protection Act 1994* *Coastal Protection and Management Act 1995* *Queensland Heritage Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
• Protected plants and protected areas	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 1300 130 372 (option 4) palm@des.qld.gov.au www.des.qld.gov.au
• Koala mapping and regulations	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) Koala.assessment@des.qld.gov.au
• Interference with fish passage in a watercourse, mangroves • Forestry activities on State land tenures	*Fisheries Act 1994* *Forestry Act 1959*	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
• Matters of National Environmental Significance including listed threatened species and ecological communities	*Environment Protection and Biodiversity Conservation Act 1999*	Department of Agriculture, Water and the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
• Development and planning processes	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
• Local government requirements	*Local Government Act 2009* *Planning Act 2016*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office
• Harvesting timber in the Wet Tropics of Qld World Heritage area	*Wet Tropics World Heritage Protection and Management Act 1993*	Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au

resources.QLD.GOV.AU

Vegetation management report

For Lot: 5 Plan: SP293881

13/02/2024

Queensland Government

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Recent changes

Updated mapping

Updated vegetation mapping was released on 22 November 2023 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, essential habitat, wetland and high-value regrowth mapping.

The Department of Environment and Science have also updated their koala protection mapping to align with the Queensland Herbarium scientific updates.

The latest version (v10) of the Protected Plants Flora Survey Trigger Map (trigger map) was released on 6 September 2023.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Resources who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:

- the vegetation management framework, which may include:
  - exempt clearing work;
  - accepted development vegetation clearing code;
  - an area management plan;
  - a development approval;

- the protected plant framework, which may include:
  - the need to undertake a flora survey;
  - exempt clearing;
  - a protected plant clearing permit;

- the koala protection framework, which may include:
  - exempted development;
  - a development approval;
  - the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 5 Plan: SP293881, are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
5	SP293881	Freehold	124,000
B	SP293881	Easement	948
A	SP293881	Easement	7,174

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

Does this property have a freehold tenure and is in the Wet Tropics of Queensland World Heritage Area?

No, this property is not located in the Wet Tropics of Queensland World Heritage Area.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 5 Plan: SP293881, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Redland City

Bioregion(s)	Subregion(s)
Southeast Queensland	Sunshine Coast - Gold Coast Lowlands
Southeast Queensland	Burringbar - Conondale Ranges

Catchment(s)
Logan-Albert

2. Vegetation management framework (administered by the Department of Resources)

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2023, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem identified in the Vegetation Management Regional Ecosystem Description Database (VM REDD) as having a grassland structure; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Resources or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Resources before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Resources prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Resources before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at
https://vegetation-apps.dnrm.qld.gov.au

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Resources and then follow the conditions and requirements listed in the AMP.
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:
Phone 135VEG (135 834)
Email vegetation@resources.qld.gov.au
Visit https://www.resources.qld.gov.au/?contact=vegetation to submit an online enquiry.

3. Vegetation management framework for Lot: 5 Plan: SP293881

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 12.4ha

Vegetation category	Area (ha)
Category X	12.4

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Resources to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department of Resources to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

The following Property Map of Assessable Vegetation (PMAVs) may be present on this property:

Reference number

2018/001214

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at
https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
non-rem	None	X	12.40	None	None

Please note:

1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or

2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

No records

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

No Class A

Class B (with urban areas masked as per SPP): 8.55ha

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 5 Plan: SP293881.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:
https://www.resources.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new property maps of assessable vegetation (PMAV).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

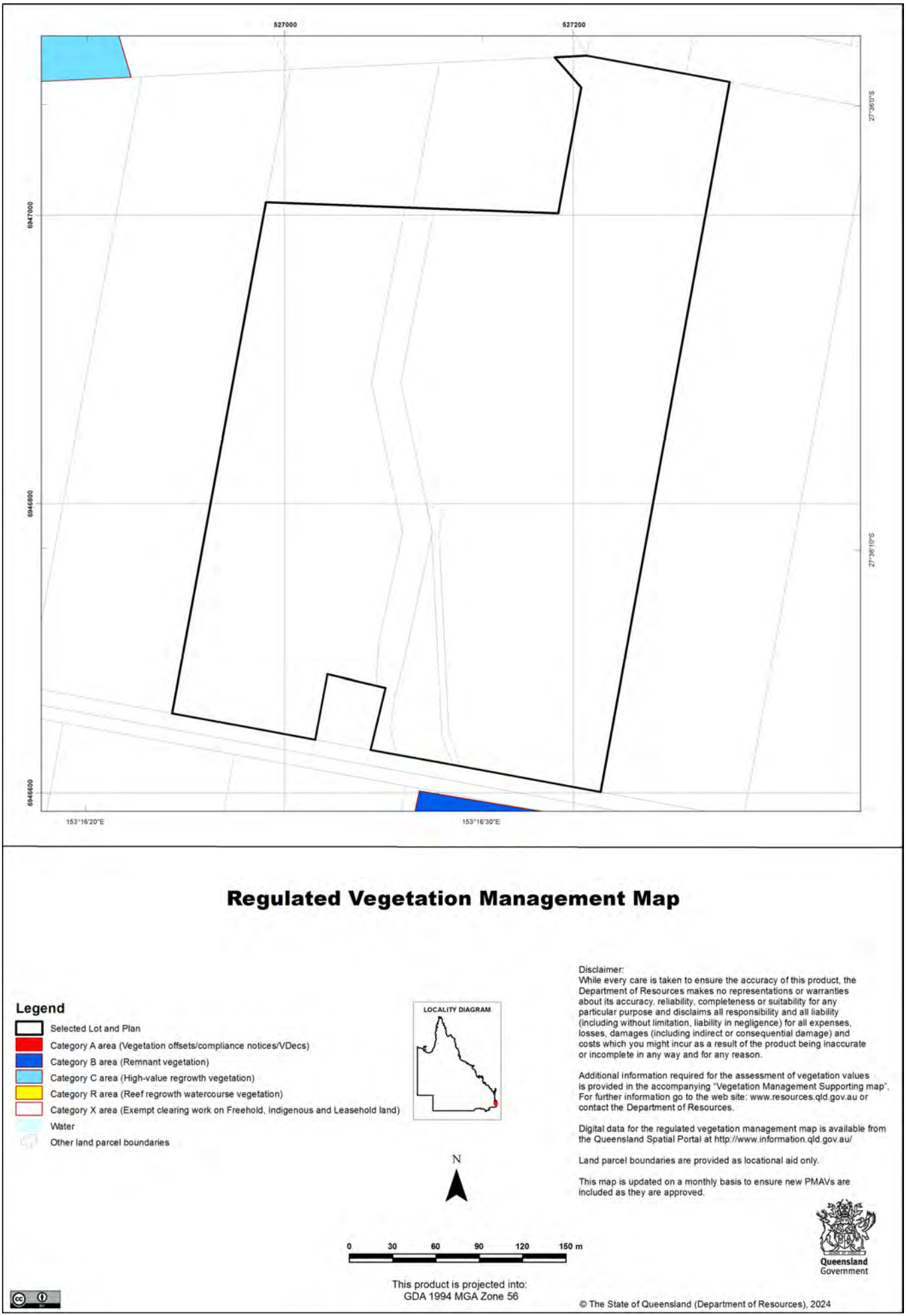
Coastal/non-coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

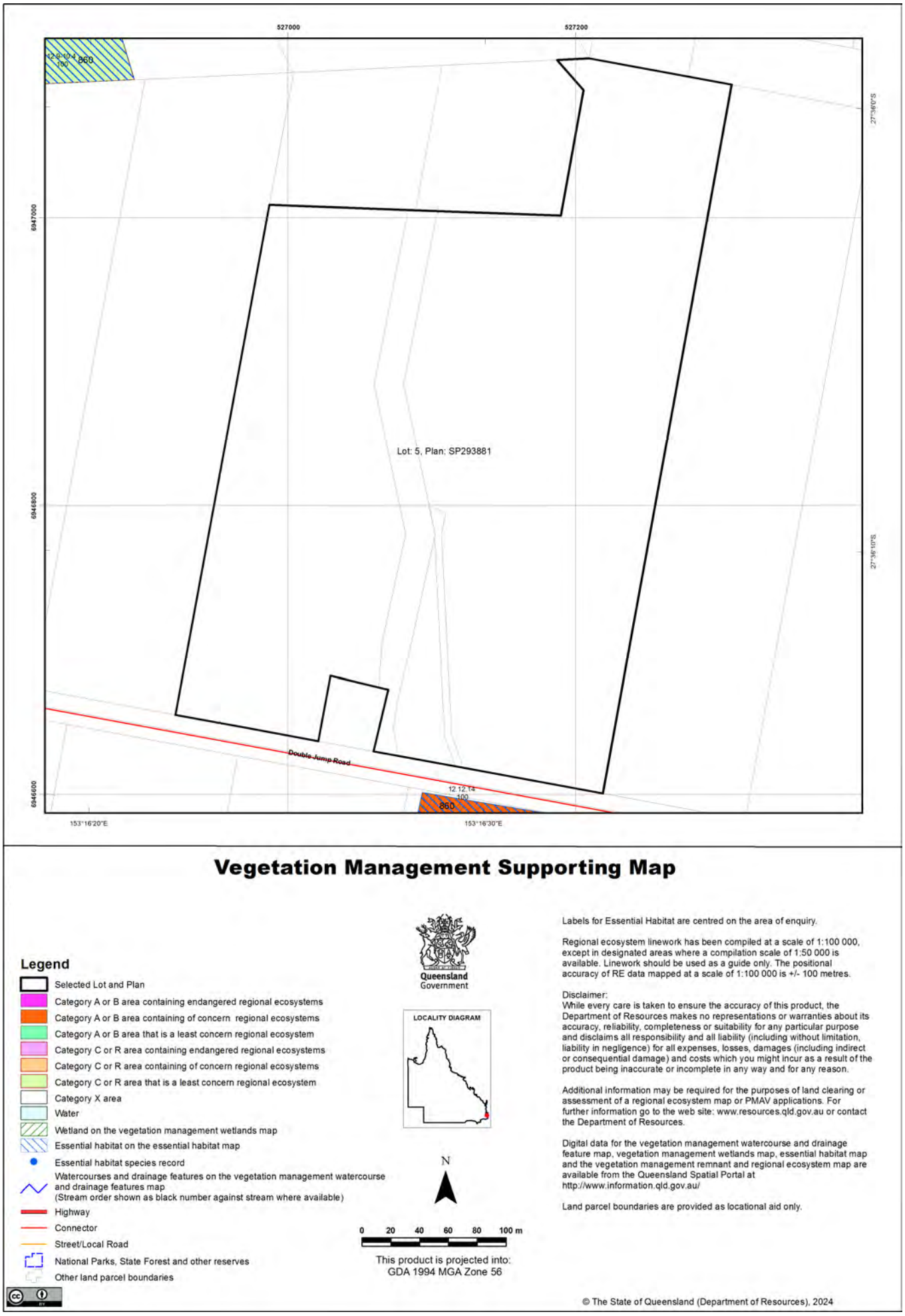
Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

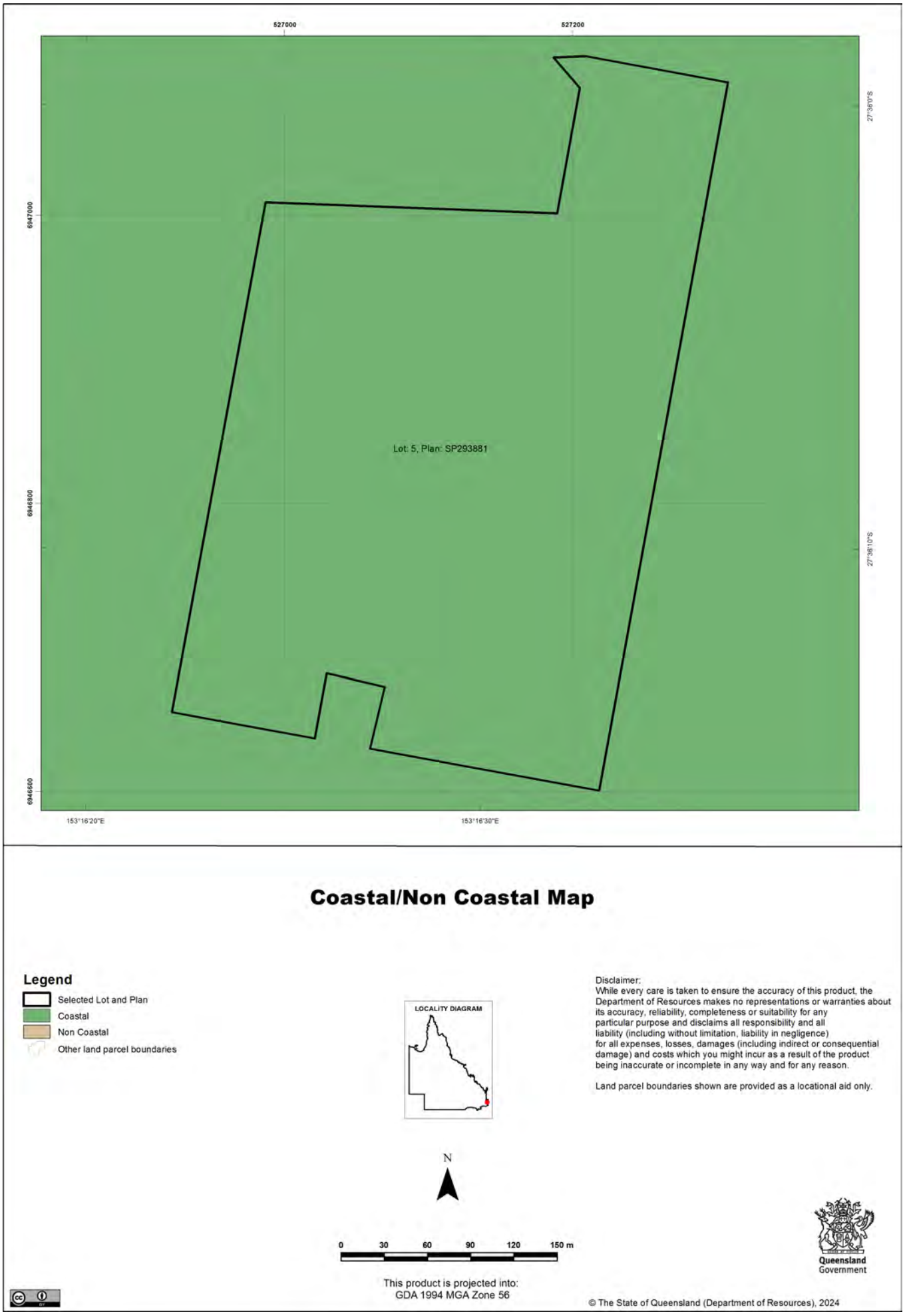
4.1 Regulated vegetation management map



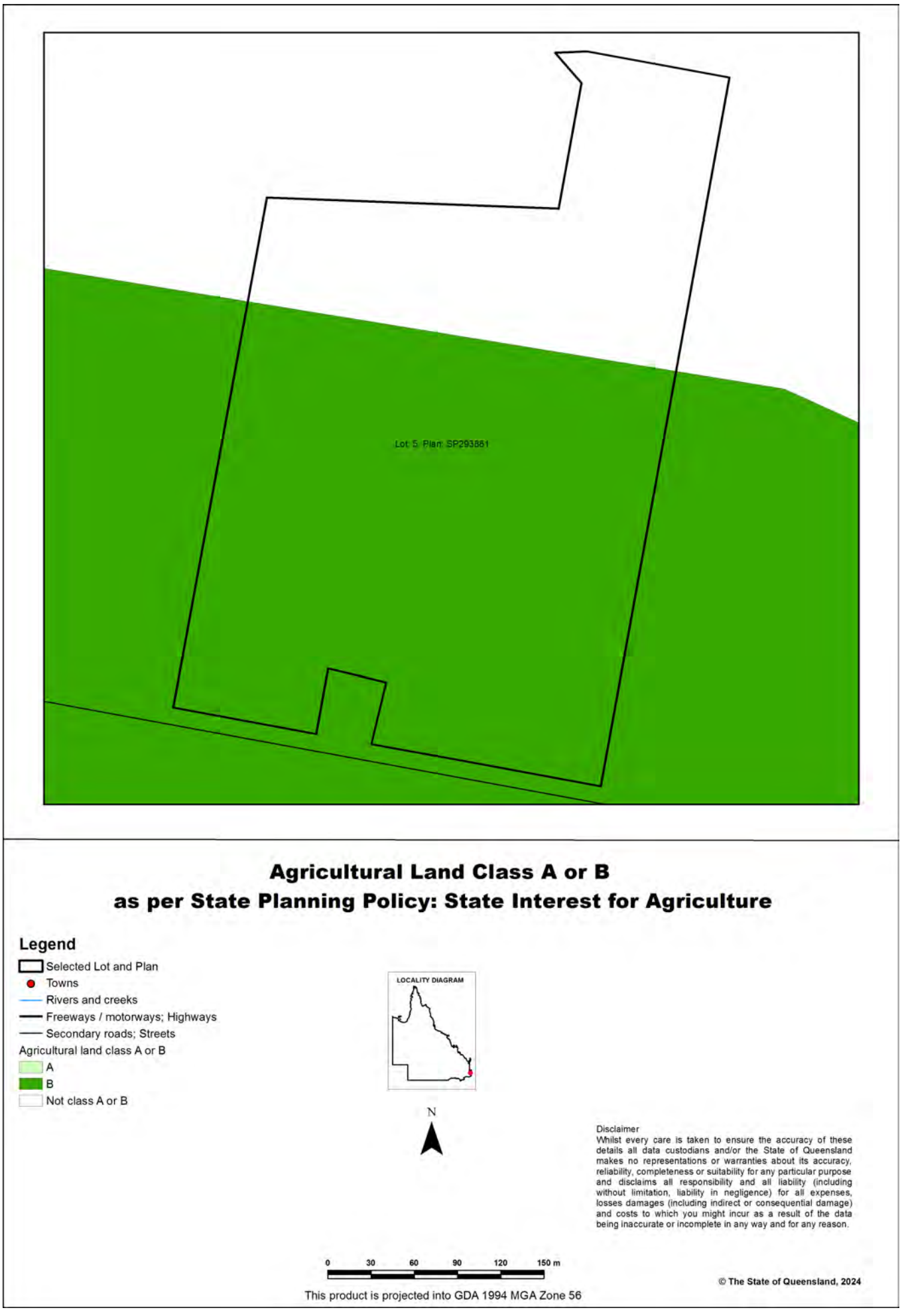
4.2 Vegetation management supporting map



4.3 Coastal/non-coastal map



4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture



5. Protected plants framework (administered by the Department of Environment and Science (DES))

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992* (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see Operational policy: When a protected plant in Queensland is considered to be 'in the wild') that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for threatened and near threatened plants. These are areas where threatened or near threatened plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the Flora survey guidelines. The main objective of a flora survey is to locate any threatened or near threatened plants that may be present in the clearing impact area.

If the flora survey identifies that threatened or near threatened plants are not present within the clearing impact area or clearing within 100m of a threatened or near threatened plant can be avoided, the clearing activity is exempt from a permit. An exempt clearing notification form must be submitted to the Department of Environment and Science, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that threatened or near threatened plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the clearing permit application form.

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that threatened or near threatened plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DES

For further information on the protected plants framework:
Phone 1300 130 372 (and select option four)
Email palm@des.qld.gov.au
Visit https://www.qld.gov.au/environment/plants-animals/plants/protected-plants

5.5 Protected plants flora survey trigger map

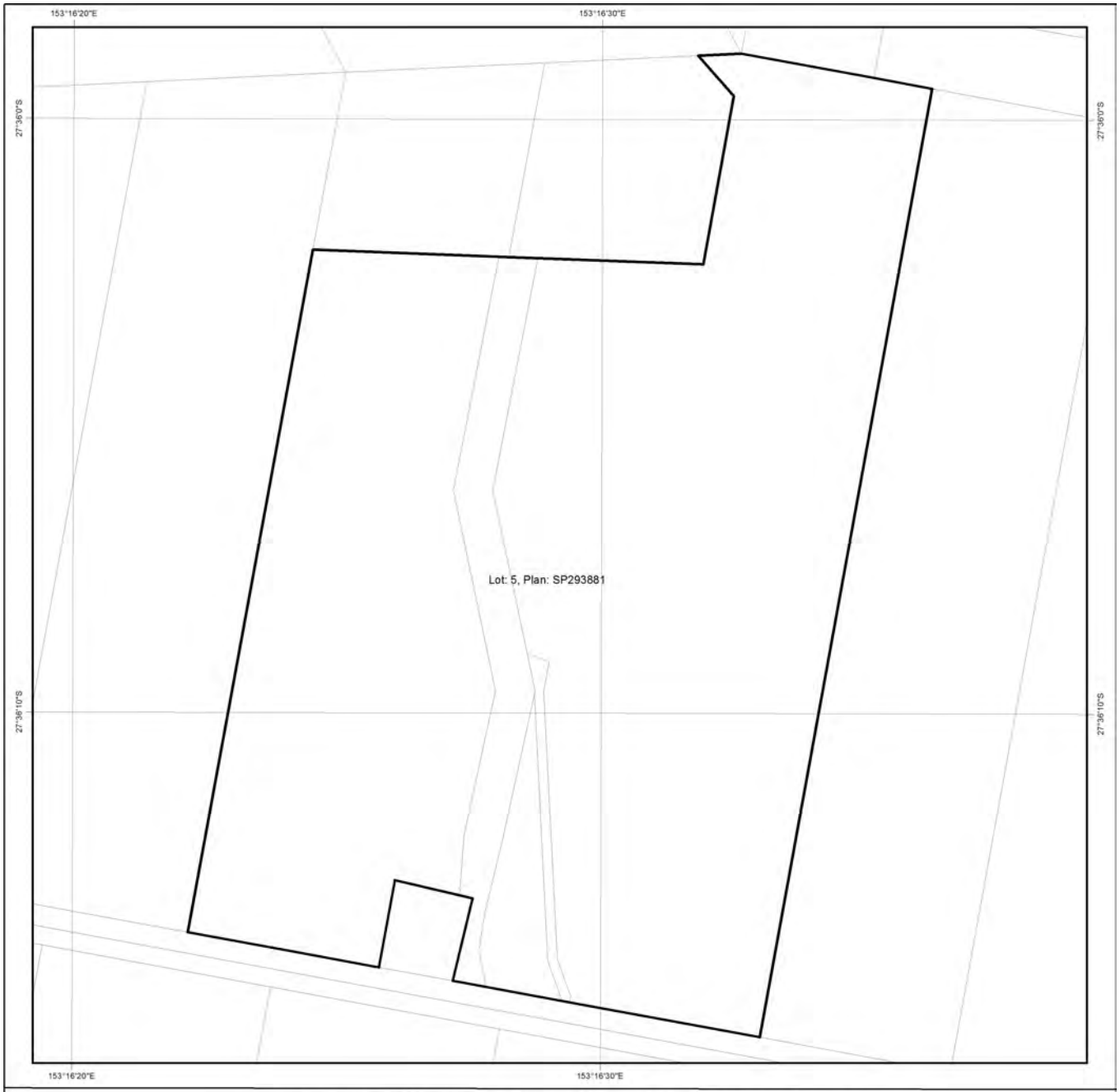
This map included may also be requested individually at: https://apps.des.qld.gov.au/map-request/flora-survey-trigger/.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the clearing of protected plants for more information.



Protected Plants Flora Survey Trigger Map

Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets

N

0 20 40 60 80 100 m

This product is projected into:
GDA 1994 MGA Zone 56

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@des.qld.gov.au

Disclaimer:
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

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6. Koala protection framework (administered by the Department of Environment and Science (DES))

The koala (*Phascolarctos cinereus*) is listed in Queensland as endangered by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.
Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document Spatial modelling in South East Queensland.

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document Guideline - Requests to make, amend or revoke a koala habitat area determination.

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley,

Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

1) Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
2) Does not include destroying standing vegetation by stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the Planning Regulation 2017. More information on exempted development can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:
  - the local government planning scheme makes the development assessable;
  - the premises includes an area that is both a koala priority area and a koala habitat area; and
  - the development does not involve interfering with koala habitat (defined above); and

- development in identified koala broad-hectare areas.

The Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the Nature Conservation (Koala) Conservation Plan 2017 prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DES

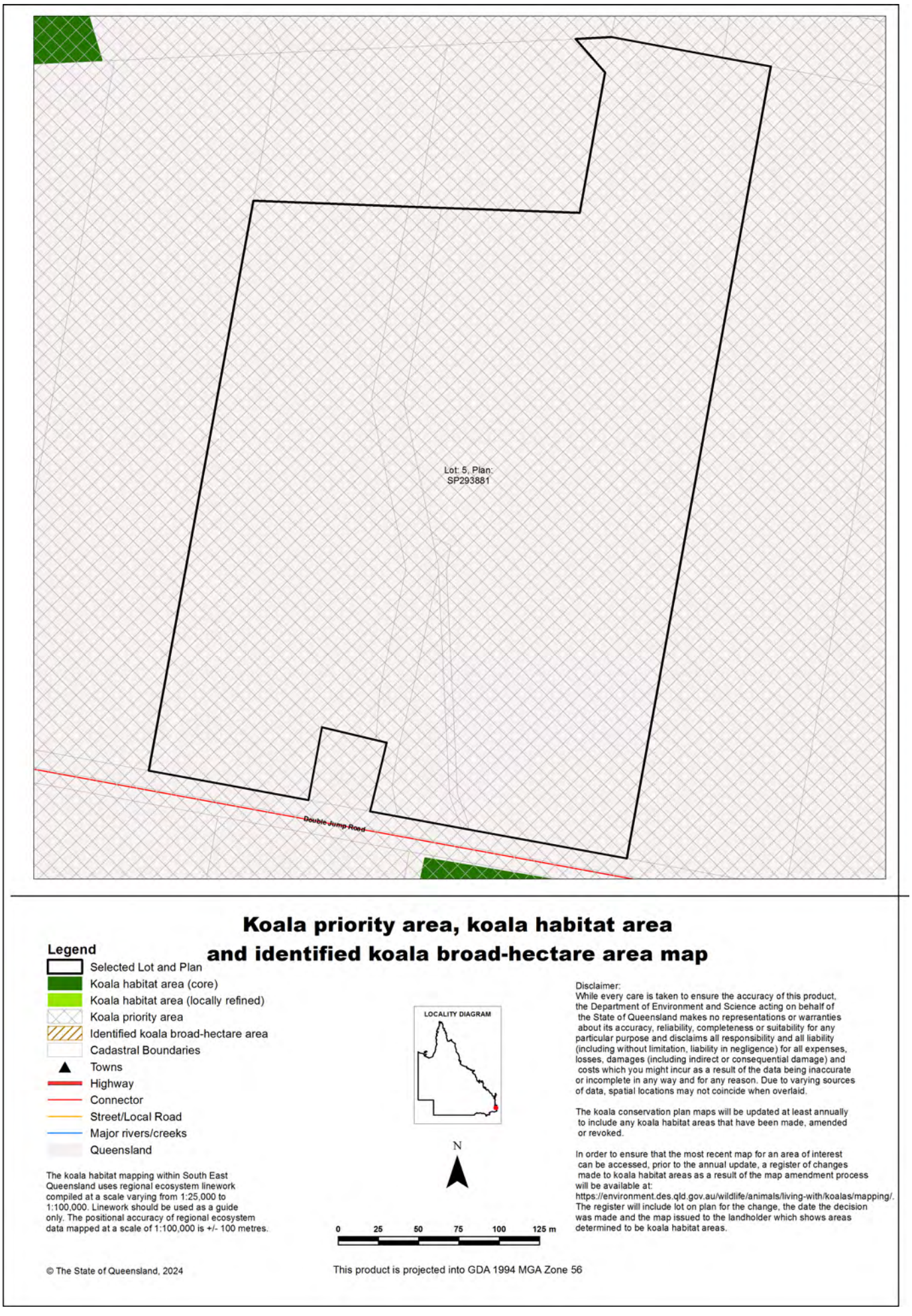
For further information on the koala protection framework:
Phone 13 QGOV (13 74 68)
Email koala.assessment@des.qld.gov.au
Visit https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping

7. Koala protection framework details for Lot: 5 Plan: SP293881

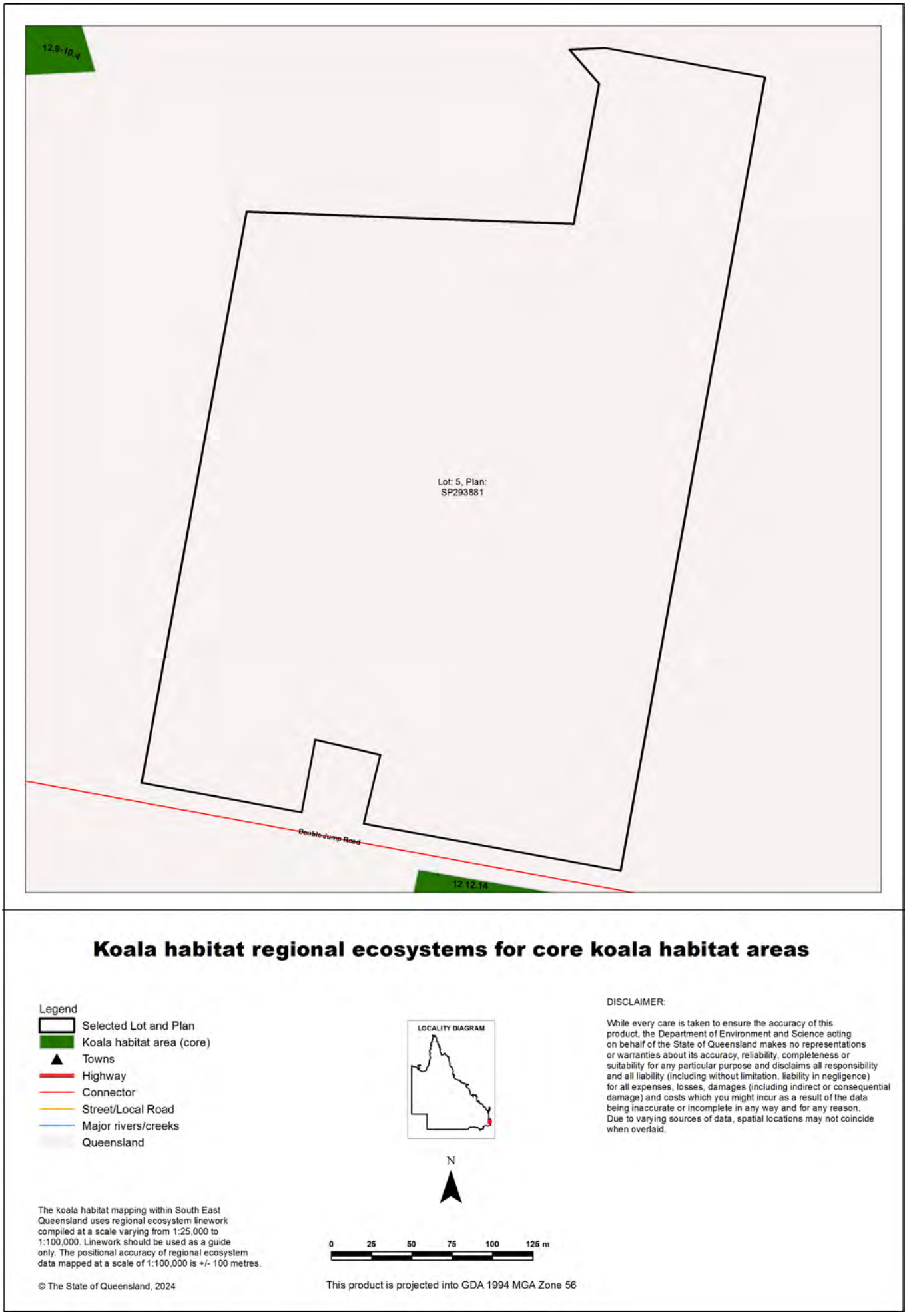
7.1 Koala districts

Koala District A

7.2 Koala priority area, koala habitat area and identified koala broad-hectare area map



7.3 Koala habitat regional ecosystems for core koala habitat areas



8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
• Interference with overland flow • Earthworks, significant disturbance	*Water Act 2000* *Soil Conservation Act 1986*	Department of Regional Development, Manufacturing and Water (Queensland Government) Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.rdmw.qld.gov.au www.resources.qld.gov.au
• Indigenous Cultural Heritage	*Aboriginal Cultural Heritage Act 2003* *Torres Strait Islander Cultural Heritage Act 2003*	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
• Mining and environmentally relevant activities • Infrastructure development (coastal) • Heritage issues	*Environmental Protection Act 1994* *Coastal Protection and Management Act 1995* *Queensland Heritage Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
• Protected plants and protected areas	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 1300 130 372 (option 4) palm@des.qld.gov.au www.des.qld.gov.au
• Koala mapping and regulations	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) Koala.assessment@des.qld.gov.au
• Interference with fish passage in a watercourse, mangroves • Forestry activities on State land tenures	*Fisheries Act 1994* *Forestry Act 1959*	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
• Matters of National Environmental Significance including listed threatened species and ecological communities	*Environment Protection and Biodiversity Conservation Act 1999*	Department of Agriculture, Water and the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
• Development and planning processes	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
• Local government requirements	*Local Government Act 2009* *Planning Act 2016*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office
• Harvesting timber in the Wet Tropics of Qld World Heritage area	*Wet Tropics World Heritage Protection and Management Act 1993*	Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au

resources.QLD.GOV.AU

Vegetation management report

For Lot: 23 Plan: SP325035

13/02/2024

Queensland Government

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Recent changes

Updated mapping

Updated vegetation mapping was released on 22 November 2023 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, essential habitat, wetland and high-value regrowth mapping.

The Department of Environment and Science have also updated their koala protection mapping to align with the Queensland Herbarium scientific updates.

The latest version (v10) of the Protected Plants Flora Survey Trigger Map (trigger map) was released on 6 September 2023.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Resources who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:

- the vegetation management framework, which may include:
  - exempt clearing work;
  - accepted development vegetation clearing code;
  - an area management plan;
  - a development approval;

- the protected plant framework, which may include:
  - the need to undertake a flora survey;
  - exempt clearing;
  - a protected plant clearing permit;

- the koala protection framework, which may include:
  - exempted development;
  - a development approval;
  - the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

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1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 23 Plan: SP325035, are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
23	SP325035	Freehold	155,600
A	SP325035	Easement	13,060

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

Does this property have a freehold tenure and is in the Wet Tropics of Queensland World Heritage Area?

No, this property is not located in the Wet Tropics of Queensland World Heritage Area.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 23 Plan: SP325035, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Redland City

Bioregion(s)	Subregion(s)
Southeast Queensland	Sunshine Coast - Gold Coast Lowlands
Southeast Queensland	Burringbar - Conondale Ranges

Catchment(s)
Logan-Albert

2. Vegetation management framework (administered by the Department of Resources)

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2023, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem identified in the Vegetation Management Regional Ecosystem Description Database (VM REDD) as having a grassland structure; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Resources or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Resources before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Resources prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Resources before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at
https://vegetation-apps.dnrm.qld.gov.au

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Resources and then follow the conditions and requirements listed in the AMP.
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:
Phone 135VEG (135 834)
Email vegetation@resources.qld.gov.au
Visit https://www.resources.qld.gov.au/?contact=vegetation to submit an online enquiry.

3. Vegetation management framework for Lot: 23 Plan: SP325035

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 15.58ha

Vegetation category	Area (ha)
Category B	0.9
Category X	14.6

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Resources to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department of Resources to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

The following Property Map of Assessable Vegetation (PMAVs) may be present on this property:

Reference number

2016/003955

2018/001209

2018/001213

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at
https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
12.3.6	Least concern	B	0.95	Melaleuca quinquenervia +/- Eucalyptus tereticornis, Lophostemon suaveolens, Corymbia intermedia open forest on coastal alluvial plains	Mid-dense
non-rem	None	X	14.63	None	None

Please note:

1. All area and area derived figures included in this table have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 1994). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.
2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

Vegetation management wetlands are present on this property and are shown on the vegetation management supporting map in section 4.2 of this report.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or

2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
686	Crinia tinnula	wallum froglet	V	Vegetation community is a mandatory essential habitat factor for this species. Permanent to ephemeral acidic (pH 4.3 - 5.2), soft freshwater in Melaleuca (e.g. M. quinquenervia) swamps, sedgeland, wet and dry heathland (e.g. Banksia robur, Xanthorrhoea) and wallum (Banksia aemula shrubland/woodland) areas coastal lowlands on sand or sandstone, occasionally in adjacent open forest/woodland (e.g. Eucalyptus racemosa, Corymbia citriodora) with heathy understorey; known to persist in small remnants (<10ha); may be found well away from water.	Sea level to 150m.	Sandy and sandy-alluvial substrates.	None
860	Phascolarctos cinereus	koala	E	Open forests and woodlands containing Eucalyptus, Corymbia, Lophostemon or Melaleuca trees having a trunk of a diameter of more than 10cm at 1.3m above the ground. Tree species used for food and habitat varies across the state and can include: Corymbia citriodora, Corymbia henryi, Corymbia intermedia, Eucalyptus acmenoides, Eucalyptus bancroftii, Eucalyptus biturbinata, Eucalyptus blakelyi, Eucalyptus brownii, Eucalyptus camaldulensis, Eucalyptus carnea, Eucalyptus chloroclada, Eucalyptus coolabah, Eucalyptus crebra, Eucalyptus dealbata, Eucalyptus drepanophylla, Eucalyptus dunnii, Eucalyptus eugenioides, Eucalyptus exserta, Eucalyptus fibrosa, Eucalyptus grandis, Eucalyptus helidonica, Eucalyptus latisinensis, Eucalyptus longirostrata, Eucalyptus major, Eucalyptus melanophloia, Eucalyptus melliodora, Eucalyptus microcarpa, Eucalyptus microcorys, Eucalyptus microtheca, Eucalyptus moluccana, Eucalyptus montivaga, Eucalyptus orgadophila, Eucalyptus papuana, Eucalyptus pilularis, Eucalyptus platyphylla, Eucalyptus populnea, Eucalyptus portuensis, Eucalyptus propinqua, Eucalyptus racemosa, Eucalyptus resinifera, Eucalyptus robusta, Eucalyptus saligna, Eucalyptus seeana, Eucalyptus siderophloia, Eucalyptus sideroxylon, Eucalyptus tereticornis, Eucalyptus thozetiana, Eucalyptus tindaliae, Eucalyptus umbra, Lophostemon confertus, Melaleuca leucadendra, Melaleuca quinquenervia.	Sea level to 1000m.	None	Riparian areas, plains and hill/escarpment slopes.

Label	Regional Ecosystem (mandatory unless otherwise specified)
686	12.2.5, 12.2.7, 12.2.9, 12.2.10, 12.2.12, 12.2.15, 12.3.4, 12.3.5, 12.3.6, 12.3.12, 12.3.14, 12.3.20, 12.5.2, 12.5.10. These regional ecosystems are not a mandatory essential habitat factor for this species.

Label	Regional Ecosystem (mandatory unless otherwise specified)
860	4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.8, 4.3.10, 4.3.11, 4.5.3, 4.5.5, 4.5.6, 4.5.8, 4.5.9, 4.7.1, 4.7.7, 4.7.8, 4.9.6, 4.9.10, 4.9.12, 4.9.17, 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.7, 6.3.8, 6.3.9, 6.3.11, 6.3.12, 6.3.17, 6.3.18, 6.3.22, 6.3.24, 6.3.25, 6.4.1, 6.4.2, 6.4.3, 6.4.4, 6.5.1, 6.5.2, 6.5.3, 6.5.5, 6.5.6, 6.5.7, 6.5.8, 6.5.9, 6.5.10, 6.5.11, 6.5.13, 6.5.14, 6.5.15, 6.5.16, 6.5.17, 6.5.18, 6.5.19, 6.6.2, 6.7.1, 6.7.2, 6.7.5, 6.7.6, 6.7.7, 6.7.9, 6.7.11, 6.7.12, 6.7.13, 6.7.14, 6.7.17, 6.9.3, 7.2.3, 7.2.4, 7.2.7, 7.2.11, 7.3.7, 7.3.8, 7.3.9, 7.3.12, 7.3.13, 7.3.14, 7.3.16, 7.3.19, 7.3.20, 7.3.21, 7.3.25, 7.3.26, 7.3.39, 7.3.40, 7.3.42, 7.3.43, 7.3.44, 7.3.45, 7.3.47, 7.3.48, 7.3.50, 7.5.1, 7.5.2, 7.5.3, 7.5.4, 7.8.7, 7.8.8, 7.8.10, 7.8.15, 7.8.16, 7.8.17, 7.8.18, 7.8.19, 7.11.5, 7.11.6, 7.11.13, 7.11.14, 7.11.16, 7.11.18, 7.11.19, 7.11.20, 7.11.21, 7.11.31, 7.11.32, 7.11.33, 7.11.34, 7.11.35, 7.11.37, 7.11.41, 7.11.42, 7.11.43, 7.11.44, 7.11.45, 7.11.46, 7.11.47, 7.11.48, 7.11.49, 7.11.50, 7.11.51, 7.12.4, 7.12.5, 7.12.17, 7.12.21, 7.12.22, 7.12.23, 7.12.24, 7.12.25, 7.12.26, 7.12.27, 7.12.28, 7.12.29, 7.12.30, 7.12.33, 7.12.34, 7.12.35, 7.12.51, 7.12.52, 7.12.53, 7.12.54, 7.12.55, 7.12.56, 7.12.57, 7.12.58, 7.12.59, 7.12.60, 7.12.61, 7.12.62, 7.12.63, 7.12.65, 7.12.66, 7.12.69, 8.1.5, 8.2.3, 8.2.6, 8.2.7, 8.2.8, 8.2.11, 8.2.12, 8.2.13, 8.2.14, 8.3.1, 8.3.2, 8.3.3, 8.3.5, 8.3.6, 8.3.8, 8.3.10, 8.3.11, 8.3.13, 8.5.1, 8.5.2, 8.5.3, 8.5.5, 8.5.6, 8.5.7, 8.9.1, 8.10.1, 8.11.1, 8.11.3, 8.11.4, 8.11.5, 8.11.6, 8.11.8, 8.11.10, 8.11.12, 8.12.4, 8.12.5, 8.12.6, 8.12.7, 8.12.8, 8.12.9, 8.12.12, 8.12.14, 8.12.20, 8.12.22, 8.12.23, 8.12.25, 8.12.26, 8.12.27, 8.12.29, 8.12.31, 8.12.32, 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.3.5, 9.3.6, 9.3.7, 9.3.8, 9.3.10, 9.3.11, 9.3.13, 9.3.14, 9.3.15, 9.3.16, 9.3.17, 9.3.19, 9.3.20, 9.3.21, 9.3.22, 9.3.27, 9.4.1, 9.4.2, 9.5.1, 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, 9.5.8, 9.5.9, 9.5.10, 9.5.11, 9.5.12, 9.5.15, 9.5.16, 9.5.17, 9.7.1, 9.7.2, 9.7.3, 9.7.4, 9.7.5, 9.7.6, 9.8.1, 9.8.2, 9.8.3, 9.8.4, 9.8.5, 9.8.9, 9.8.10, 9.8.11, 9.8.13, 9.10.1, 9.10.3, 9.10.4, 9.10.5, 9.10.7, 9.10.8, 9.11.1, 9.11.2, 9.11.3, 9.11.4, 9.11.5, 9.11.7, 9.11.10, 9.11.12, 9.11.13, 9.11.14, 9.11.15, 9.11.16, 9.11.17, 9.11.18, 9.11.19, 9.11.21, 9.11.22, 9.11.23, 9.11.24, 9.11.25, 9.11.26, 9.11.28, 9.11.29, 9.11.30, 9.11.31, 9.11.32, 9.12.1, 9.12.2, 9.12.3, 9.12.4, 9.12.5, 9.12.6, 9.12.7, 9.12.10, 9.12.11, 9.12.12, 9.12.13, 9.12.14, 9.12.15, 9.12.16, 9.12.17, 9.12.18, 9.12.19, 9.12.20, 9.12.21, 9.12.22, 9.12.23, 9.12.24, 9.12.25, 9.12.26, 9.12.27, 9.12.28, 9.12.29, 9.12.30, 9.12.31, 9.12.32, 9.12.33, 9.12.35, 9.12.36, 9.12.37, 9.12.38, 9.12.39, 9.12.44, 10.3.2, 10.3.3, 10.3.4, 10.3.5, 10.3.6, 10.3.8, 10.3.9, 10.3.10, 10.3.11, 10.3.12, 10.3.13, 10.3.14, 10.3.15, 10.3.16, 10.3.17, 10.3.20, 10.3.22, 10.3.27, 10.3.28, 10.4.2, 10.4.3, 10.4.5, 10.4.8, 10.4.9, 10.5.1, 10.5.2, 10.5.4, 10.5.5, 10.5.7, 10.5.8, 10.5.9, 10.5.10, 10.5.11, 10.5.12, 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3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

No Class A

Class B (with urban areas masked as per SPP): 5.06ha

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 23 Plan: SP325035.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:
https://www.resources.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new property maps of assessable vegetation (PMAV).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

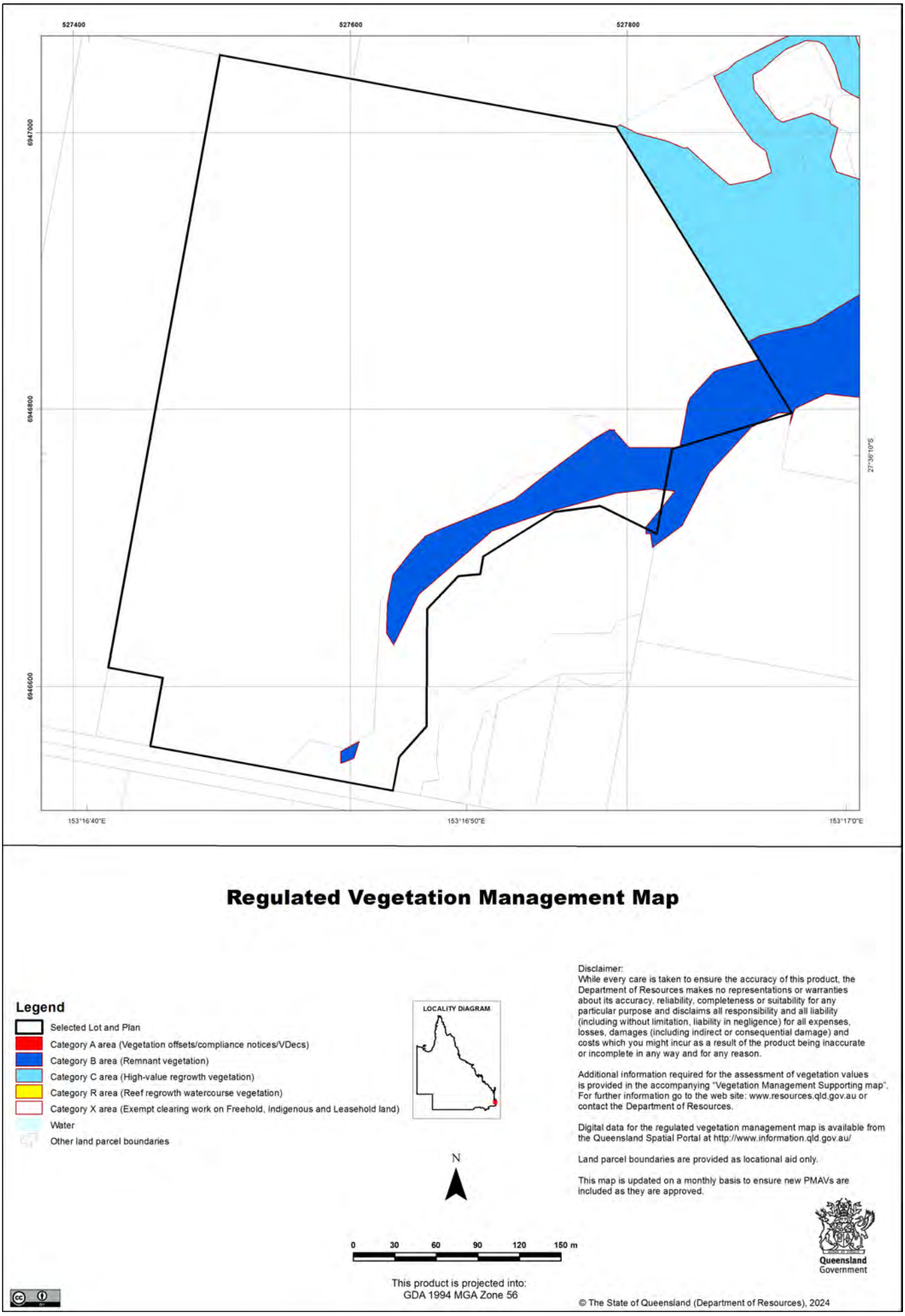
Coastal/non-coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

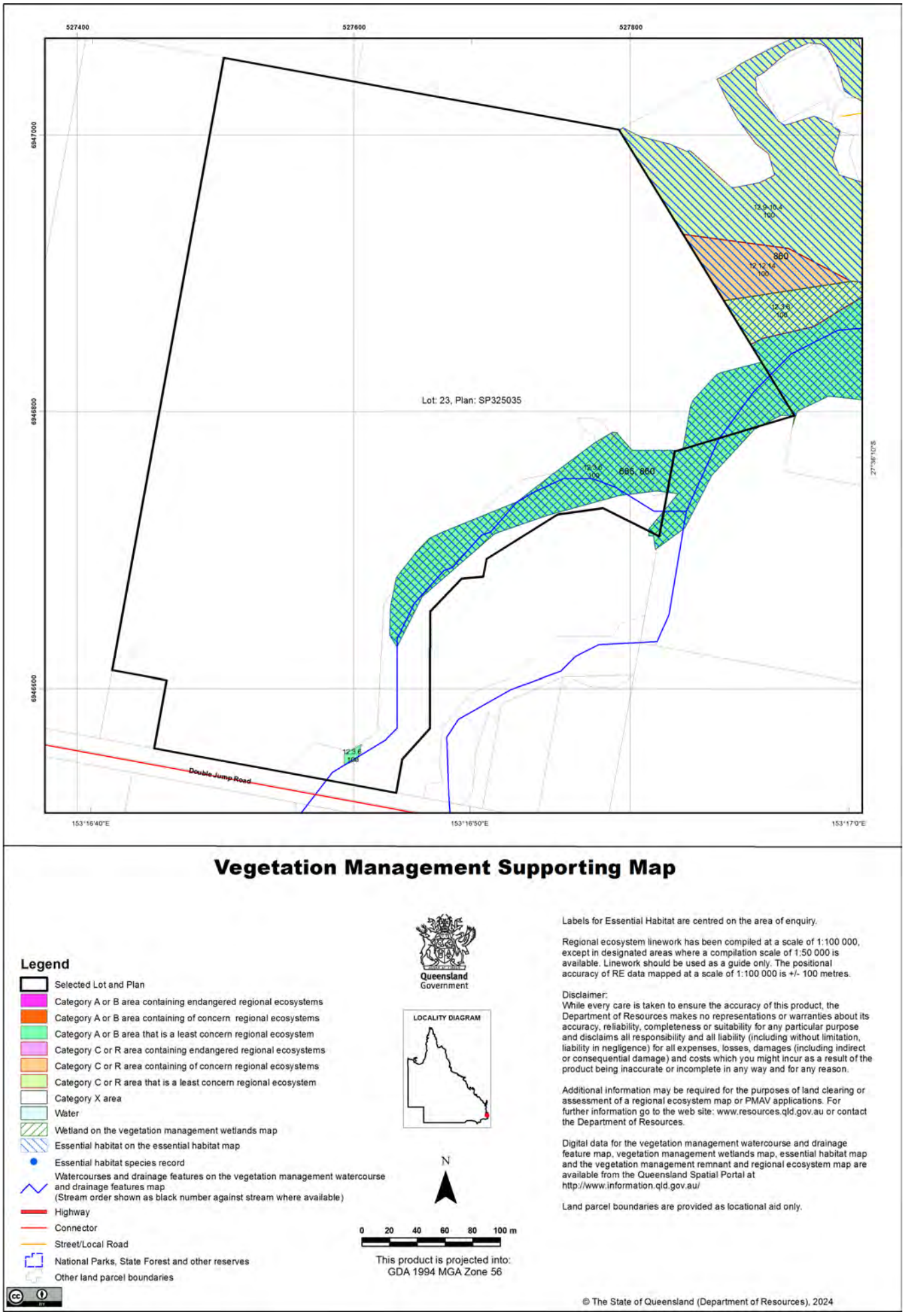
Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

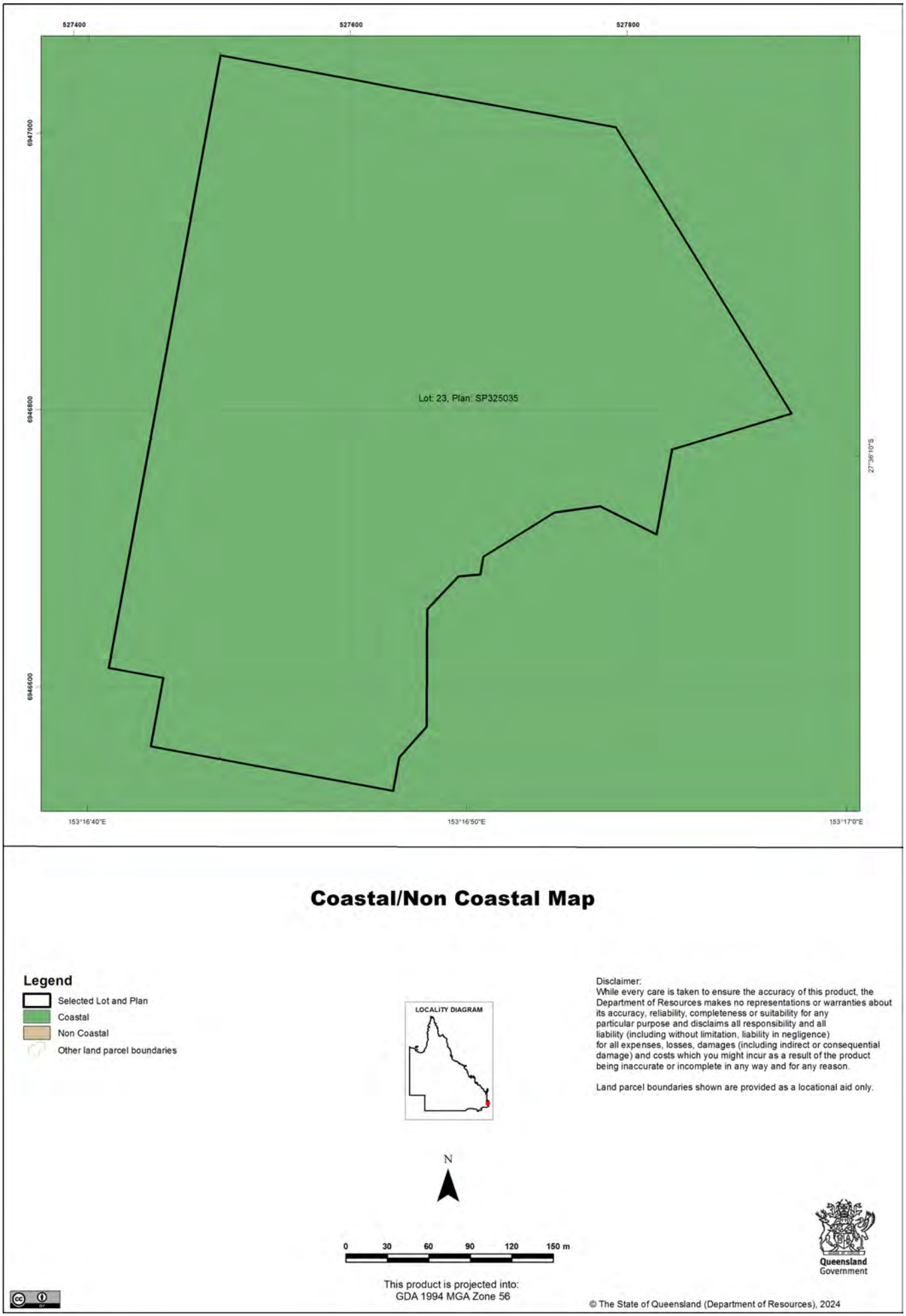
4.1 Regulated vegetation management map



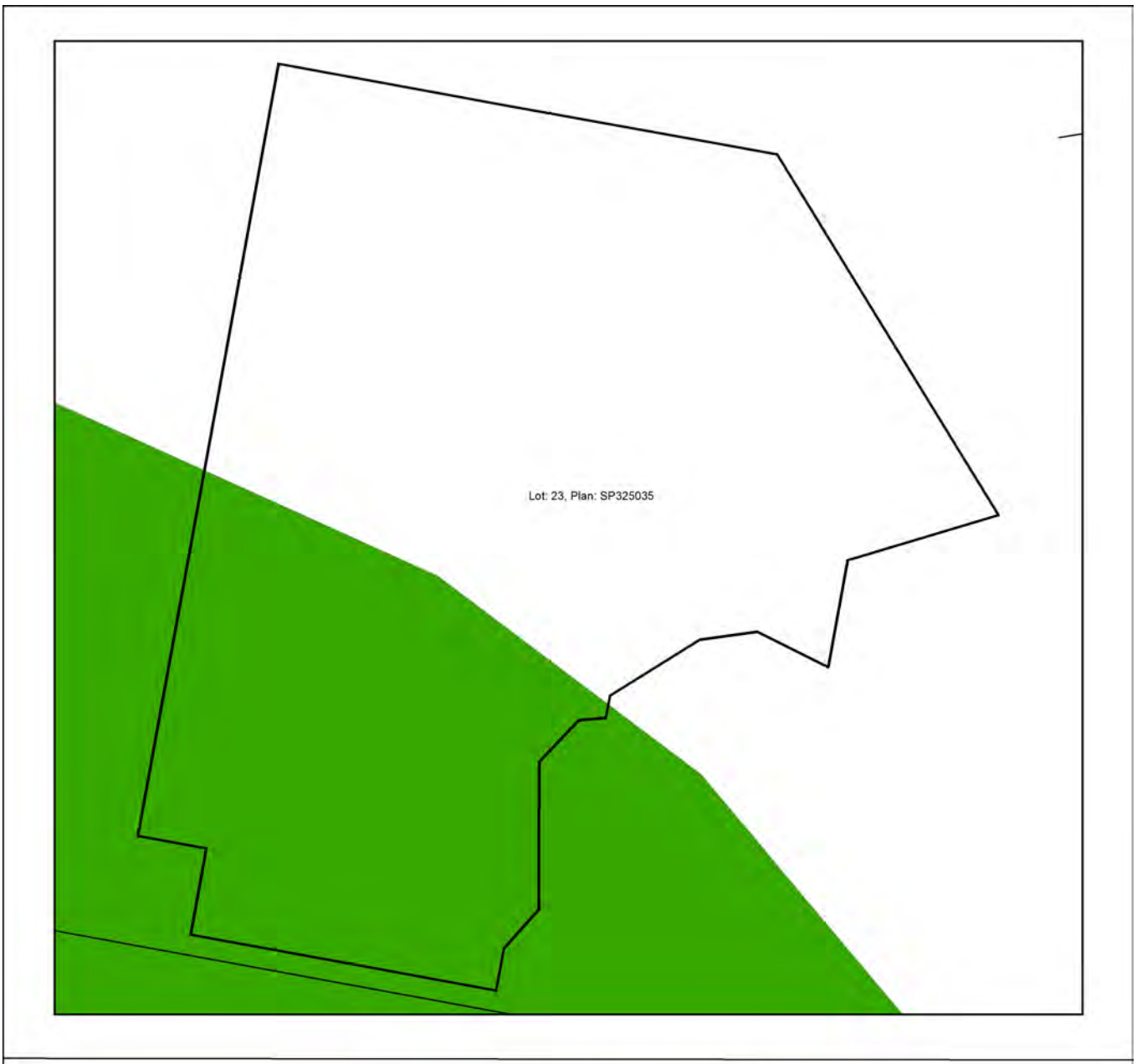
4.2 Vegetation management supporting map



4.3 Coastal/non-coastal map



4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture



5. Protected plants framework (administered by the Department of Environment and Science (DES))

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992* (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see Operational policy: When a protected plant in Queensland is considered to be 'in the wild') that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for threatened and near threatened plants. These are areas where threatened or near threatened plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the Flora survey guidelines. The main objective of a flora survey is to locate any threatened or near threatened plants that may be present in the clearing impact area.

If the flora survey identifies that threatened or near threatened plants are not present within the clearing impact area or clearing within 100m of a threatened or near threatened plant can be avoided, the clearing activity is exempt from a permit. An exempt clearing notification form must be submitted to the Department of Environment and Science, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that threatened or near threatened plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the clearing permit application form.

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that threatened or near threatened plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DES

For further information on the protected plants framework:
Phone 1300 130 372 (and select option four)
Email palm@des.qld.gov.au
Visit https://www.qld.gov.au/environment/plants-animals/plants/protected-plants

5.5 Protected plants flora survey trigger map

This map included may also be requested individually at: https://apps.des.qld.gov.au/map-request/flora-survey-trigger/.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the clearing of protected plants for more information.

Protected Plants Flora Survey Trigger Map

Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets

N

0 20 40 60 80 100 m

This product is projected into:
GDA 1994 MGA Zone 56

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@des.qld.gov.au

Disclaimer:
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

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6. Koala protection framework (administered by the Department of Environment and Science (DES))

The koala (*Phascolarctos cinereus*) is listed in Queensland as endangered by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.
Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document Spatial modelling in South East Queensland.

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document Guideline - Requests to make, amend or revoke a koala habitat area determination.

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley,

Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

1) Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
2) Does not include destroying standing vegetation by stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the Planning Regulation 2017. More information on exempted development can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:
  - the local government planning scheme makes the development assessable;
  - the premises includes an area that is both a koala priority area and a koala habitat area; and
  - the development does not involve interfering with koala habitat (defined above); and

- development in identified koala broad-hectare areas.

The Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the Nature Conservation (Koala) Conservation Plan 2017 prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DES

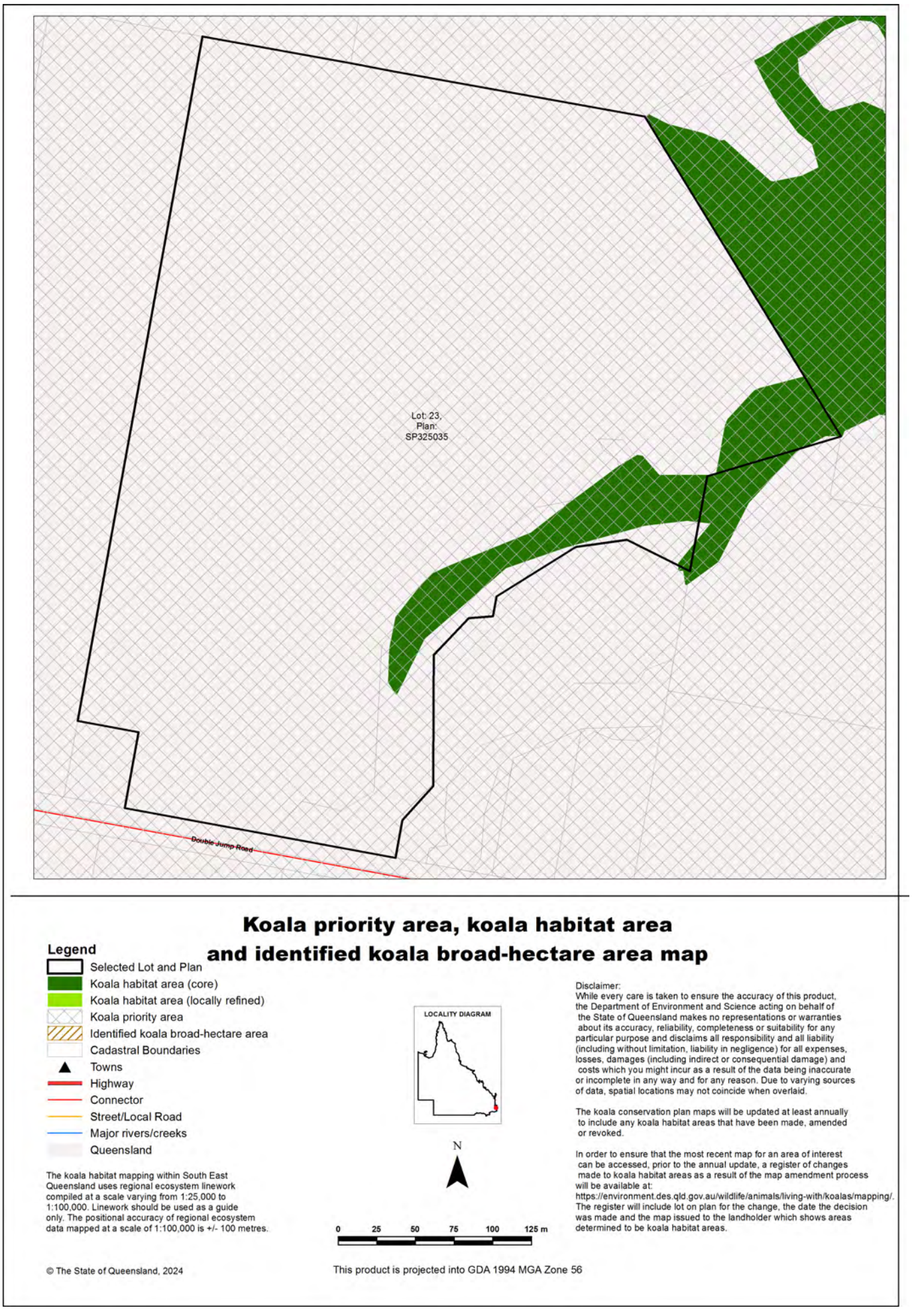
For further information on the koala protection framework:
Phone 13 QGOV (13 74 68)
Email koala.assessment@des.qld.gov.au
Visit https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping

7. Koala protection framework details for Lot: 23 Plan: SP325035

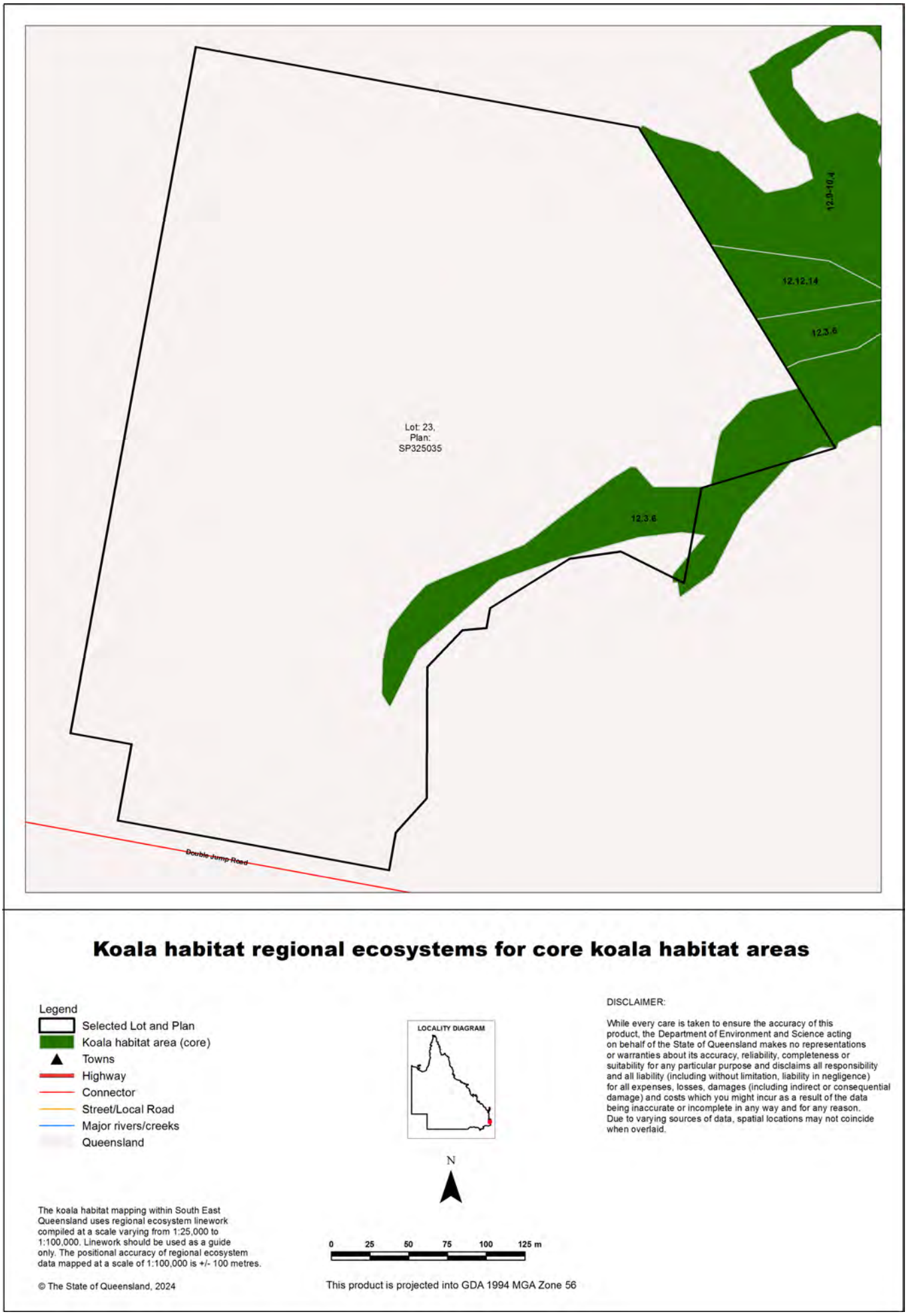
7.1 Koala districts

Koala District A

7.2 Koala priority area, koala habitat area and identified koala broad-hectare area map



7.3 Koala habitat regional ecosystems for core koala habitat areas



8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
• Interference with overland flow • Earthworks, significant disturbance	*Water Act 2000* *Soil Conservation Act 1986*	Department of Regional Development, Manufacturing and Water (Queensland Government) Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.rdmw.qld.gov.au www.resources.qld.gov.au
• Indigenous Cultural Heritage	*Aboriginal Cultural Heritage Act 2003* *Torres Strait Islander Cultural Heritage Act 2003*	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
• Mining and environmentally relevant activities • Infrastructure development (coastal) • Heritage issues	*Environmental Protection Act 1994* *Coastal Protection and Management Act 1995* *Queensland Heritage Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
• Protected plants and protected areas	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 1300 130 372 (option 4) palm@des.qld.gov.au www.des.qld.gov.au
• Koala mapping and regulations	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) Koala.assessment@des.qld.gov.au
• Interference with fish passage in a watercourse, mangroves • Forestry activities on State land tenures	*Fisheries Act 1994* *Forestry Act 1959*	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
• Matters of National Environmental Significance including listed threatened species and ecological communities	*Environment Protection and Biodiversity Conservation Act 1999*	Department of Agriculture, Water and the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
• Development and planning processes	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
• Local government requirements	*Local Government Act 2009* *Planning Act 2016*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office
• Harvesting timber in the Wet Tropics of Qld World Heritage area	*Wet Tropics World Heritage Protection and Management Act 1993*	Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au

Attachment 3. Protected Matters Search Tool Report

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 13-Feb-2024

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	91
Listed Migratory Species:	64

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	94
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	18
Key Ecological Features (Marine):	None
Biologically Important Areas:	6
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Moreton bay	Within Ramsar site	In feature area

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat may occur within area	In feature area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat may occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area	In feature area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
FISH			
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
FROG			
Litoria olongburensis Wallum Sedge Frog [1821]	Vulnerable	Species or species habitat may occur within area	In feature area
INSECT			
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area	In feature area
MAMMAL			
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat may occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tridactylus tridactylus			
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat may occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
Xeromys myoides			
Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat known to occur within area	In feature area
PLANT			
Acronychia littoralis			
Scented Acronychia [8582]	Endangered	Species or species habitat may occur within area	In feature area
Arthraxon hispidus			
Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Baloghia marmorata			
Marbled Balogia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat may occur within area	In feature area
Bosistoa transversa			
Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Corchorus cunninghamii			
Native Jute [14659]	Endangered	Species or species habitat likely to occur within area	In feature area
Cryptocarya foetida			
Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat may occur within area	In feature area
Cryptostylis hunteriana			
Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Cupaniopsis shirleyana](#) Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Endiandra floydii](#) Floyd's Walnut, Crystal Creek Walnut [52955]	Endangered	Species or species habitat likely to occur within area	In feature area
[Macadamia integrifolia](#) Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Macadamia tetraphylla](#) Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat may occur within area	In feature area
[Notelaea lloydii](#) Lloyd's Olive [15002]	Vulnerable	Species or species habitat may occur within area	In feature area
[Phaius australis](#) Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area	In feature area
[Planchonella eerwah](#) Shiny-leaved Condoo, Black Plum, Wild Apple [17340]	Endangered	Species or species habitat likely to occur within area	In feature area
[Rhodamnia rubescens](#) Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
[Rhodomyrtus psidioides](#) Native Guava [19162]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
[Samadera bidwillii](#) Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Thesium australe](#) Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat may occur within area	In feature area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat may occur within area	In feature area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
SHARK			
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In buffer area only
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area	In buffer area only
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Dugong dugon Dugong [28]		Species or species habitat known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]		Breeding known to occur within area	In buffer area only
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Charadrius mongolus](#) Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat likely to occur within area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Limnodromus semipalmatus](#) Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area	In feature area
[Limosa lapponica](#) Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Numenius phaeopus](#) Whimbrel [849]		Species or species habitat likely to occur within area	In buffer area only
[Pandion haliaetus](#) Osprey [952]		Breeding known to occur within area	In feature area
[Pluvialis fulva](#) Pacific Golden Plover [25545]		Species or species habitat likely to occur within area	In buffer area only
[Tringa brevipes](#) Grey-tailed Tattler [851]		Species or species habitat likely to occur within area	In buffer area only
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
[Anous stolidus](#) Common Noddy [825]		Species or species habitat likely to occur within area	In buffer area only
[Anseranas semipalmata](#) Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Ardenna carneipes as Puffinus carneipes](#) Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area	In buffer area only
[Ardenna grisea as Puffinus griseus](#) Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Bubulcus ibis as Ardea ibis](#) Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
[Calonectris leucomelas](#) Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Charadrius mongolus](#) Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat likely to occur within area	In buffer area only
[Diomedea antipodensis](#) Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Diomedea antipodensis gibsoni as Diomedea gibsoni](#) Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Diomedea exulans](#) Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Fregata ariel](#) Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only
[Fregata minor](#) Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
[Lathamus discolor](#) Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
[Limnodromus semipalmatus](#) Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
[Limosa lapponica](#) Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
[Macronectes giganteus](#) Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius phaeopus Whimbrel [849]		Species or species habitat likely to occur within area	In buffer area only
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area	In feature area
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat likely to occur within area	In buffer area only
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat likely to occur within area overfly marine area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Thalassarche steadi](#) White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Tringa brevipes as Heteroscelus brevipes](#) Grey-tailed Tattler [851]		Species or species habitat likely to occur within area	In buffer area only
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In buffer area only
Fish			
[Acentronura tentaculata](#) Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
[Campichthys tryoni](#) Tryon's Pipefish [66193]		Species or species habitat may occur within area	In buffer area only
[Corythoichthys amplexus](#) Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area	In buffer area only
[Corythoichthys ocellatus](#) Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area	In buffer area only
[Festucalex cinctus](#) Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only
[Filicampus tigris](#) Tiger Pipefish [66217]		Species or species habitat may occur within area	In buffer area only
[Halicampus grayi](#) Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area	In buffer area only
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area	In buffer area only
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only
Hippocampus kelloggi Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area	In buffer area only
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area	In buffer area only
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area	In buffer area only
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area	In buffer area only
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area	In buffer area only
Microphis manadensis Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area	In buffer area only
Solegnathus dunckeri Duncker's Pipehorse [66271]		Species or species habitat may occur within area	In buffer area only
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area	In buffer area only
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In buffer area only
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In buffer area only
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In buffer area only
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In buffer area only
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Vanacampus margaritifer](#) Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only
Mammal			
[Dugong dugon](#) Dugong [28]		Species or species habitat known to occur within area	In buffer area only
Reptile			
[Aipysurus laevis](#) Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area	In buffer area only
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area	In buffer area only
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Hydrophis elegans](#) Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area	In buffer area only
[Hydrophis platurus as Pelamis platurus](#) Yellow-bellied Sea Snake [93517]		Species or species habitat may occur within area	In buffer area only
[Hydrophis stokesii as Astrotia stokesii](#) Stokes' Sea Snake [93510]		Species or species habitat may occur within area	In buffer area only
[Laticauda laticaudata](#) a sea krait [1093]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Whales and Other Cetaceans [Resource Information]

Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Sousa sahulensis Australian Humpback Dolphin [87942]		Breeding known to occur within area	In buffer area only
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Moreton Bay	Marine Park	QLD	In buffer area only

Nationally Important Wetlands		[Resource Information]
Wetland Name	State	Buffer Status
Moreton Bay	QLD	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Redlands Coast Regional Sport and Recreation Precinct	2022/09420		Assessment	In buffer area only
Not controlled action				
Clay Gully Road residential development, Victoria Point, QLD	2017/7984	Not Controlled Action	Completed	In feature area
Clearance of approx 152ha of open forest vegetation for residential development at Mt Cotton Villag	2004/1592	Not Controlled Action	Completed	In feature area
Development of Leisure Life Retirement Community	2004/1746	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Eddie Santagiuliana Way Boardwalk	2005/2049	Not Controlled Action	Completed	In buffer area only
Eprapah Heights Bushland Residential Subdivision	2001/286	Not Controlled Action	Completed	In feature area
establishment of a car wash and service station facility on Lot 12 RP 57455	2005/2077	Not Controlled Action	Completed	In feature area
Extension of existing hard rock quarry	2004/1713	Not Controlled Action	Completed	In buffer area only
GCCC Northern Wastewater Strategy and associated Reclaimed Water Scheme - Stage	2001/282	Not Controlled Action	Completed	In buffer area only
Gordon Road Residential Development	2002/854	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Integrated Employment and Residential Community	2007/3449	Not Controlled Action	Completed	In buffer area only
Prawn Aquaculture Enterprise Expansion	2001/294	Not Controlled Action	Completed	In feature area
Residential estate Bunker Rd	2005/2130	Not Controlled Action	Completed	In feature area
Residential subdivision, Redland Bay Road	2002/739	Not Controlled Action	Completed	In feature area
Urban Subdivision	2001/493	Not Controlled Action	Completed	In buffer area only
works within the Black Swamp	2005/2334	Not Controlled Action	Completed	In feature area
Referral decision				
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In buffer area only

Biologically Important Areas			
Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Breeding	Known to occur	In buffer area only

Scientific Name	Behaviour	Presence	Buffer Status
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Known to occur	In buffer area only
Marine Turtles			
Caretta caretta Loggerhead Turtle [1763]	Nesting	Known to occur	In buffer area only
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur	In buffer area only
Sharks			
Carcharias taurus Grey Nurse Shark [64469]	Foraging	Known to occur	In buffer area only
Whales			
Megaptera novaeangliae Humpback Whale [38]	Resting on migration (southbound)	Known to occur	In buffer area only

Bioregional Assessments

SubRegion	BioRegion	Website	Buffer Status
Clarence-Moreton	Clarence-Moreton	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Attachment 4. WildNet Database Report

WildNet Records
Species List

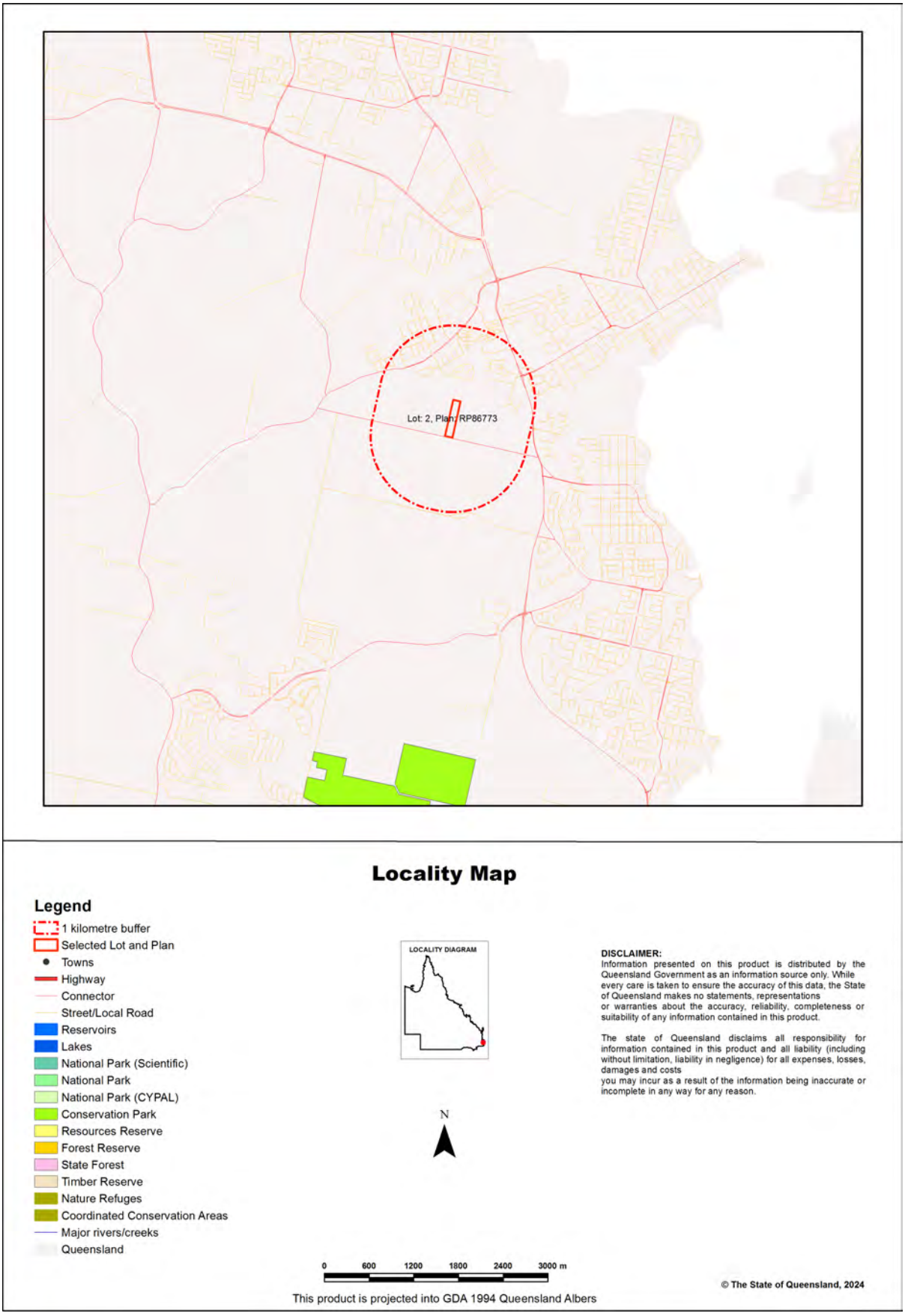
For the selected area of interest 5.03ha Lot: 2 Plan: RP86773

Current as at 13/02/2024

WildNetSpeciesList

Queensland Government

Map 1. Locality Map



Summary Information

The following table provides an overview of the area of interest Lot: 2 Plan: RP86773.

Table 1. Area of interest details

Size (ha)	5.03
Local Government(s)	Redland City
Bioregion(s)	Southeast Queensland
Subregion(s)	Sunshine Coast - Gold Coast Lowlands, Burringbar - Conondale Ranges
Catchment(s)	Logan-Albert

Protected Area(s)
No estates or reserves are located within the area of interest.

World Heritage Area(s)
No World Heritage Areas are located within the area of interest.

Ramsar Area(s)
No Ramsar Areas are located within the area of interest.

Species List

Introduction

This report is derived from a spatial layer generated from the WildNet database managed by the Department of Environment and Science. The layer which is generated weekly contains the WildNet wildlife records that are not classed as erroneous or duplicate, that have a location precision equal to or less than 10000 metres and do not have a count of zero.

The WildNet dataset is constantly being enhanced and the taxonomic and status information revised. If a species is not listed in this report, it does not mean it doesn't occur there and listed species may also no longer inhabit the area. It is recommended that you also access other internal and external data sources for species information in your area of interest (Refer Links and Support).

Table 2 lists the animals recorded within the area of interest and its one kilometre buffer.

Table 3 lists the plants recorded within the area of interest and its one kilometre buffer.

Table 4 lists the fungi recorded within the area of interest and its one kilometre buffer.

Table 5 lists the other species recorded within the area of interest and its one kilometre buffer.

Table 2. Animals recorded within the area of interest and its one kilometre buffer

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
27055	Actinopterygii	Poeciliidae	*Gambusia holbrooki*	mosquitofish	None	None	0	1	31/01/1989
716	Amphibia	Bufonidae	*Rhinella marina*	cane toad	None	None	0	2	24/09/2004
608	Amphibia	Hylidae	*Litoria fallax*	eastern sedgefrog	C	None	0	1	24/09/2004
681	Amphibia	Limnodynastidae	*Limnodynastes peronii*	striped marshfrog	C	None	0	2	24/09/2004
661	Amphibia	Myobatrachidae	*Pseudophryne raveni*	copper backed broodfrog	C	None	0	2	24/09/2004
1419	Aves	Acanthizidae	*Acanthiza chrysorrhoa*	yellow-rumped thornbill	C	None	0	1	14/08/1956
1421	Aves	Acanthizidae	*Acanthiza lineata*	striated thornbill	C	None	0	3	24/09/2004

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1423	Aves	Acanthizidae	*Acanthiza pusilla*	brown thornbill	C	None	0	4	24/09/2004
1396	Aves	Acanthizidae	*Gerygone olivacea*	white-throated gerygone	C	None	0	4	24/09/2004
1382	Aves	Acanthizidae	*Sericornis frontalis*	white-browed scrubwren	C	None	0	3	24/09/2004
1371	Aves	Acanthizidae	*Smicrornis brevirostris*	weebill	C	None	0	2	24/09/2004
1729	Aves	Accipitridae	*Accipiter fasciatus*	brown goshawk	C	None	0	3	24/09/2004
1721	Aves	Accipitridae	*Aviceda subcristata*	Pacific baza	C	None	0	2	24/09/2004
1718	Aves	Accipitridae	*Haliaeetus leucogaster*	white-bellied sea-eagle	C	None	0	2	24/09/2004
1707	Aves	Accipitridae	*Haliastur sphenurus*	whistling kite	C	None	0	3	24/09/2004
1767	Aves	Alcedinidae	*Dacelo novaeguineae*	laughing kookaburra	C	None	0	4	24/09/2004
1760	Aves	Alcedinidae	*Todiramphus macleayii*	forest kingfisher	C	None	0	1	14/08/1956
1762	Aves	Alcedinidae	*Todiramphus sanctus*	sacred kingfisher	C	None	0	3	24/09/2004
1994	Aves	Anatidae	*Anas platyrhynchos*	northern mallard	None	None	0	1	24/09/2004
1998	Aves	Anatidae	*Anas superciliosa*	Pacific black duck	C	None	0	3	24/09/2004
2003	Aves	Anatidae	*Chenonetta jubata*	Australian wood duck	C	None	0	3	24/09/2004
1279	Aves	Anhingidae	*Anhinga novaeh ollandiae*	Australasian darter	C	None	0	2	24/09/2004
1971	Aves	Apodidae	*Hirundapus caudacutus*	white-throated needletail	V	V	0	2	24/09/2004
1830	Aves	Ardeidae	*Bubulcus ibis*	cattle egret	C	None	0	3	24/09/2004
1840	Aves	Ardeidae	*Egretta garzetta*	little egret	C	None	0	2	24/09/2004
1826	Aves	Ardeidae	*Egretta novaeh ollandiae*	white-faced heron	C	None	0	2	24/09/2004
1660	Aves	Artamidae	*Artamus leucorynchus*	white-breasted woodswallow	C	None	0	2	24/09/2004
1654	Aves	Artamidae	*Cracticus nigrogularis*	pied butcherbird	C	None	0	4	24/09/2004
1656	Aves	Artamidae	*Cracticus torquatus*	grey butcherbird	C	None	0	4	24/09/2004
1644	Aves	Artamidae	*Gymnorhina tibicen*	Australian magpie	C	None	0	4	24/09/2004
1191	Aves	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo	C	None	0	2	24/09/2004
1194	Aves	Cacatuidae	*Cacatua sanguinea*	little corella	C	None	0	2	24/09/2004
1193	Aves	Cacatuidae	*Eolophus roseicapilla*	galah	C	None	0	3	24/09/2004

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1636	Aves	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike	C	None	0	4	24/09/2004
1640	Aves	Campephagidae	*Lalage leucomela*	varied triller	C	None	0	2	24/09/2004
1933	Aves	Charadriidae	*Vanellus miles novaehollandiae*	masked lapwing (southern subspecies)	C	None	0	1	14/08/1956
1294	Aves	Cisticolidae	*Cisticola exilis*	golden-headed cisticola	C	None	0	3	24/09/2004
1617	Aves	Climacteridae	*Cormobates leucophaea*	white-throated treecreeper	C	None	0	1	21/08/2004
18293	Aves	Climacteridae	*Cormobates leucophaea metastasis*	white-throated treecreeper (southern)	C	None	0	3	24/09/2004
1804	Aves	Columbidae	*Columba livia*	rock dove	None	None	0	2	24/09/2004
1810	Aves	Columbidae	*Geopelia humeralis*	bar-shouldered dove	C	None	0	3	24/09/2004
18323	Aves	Columbidae	*Geopelia placida*	peaceful dove	C	None	0	4	24/09/2004
1774	Aves	Columbidae	*Spilopelia chinensis*	spotted dove	None	None	0	3	24/09/2004
1609	Aves	Corvidae	*Corvus orru*	Torresian crow	C	None	0	4	24/09/2004
1754	Aves	Cuculidae	*Cacomantis flabelliformis*	fan-tailed cuckoo	C	None	0	2	24/09/2004
1745	Aves	Cuculidae	*Chalcites lucidus*	shining bronze-cuckoo	C	None	0	3	24/09/2004
1611	Aves	Dicaeidae	*Dicaeum hirundinaceum*	mistletoebird	C	None	0	3	24/09/2004
1601	Aves	Dicruridae	*Dicrurus bracteatus*	spangled drongo	C	None	0	2	24/09/2004
1366	Aves	Estrildidae	*Lonchura castaneothorax*	chestnut-breasted mannikin	C	None	0	2	24/09/2004
1367	Aves	Estrildidae	*Lonchura punctulata*	nutmeg mannikin	None	None	0	1	14/08/1956
1359	Aves	Estrildidae	*Neochmia temporalis*	red-browed finch	C	None	0	4	24/09/2004
1342	Aves	Estrildidae	*Taeniopygia bichenovii*	double-barred finch	C	None	0	3	24/09/2004
1572	Aves	Hirundinidae	*Hirundo neoxena*	welcome swallow	C	None	0	4	24/09/2004
1585	Aves	Hirundinidae	*Petrochelidon ariel*	fairy martin	C	None	0	2	24/09/2004
1573	Aves	Hirundinidae	*Petrochelidon nigricans*	tree martin	C	None	0	1	14/08/1956
18458	Aves	Maluridae	*Malurus lamberti*	variegated fairy-wren	C	None	0	3	24/09/2004
1558	Aves	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren	C	None	0	4	24/09/2004
1523	Aves	Meliphagidae	*Caligavis chrysops*	yellow-faced honeyeater	C	None	0	3	24/09/2004
1539	Aves	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater	C	None	0	2	24/09/2004

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1497	Aves	Meliphagidae	*Lichmera indistincta*	brown honeyeater	C	None	0	4	24/09/2004
1500	Aves	Meliphagidae	*Manorina melanocephala*	noisy miner	C	None	0	3	24/09/2004
1504	Aves	Meliphagidae	*Meliphaga lewinii*	Lewin's honeyeater	C	None	0	4	24/09/2004
1507	Aves	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater	C	None	0	4	24/09/2004
1489	Aves	Meliphagidae	*Myzomela sanguinolenta*	scarlet honeyeater	C	None	0	4	24/09/2004
1494	Aves	Meliphagidae	*Philemon corniculatus*	noisy friarbird	C	None	0	4	24/09/2004
1471	Aves	Meliphagidae	*Plectorhyncha lanceolata*	striped honeyeater	C	None	0	3	24/09/2004
1764	Aves	Meropidae	*Merops ornatus*	rainbow bee-eater	C	None	0	4	24/09/2004
1589	Aves	Monarchidae	*Grallina cyanoleuca*	magpie-lark	C	None	0	4	24/09/2004
1595	Aves	Monarchidae	*Monarcha melanopsis*	black-faced monarch	SL	None	0	2	24/09/2004
1586	Aves	Monarchidae	*Myiagra rubecula*	leaden flycatcher	C	None	0	3	24/09/2004
1455	Aves	Motacillidae	*Anthus novaese elandiae*	Australasian pipit	C	None	0	2	24/09/2004
1453	Aves	Neosittidae	*Daphoenositta chrysoptera*	varied sittella	C	None	0	3	24/09/2004
1442	Aves	Oriolidae	*Oriolus sagittatus*	olive-backed oriole	C	None	0	4	24/09/2004
1444	Aves	Oriolidae	*Sphecotheres vieilloti*	Australasian figbird	C	None	0	3	24/09/2004
1449	Aves	Pachycephalidae	*Colluricincla harmonica*	grey shrike-thrush	C	None	0	4	24/09/2004
1436	Aves	Pachycephalidae	*Pachycephala pectoralis*	golden whistler	C	None	0	4	24/09/2004
1437	Aves	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler	C	None	0	4	24/09/2004
1389	Aves	Pardalotidae	*Pardalotus punctatus*	spotted pardalote	C	None	0	1	14/08/1956
1392	Aves	Pardalotidae	*Pardalotus striatus*	striated pardalote	C	None	0	4	24/09/2004
1360	Aves	Passeridae	*Passer domesticus*	house sparrow	None	None	0	3	24/09/2004
1347	Aves	Petroicidae	*Eopsaltria australis*	eastern yellow robin	C	None	0	4	24/09/2004
1339	Aves	Petroicidae	*Microeca fascinans*	jacky winter	C	None	0	1	14/08/1956
1332	Aves	Petroicidae	*Petroica rosea*	rose robin	C	None	0	3	24/09/2004
1261	Aves	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant	C	None	0	2	24/09/2004
1687	Aves	Phasianidae	*Synoicus ypsilophorus*	brown quail	C	None	0	2	24/09/2004

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
1955	Aves	Podargidae	*Podargus strigoides*	tawny frogmouth	C	None	0	2	24/09/2004
1318	Aves	Pomatostomidae	*Pomatostomus temporalis*	grey-crowned babbler	C	None	0	1	14/08/1956
1147	Aves	Psittaculidae	*Parvipsitta pusilla*	little lorikeet	C	None	0	3	24/09/2004
1136	Aves	Psittaculidae	*Platycercus adscitus*	pale-headed rosella	C	None	0	2	21/08/2004
21976	Aves	Psittaculidae	*Platycercus adscitus palliceps*	pale-headed rosella (southern form)	C	None	0	2	24/09/2004
1124	Aves	Psittaculidae	*Trichoglossus chlorolepidotus*	scaly-breasted lorikeet	C	None	0	4	24/09/2004
1125	Aves	Psittaculidae	*Trichoglossus moluccanus*	rainbow lorikeet	C	None	0	4	24/09/2004
1623	Aves	Psophodidae	*Psophodes olivaceus*	eastern whipbird	C	None	0	4	24/09/2004
1673	Aves	Rallidae	*Gallinula tenebrosa*	dusky moorhen	C	None	0	2	24/09/2004
1575	Aves	Rhipiduridae	*Rhipidura albiscapa*	grey fantail	C	None	0	4	24/09/2004
1576	Aves	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail	C	None	0	4	24/09/2004
1578	Aves	Rhipiduridae	*Rhipidura rufifrons*	rufous fantail	SL	None	0	3	24/09/2004
1314	Aves	Sturnidae	*Acridotheres tristis*	common myna	None	None	0	2	24/09/2004
1303	Aves	Sturnidae	*Sturnus vulgaris*	common starling	None	None	0	1	14/08/1956
1812	Aves	Threskiornithidae	*Threskiornis molucca*	Australian white ibis	C	None	0	3	24/09/2004
1800	Aves	Threskiornithidae	*Threskiornis spinicollis*	straw-necked ibis	C	None	0	3	24/09/2004
1276	Aves	Zosteropidae	*Zosterops lateralis*	silvereye	C	None	0	4	24/09/2004
1071	Mammalia	Canidae	*Vulpes vulpes*	red fox	None	None	0	2	24/09/2004
22485	Mammalia	Dasyuridae	*Antechinus flavipes flavipes*	yellow-footed antechinus (south-east Queensland)	C	None	0	2	24/09/2004
811	Mammalia	Dasyuridae	*Planigale maculata*	common planigale	C	None	0	2	24/09/2004
1056	Mammalia	Felidae	*Felis catus*	cat	None	None	0	2	24/09/2004
832	Mammalia	Leporidae	*Lepus europaeus*	European brown hare	None	None	0	2	24/09/2004
904	Mammalia	Macropodidae	*Notamacropus rufogriseus*	red-necked wallaby	C	None	0	2	24/09/2004
885	Mammalia	Macropodidae	*Wallabia bicolor*	swamp wallaby	C	None	0	2	24/09/2004
989	Mammalia	Molossidae	*Austronomus australis*	white-striped freetail bat	C	None	0	2	24/09/2004
1000	Mammalia	Molossidae	*Mormopterus norfolkensis*	east coast freetail bat	C	None	0	2	24/09/2004

Taxon Id	Class	Family	Scientific Name	Common Name	NCA	EPBC	Specimens	Records	Last record
767	Mammalia	Muridae	*Hydromys chrysogaster*	water rat	C	None	0	2	24/09/2004
764	Mammalia	Muridae	*Mus musculus*	house mouse	None	None	0	2	24/09/2004
731	Mammalia	Muridae	*Rattus rattus*	black rat	None	None	0	2	24/09/2004
784	Mammalia	Peramelidae	*Isoodon macrourus*	northern brown bandicoot	C	None	0	2	24/09/2004
859	Mammalia	Phalangeridae	*Trichosurus vulpecula*	common brushtail possum	C	None	0	2	24/09/2004
860	Mammalia	Phascolarctidae	*Phascolarctos cinereus*	koala	E	E	0	75	16/11/2021
851	Mammalia	Pseudocheiridae	*Pseudocheirus peregrinus*	common ringtail possum	C	None	0	2	24/09/2004
1080	Mammalia	Suidae	*Sus scrofa*	pig	None	None	0	2	24/09/2004
838	Mammalia	Tachyglossidae	*Tachyglossus aculeatus*	short-beaked echidna	SL	None	0	2	24/09/2004
22066	Mammalia	Vespertilionidae	*Myotis macropus*	large-footed myotis	C	None	0	1	24/09/2004
554	Reptilia	Agamidae	*Intellagama lesueurii*	eastern water dragon	C	None	0	2	24/09/2004
556	Reptilia	Agamidae	*Pogona barbata*	bearded dragon	C	None	0	2	24/09/2004
457	Reptilia	Elapidae	*Cryptophis nigrescens*	eastern small-eyed snake	C	None	0	2	24/09/2004
493	Reptilia	Elapidae	*Demansia psammophis*	yellow-faced whipsnake	C	None	0	2	24/09/2004
411	Reptilia	Gekkonidae	*Hemidactylus frenatus*	house gecko	None	None	0	2	24/09/2004
308	Reptilia	Scincidae	*Anomalopus verreauxii*	three-clawed worm-skink	C	None	0	2	24/09/2004
312	Reptilia	Scincidae	*Calyptotis scutirostrum*	scute-snouted calyptotis	C	None	0	2	24/09/2004
277	Reptilia	Scincidae	*Carlia vivax*	tussock rainbow-skink	C	None	0	2	24/09/2004
31898	Reptilia	Scincidae	*Cryptoblepharus pulcher pulcher*	elegant snake-eyed skink	C	None	0	3	16/10/2013
240	Reptilia	Scincidae	*Ctenotus spaldingi*	straight-browed ctenotus	C	None	0	2	24/09/2004
190	Reptilia	Scincidae	*Eulamprus quoyii*	eastern water skink	C	None	0	2	24/09/2004
184	Reptilia	Scincidae	*Lampropholis delicata*	dark-flecked garden sunskink	C	None	0	3	16/10/2013
107	Reptilia	Scincidae	*Tiliqua scincoides scincoides*	eastern bluetongue	C	None	0	2	24/09/2004
61	Reptilia	Varanidae	*Varanus varius*	lace monitor	C	None	0	2	24/09/2004

Table 3. Plants recorded within the area of interest and its one kilometre buffer

No species found within the area of interest and its one kilometre buffer.

Table 4. Fungi recorded within the area of interest and its one kilometre buffer

No species found within the area of interest and its one kilometre buffer.

Table 5. Other species recorded within the area of interest and its one kilometre buffer

No species found within the area of interest and its one kilometre buffer.

Species table headings and codes

Taxon Id: Unique identifier of the taxon from the WildNet database.

NCA: Queensland conservation status of the taxon under the *Nature Conservation Act 1992* (Least Concern (C), Critically Endangered (CR), Endangered (E), Extinct (EX), Near Threatened (NT), Extinct in the Wild (PE), Special Least Concern (SL), and Vulnerable (V)).

EPBC: Australian conservation status of the taxon under the *Environment Protection and Biodiversity Conservation Act 1999* (Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Vulnerable (V), and Extinct in the Wild (XW)).

Specimens: The number of specimen-backed records of the taxon.

Records: The total number of records of the taxon.

Last record: Date of latest record of the taxon.

Links and Support

Other sites that deliver species information from the WildNet database include:

- Species profile search - access species information approved for publication including species names, statuses, notes, images, distribution maps and records
- Species lists - generate species lists for Queensland protected areas, forestry areas, local governments and areas defined using coordinates
- Biomaps - view biodiversity information, including WildNet records approved for publication, and generate reports
- Queensland Globe - view spatial information, including WildNet records approved for publication
- Qld wildlife data API - access WildNet species information approved for publication such as notes, images and records etc.
- Wetland*Maps* - view species records, survey locations etc. approved for publication
- Wetland*Summary* - view wildlife statistics, species lists for a range of area types, and access WildNet species profiles
- WildNet wildlife records - published - Queensland - spatial layer of WildNet records approved for publication generated weekly
- Generalised distribution and densities of Queensland wildlife - Queensland species distributions and densities generalised to a 10 km grid resolution
- Conservation status of Queensland wildlife - access current lists of priority species for Queensland including nomenclature and status information
- Queensland Confidential Species - the list of species flagged as confidential in the WildNet database.

Please direct queries about this report to the WildNet Team.

Other useful sites for accessing Queensland biodiversity data include:

- Useful wildlife resources
- Queensland Government Data
- Atlas of Living Australia (ALA)
- Online Zoological Collections of Australian Museums (OZCAM)
- Australia's Virtual Herbarium (AVH)
- Protected Matters Search Tool

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Attachment 5. BAAM Ecological Assessment Report (2018)

ECOLOGICAL ASSESSMENT

36-40, 42, 44, 48, 50, 52 & 56 DOUBLE JUMP ROAD AND 26 PROSPECT CRESCENT, VICTORIA POINT

Prepared for
Sutgold Pty Ltd

Biodiversity Assessment and Management Pty Ltd
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BAAM
ECOLOGICAL CONSULTANTS

Specialised ecological knowledge that reduces your risk

Document Control Sheet

File Number: 0396-001/05

Project Manager/s: Adrian Caneris

Client: Sutgold Pty Ltd

Project Title: Ecological Assessment - 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent, Victoria Point

Project Author/s: Adrian Caneris

Project Summary: An ecological assessment of the proposed residential development located at 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent, Victoria Point, within the Victoria Point Structure Plan Area.

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Purpose of Report

Biodiversity Assessment and Management Pty Ltd has produced this report in its capacity as {consultants} for and on the request of Sutgold Pty Ltd (the "Client") for the sole purpose of providing an ecological assessment of the of the proposed residential development located at 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent, Victoria Point, within the proposed Victoria Point Structure Plan Area (the "Specified Purpose"). This information and any recommendations in this report are particular to the Specified Purpose and are based on facts, matters and circumstances particular to the subject matter of the report and the Specified Purpose at the time of production. This report is not to be used, nor is it suitable, for any purpose other than the Specified Purpose. Biodiversity Assessment and Management Pty Ltd disclaims all liability for any loss and/or damage whatsoever arising either directly or indirectly as a result of any application, use or reliance upon the report for any purpose other than the Specified Purpose.

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Signed on behalf of
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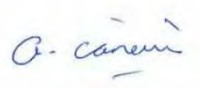
Date: 04/10/2018



Managing Director

Ecological Assessment – 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent, Victoria Point

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Table of Abbreviations

BAAM	Biodiversity Assessment and Management Pty Ltd
DAMS	Development Assessment Mapping System
DES	Queensland Department of Environment and Science (formerly DEHP)
DILGP	Department of Infrastructure, Local Government and Planning
DNRM	Queensland Department of Natural Resources and Mines
DOEE	Department of Environment and Energy
DotE	Commonwealth Department of the Environment (now Department of Environment and Energy)
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EVNT	Species listed as endangered, vulnerable or near threatened under the EPBC Act or NC Act
KSPRP	*South East Queensland Koala Conservation State Planning Regulatory Provisions*
MNES	Matters of National Environmental Significance
MSES	Matters of State Environmental Significance
MLES	Matters of Local Environmental Significance
NC Act	Queensland *Nature Conservation Act 1992*
RE	Regional Ecosystem
RCC	Redland City Council
TEC	Threatened Ecological Community
VM Act	Queensland *Vegetation Management Act 1999*

1.0 INTRODUCTION

1.1 BACKGROUND AND STUDY AREA DESCRIPTION

Biodiversity Assessment and Management (BAAM) has prepared this ecological assessment to inform a development application for the proposed residential development located at 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent, Victoria Point(the 'study area'),, within the proposed Victoria Point Structure Plan Area (VPSPA) as shown on **Figure 1.1**.

This ecological assessment addresses the relevant overlays and associated codes of the Redland City Plan 2018 Version 1 ('City Plan') and should be read in conjunction with the Ecological Matters Report for the Victoria Point Structure Plan Area (BAAM 2018).

The study area is zoned as 'Emerging Community' under the City Plan.

Located between Double Jump Road & Bunker Road, these lots are located on the fringe of urban development to the north, and rural properties to the east, west and south (**Figure 1.2**).

The subject lots are identified as:

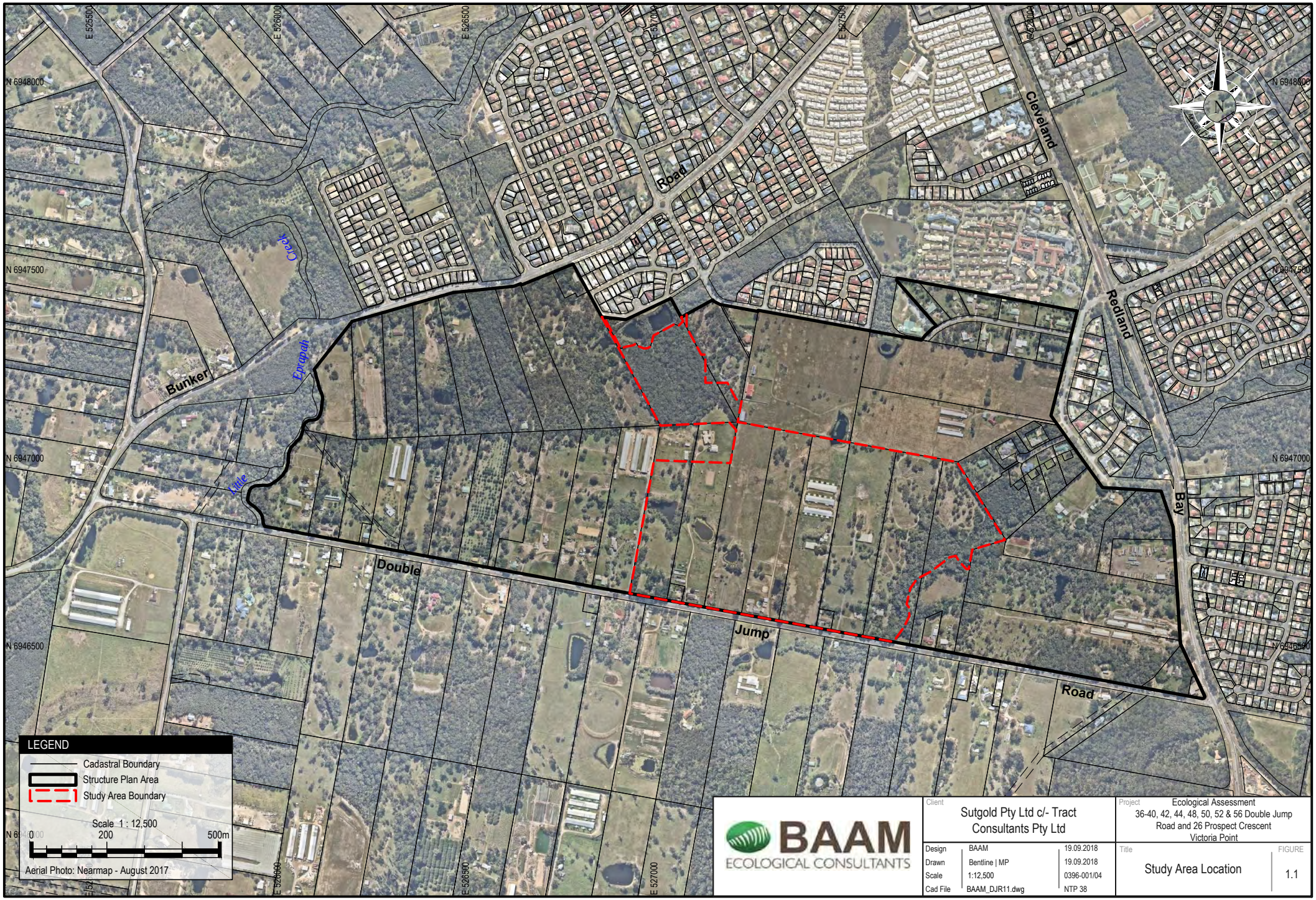
- Lot 801 on SP261302, 26 Prospect Crescent;
- Lot 5 on SP293881, 52, 54 & 58 Double Jump Rd;
- Lot 2 on RP86773, 50 Double Jump Rd;
- Lot 1 on RP86773, 48 Double Jump Rd;
- Lot 3 on RP148004, 44 Double Jump Rd;
- Lot 7 on RP57455, 42 Double Jump Rd;
- Lot 2 on RP169475, 36-40 Double Jump Rd;
- Lot 6 on SP145377, 27 Brendan Way; and
- Lot 2 on RP169475, 36-40 Double Jump Road.

These rural properties include residential dwellings and infrastructure such as farm sheds, dams, chicken sheds and horse training facilities. They are all subject to prior disturbance and predominantly supporting open pastoral areas with some native vegetation, particularly around dams, fencelines and the tributary of Moogurrapum Creek that forms the eastern study area boundary. Lot 801 in the north is around 5.5 ha in size and supports regrowth woodland.

1.2 STUDY AIMS

The aims of this assessment are to:

- Describe the current local, state and federal environmental ordinances that apply to the study area;
- Describe existing ecological values of the study area, highlighting any significant values that present opportunities and/or constraints for future land use options; and
- Provide recommendations regarding the management of ecological values.



BAAM ECOLOGICAL CONSULTANTS

Client	Sutgold Pty Ltd c/- Tract Consultants Pty Ltd	
Project	Ecological Assessment 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent Victoria Point	
Design	BAAM	19.09.2018
Drawn	Bentline | MP	19.09.2018
Scale	1:12,500	0396-001/04
Cad File	BAAM_DJR11.dwg	NTP 38
Title	Study Area Location	FIGURE 1.1

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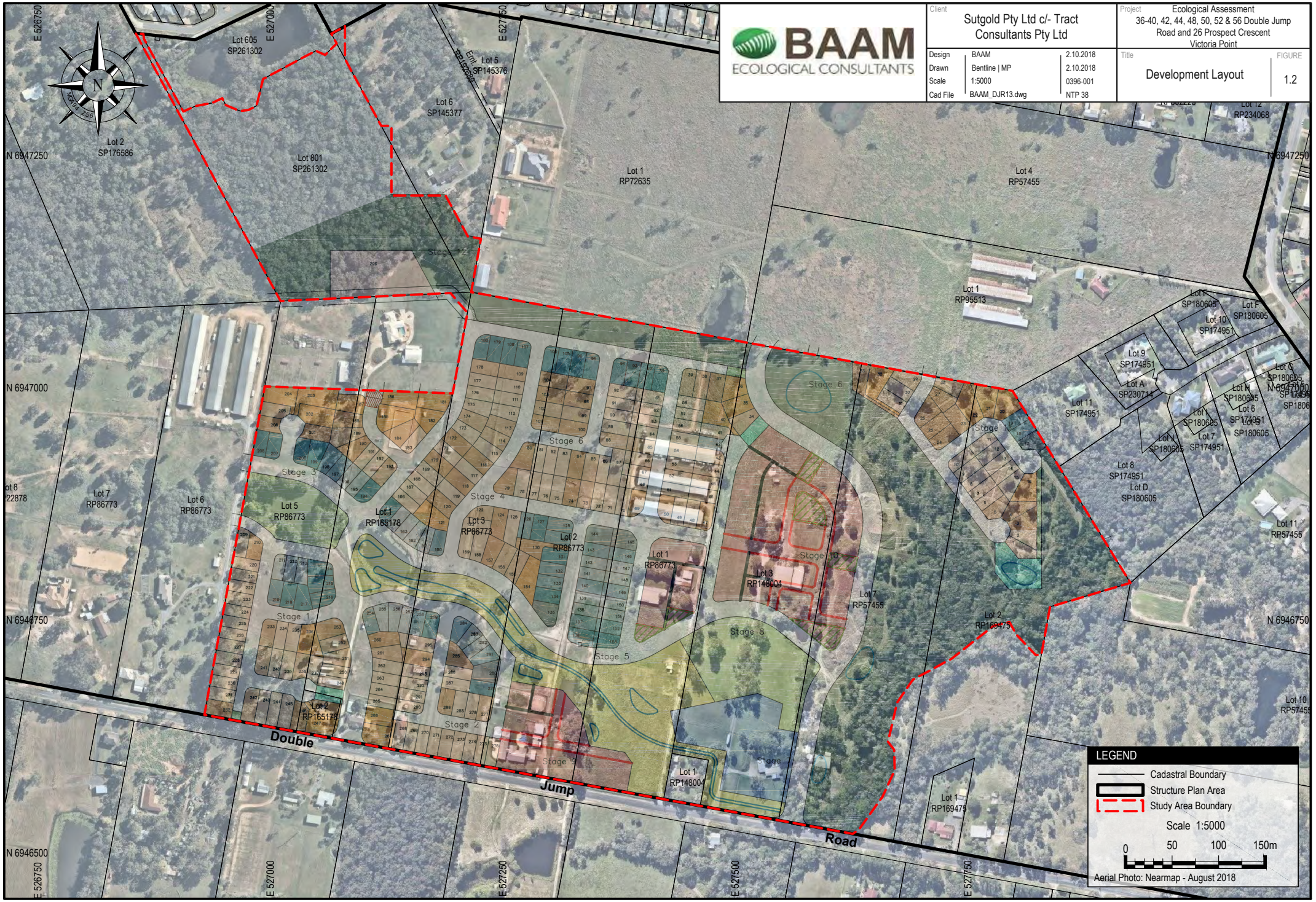

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2.0 METHODOLOGY

2.1 DESKTOP REVIEW

The desktop review comprised a search of online databases and mapping and an analysis of information for conservation significant vegetation communities, flora and fauna species in the local area. For the purposes of this report, conservation significant vegetation communities and flora and fauna species include:

- Ecological communities listed as threatened ecological communities under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- Flora and fauna species listed under the EPBC Act as critically endangered, endangered, vulnerable or migratory;
- Flora and fauna species listed as endangered, vulnerable or near threatened (EVNT) or Special Least Concern under the Queensland *Nature Conservation Act 1992* (NC Act);
- Critical habitat listed under the EPBC Act for which a register is maintained; and
- Regulated Vegetation and Essential Habitat under the Queensland *Vegetation Management Act 1999* (VM Act).

Reviewed information included:

- Commonwealth EPBC Protected Matters Search Tool (**Appendix 1**) results;
- Queensland Wildlife Online database (**Appendix 2**);
- State mapping of regulated vegetation, essential habitat, wetlands and Koala habitat (**Appendix3**); and
- Redland City Council environmental overlay mapping (**Appendix 4**).
- Various preliminary design layouts
- The 28 South Ecological reports and documentation for the proposed Ausbuild development immediately north of the study area.

2.2 FIELD ASSESSMENT

The information presented in this report is informed through the desktop research and site investigations undertaken by Adrian Caneris, Dr. Jo Chambers and Shelley Trevaskis between September 2015 and July 2018 across the VPSPA which included numerous and repeated site visits (BAAM 2018).

The focus of the site investigations was to assess the overall ecological values and to ground truth the State-mapped Koala habitats within the study area.

All work was performed in accordance with BAAM's Scientific Purposes Permit and Animal Ethics Approval.

A targeted fauna survey was conducted by Adrian Caneris across the VPSA over five days and four nights across between 26 February and 2 March. This survey included assessment of the subject lots and surrounds and trapping within Lot 801. The fauna survey involved four nights of small mammal trapping, two nights of spotlighting and frog surveys and four early morning bird surveys of 1.5 hrs duration per day. Birds species present were also recorded during all other aspects of site assessment. The fauna survey techniques employed are described in **Table 2.1**.

A targeted fauna survey was conducted by Adrian Caneris over five days and four nights across the VPSPA, which included assessemnt of the subject lots and surrounds and trapping within Lot 801, between February 26 and March 2, 2018 which. The fauna survey involved four nights small

mammal trapping, two nights spotlighting and frog surveys and four early morning bird surveys of 1.5 hrs duration per day. Birds were also censured during all other aspects of site visitation. Details of methodolgies employed are provided in **Table 2.1**.

Table 2.1. Fauna survey techniques.

Technique	Purpose	Description
Diurnal Searches (general)	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list.	This involves intensive investigation of ground layer (under logs, rocks and leaf litter), low vegetation (under bark and in tree stumps) for amphibians, reptiles, bats and animal signs, e.g. scats, owl pellets, remains and tracks.
Spotlighting (general)	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list.	Undertaken on foot through representative habitats, at a leisurely pace using hand-held spotlights and/or head torches. This method samples nocturnal mammals (flying, arboreal and terrestrial), birds (owls and nightjars), reptiles (geckos) and frogs.
Bird Surveys (general)	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list.	Bird species are recorded via their call, or visual observation. Surveys were conducted from dawn to early morning, dusk to early evening and during the night for nocturnal species.
Elliot Traps	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list.	25 baited Elliot 'A' and 2 baited Elliot 'B' traps were laid on ground transects 10 or more metres apart. Trap placement is influenced by vegetation diversity, the size and shape of habitat patches and by naturally occurring features such as logs, rock outcrops, tree bases and clumping vegetation.
Targeted Feed Tree Search	To determine the extent and distribution of utilisation of an area by Glossy Black-Cockatoos and Koala.	This involves intensive investigation of the site for isolated specimens and groves of feed trees for Glossy Black Cockatoo and/or Koala.
Targeted Ground Search	To determine the presence of significant species, including cryptic or rare species.	This involves intensive investigation of ground layer (under logs, rocks and leaf litter), low vegetation (under bark and in tree stumps), and other habitat features.
Targeted Spotlighting	To determine the presence of significant species, including cryptic or rare species such as Greater Glider.	Undertaken on foot through representative habitats, at a leisurely pace using hand-held spotlights and/or head torches to search for target fauna. May include intermittent nocturnal voice playback to elicit a response from target species.
Electronic Bat Detectors	To determine the relative value of habitats for native fauna and compile a comprehensive fauna list, as well as the presence of significant microbat species.	Survey involve walking a predetermined transect, stopping to record calls detected, and remote/stationary detection at specific locations such as stag trees.
Opportunistic records	To supplement the systematic survey results and provide a more comprehensive listing of fauna present.	Covers all other fauna observations outside of systematic and targeted survey methodologies.

To inform potential Koala offset requirements, non-juvenile Koala habitat trees observed within the proposed development footprint has been undertaken.

A non-juvenile Koala habitat tree (NJKHT) is defined under the *Planning Regulation 2017* as:

- a food tree of the *Corymbia, Melaleuca*, *Lophostemon* or *Eucalyptus* genera, or a shelter tree species such as *Angophora;* and
- a height of more than four metres; or has a trunk circumference of >31.5 cm at 1.3 m above the ground.

Specific targeted assessments of all lots to inform site design and identification of Koala habitat were undertaken by Adrian Caneris, Lizzy Buckby and Jonny Pickvance between 10-14 August. The surveys included capture of GPS locations of Koala habitats to inform site design as well as targeted searches for Koala and Koala evidence. Weeds and other habitat value considerations were also observed, and incidental fauna records were captured. A survey of lot 801 was undertaken by Adrian Caneris and Lizzy Buckby on 14 September 2018 to plot NJKHT.

3.0 RESULTS

3.1 GENERAL ECOLOGICAL VALUES

3.1.1 Terrestrial Habitats

The subject lots support a mix of habitat values. There are individual old growth trees, patches of regrowth vegetation and grassy/weedy pastures (**Photos 1 and 2**). The forested portions of the study area are those currently mapped as remnant vegetation and or Koala bushland and are comprised predominantly of Scribbly Gum *Eucalyptus racemosa* woodland with Queensland Blue Gum *Eucalyptus tereticornis* and Broad-leaved Paperbark in the riparian habitats. These areas are retained outside of the development footprint.

There are patches of native vegetation in association with existing dams. These areas contain occasional large trees and regrowth dominated by Broad-leaved and Black wattle *Acacia leiocalyx.*

The vegetated portions of the study area are providing suitable foraging, roosting and breeding resources for avian species. Within the development footprint patches of regrowth vegetation are mostly devoid of native mid and ground storey species and support few values for native fauna.

Koala evidence was recorded from habitats associated with Moogurrapum Creek and Lot 801 in the form of scats.

The hollow-bearing trees within woodland habitats and those occurring as isolated paddock trees provide valuable nesting and refuge habitats for hollow dependant species.

The mown grasses provide food resources for wallabies that would utilise adjacent densely vegetated areas for daytime shelter.

Table 3.1 provides a list of fauna species recorded from the study area and immediate surrounds.

3.1.2 Aquatic Habitats

The Moogurrapum Creek waterway within lot 2 on RP169475 and Lot 7 RP57455 is identified on the State's vegetation management mapping as a watercourse and as a wetland (**Appendix 2**). The same waterway is identified on the City Plan Waterway and Wetlands Overlay.

There is an overland flow path entering the study area in Lot 5 on SP293881 and traversing south east although there are several dams present which limit the hydrological flows. These dams provide aquatic habitats of varying degrees, from large permanent deep impoundage areas through to relatively small shallow water storages that provide permanent water sources for native species (**Photo 3**).

Assessment of the dams has determined that the vertebrate aquatic species are dominated by the introduced Mosquito fish *Gambusia holbrooki.* Eastern Water dragon *Intellagama lesueurii* was also recorded in association with the dams, and there is high potential for native turtles and native eels to be present within the larger dams.

Photo 1. Lot 7 RP 57455 showing open pastoral areas on the edge of habitats to be retained within the open space network.

Photo 2. Lot 3RP1480004 Typical view of the mixed habitats of open pastoral areas and scattered vegetation.

Photo 3. Lot 5 RP 293881 showing one of the dams providing permanent water and aquatic habitats.

Table 3.1. Recorded fauna from the Study Area and immediate surrounds*.

Scientific Name	Common Name	Scientific Name	Common Name
Amphibians			
Limnodynastes terraereginae	Scarlet-sided Pobblebonk	*Litoria rubella*	Ruddy Treefrog
Limnodynastes peronii	Striped Marshfrog	*Litoria fallax*	Eastern Sedgefrog
Crinia parinsignifera	Beeping Froglet	*Rhinella marina**	Cane Toad*
Litoria caerulea	Common Green Treefrog		
Reptiles			
Intellagama lesueurii	Eastern Water Dragon	*Cryptoblepharus pulcher*	Elegant Snake-eyed Skink
Dendrelaphis punctulatus	Green Tree Snake	*Lygisaurus foliorum*	Tree-base Litter-skink
*Hemidactylus frenatus**	House Gecko	*Tiliqua scincoides*	Eastern Blue-tongue Lizard
Ctenotus taeniolatus	Copper-tailed Skink	*Pogona barbata*	Bearded Dragon
Calyptotis scutirostrum	Scute-snouted Calyptotis	*Carlia vivax*	Tussock Rainbow-Skink
Lampropholis delicata	Dark-flecked Garden Sunskink		
Birds			
Gerygone olivacea	White-throated Gerygone	*Taeniopygia bichenovii*	Double-barred Finch
Sericornis frontalis	White-browed Scrubwren	*Todiramphus sanctus*	Sacred Kingfisher
Haliastur sphenurus	Whistling Kite	*Dacelo novaeguineae*	Laughing Kookaburra
Aviceda subcristata	Pacific Baza	*Hirundo neoxena*	Welcome Swallow
Anas superciliosa	Pacific Black Duck	*Petrochelidon ariel*	Fairy Martin
Chenonetta jubata	Australian Wood Duck	*Malurus lamberti*	Variegated Fairy-Wren
Egretta novaehollandiae	White-faced Heron	*Malurus melanocephalus*	Red-backed Fairy-Wren
Bibulous ibis	Cattle Egret	*Alectura lathami*	Australian Brush-turkey
Egretta garzetta	Little Egret	*Lichmera indistincta*	Brown Honeyeater
Cracticus tibicen	Australian Magpie	*Philemon corniculatus*	Noisy Friarbird
Cracticus torquatus	Grey Butcherbird	*Manorina melanocephala*	Noisy Miner
Cracticus nigrogularis	Pied Butcherbird	*Myzomela sanguinolenta*	Scarlet Honeyeater
Cacatua galerita	Sulphur-crested Cockatoo	*Entomyzon cyanotis*	Blue-faced Honeyeater
Eolophus roseicapillus	Galah	*Caligavis chrysops*	Yellow-faced Honeyeater
Coracina novaehollandiae	Black-faced Cuckoo-shrike	*Meliphaga lewinii*	Lewin's Honeyeater
Vanellus miles	Masked Lapwing	*Merops ornatus*	Rainbow Bee-eater
Geopelia humeralis	Bar-shouldered Dove	*Grallina cyanoleuca*	Magpie-lark
*Streptopelia chinensis**	Spotted Dove*	*Dicaeum hirundinaceum*	Mistletoe Bird
*Columba livia**	Rock Dove*	*Sphecotheres vieilloti*	Australasian Figbird
Ocyphaps lophotes	Crested Pigeon	*Pachycephala rufiventris*	Rufous Whistler
Eurystomus orientalis	Dollarbird	*Colluricincla harmonica*	Grey Shrike-thrush
Corvus orru	Torresian Crow	*Pardalotus striatus*	Striated Pardalote
Centropus phasianinus	Pheasant Coucal	*Eopsaltria australis*	Eastern Yellow Robin
Scythrops novaehollandiae	Channel-billed Cuckoo	*Podargus strigoides*	Tawny Frogmouth
Dicrurus bracteatus	Spangled Drongo	*Platycercus adscitus*	Pale-headed Rosella
Trichoglossus haematodus moluccanus	Rainbow Lorikeet	*Trichoglossus chlorolepidotus*	Scaly-breasted Lorikeet
Porphyrio melanotus	Purple Swamphen	*Acridotheres tristis**	Common Myna*
Rhipidura leucophrys	Willie Wagtail	*Threskiornis molucca*	Australian White Ibis
Mammals			
*Vulpes vulpes**	Red Fox*	*Rattus rattus**	Black Rat*
*Lepus europaeus**	European Brown Hare*	*Isoodon macrourus*	Northern Brown Bandicoot
Macropus rufogriseus	Red-necked Wallaby	*Trichosurus vulpecula*	Common Brushtail Possum
Tadarida australis	White-striped Freetail Bat	*Phascolarctos cinereus*	Koala
*Mus musculus**	House Mouse*		

*A more comprehensive listing of fauna within the locality can be found in BAAM 2017.

3.1.3 Existing Corridors and Connectivity

The habitats associated with Moogurrapum Creek provide important ecological linkages within the local landscape. This riparian area holds the greatest value as fauna habitat and supports several species associated with the more complex habitat structure that were not recorded within in the more open, rural lands.

Woodland habitat within Lot 801 forms part of a well-vegetated corridor (40-100 m in width) associated with a drainage line and series of small dams between the Victoria Point Shopping Centre and Little Eprapah Creek which forms the western boundary of the Victoria Point Structure Plan Area. Currently there is no vegetated connection between this corridor and the habitats associated with Moogurrapum Creek.

Opportunities for fauna movement within the remainder of the study area are limited due to existing rural uses and prior vegetation clearing. Scattered trees and pastures are being utilised by birds, though the species present are comprised mostly of larger, gregarious species that thrive in disturbed bushland, parks gardens and are known to move through urbanised landscapes.

Native ground-mammal species are few, with the more common occurring species being Red-necked Wallaby and Northern Brown Bandicoot which are well-suited to the current conditions. No Koala evidence was recorded onsite although this species has been recorded immediately north and west of the site and is known to move relatively freely between isolated trees and woodland fragments, provided heavy weed infestations are not present and obstructing movement opportunities.

The study area includes components of the proposed VPSP Wildlife Corridor System described in BAAM (2017).

3.2 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The results from the EPBC Protected Matters Search completed for the study area and a 5km buffer is provided in **Appendix 1.** The relevant matters of national environmental significance are discussed in **Sections 3.2.1-3.2.4**.

Any actions that are likely to have a significant impact on a Matter of National Environmental Significance (MNES) are subject to assessment under the Commonwealth's EPBC Act approval process.

The study area development does not warrant a referral under the EPBC. Although no specific triggers for a referral have been identified, a referral of the overall structure plan would be prudent, due to the size of the development area and to provide project certainty for the separate proponents across the applicable lands.

The following comments are specific in respect to the study area and proposed development layout.

3.2.1 Listed Threatened Ecological Communities

Initial desktop assessment found three EPBC Act listed Threatened Ecological Communities (TECs) could potentially occur onsite: Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland (Endangered), Lowland Rainforest of Subtropical Australia (Critically Endangered) and Subtropical and Temperate Coastal Saltmarsh (Vulnerable) (**Appendix 2**).

No vegetation communities with species indicative of the three TECs are identified under the State vegetation mapping (refer to **Section 3.5.1**) and these TECs do not occur within, or in close proximity to, the study area.

3.2.2 Listed Threatened Terrestrial Species

No EPBC Act listed flora species were recorded during the survey and, based on the habitat present, none are considered likely to occur.

Appendix 4 provides an assessment of likelihood of occurrence of listed flora species.

Based on a consideration of likelihood of occurrence and knowledge of the study area, two EPBC Act listed threatened fauna species are known to occur within the site: Koala *Phascolarctos cinereus* (EPBC Act and Queensland *Nature Conservation Act 1992* [NC Act]: Vulnerable) and Grey-headed Flying-fox *Pteropus poliocephalus* (EPBC Act: Vulnerable).

Under the EPBC Act, an action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of an important population of a species;
- reduce the area of occupancy of an important population;
- fragment an existing important population into two or more populations;
- adversely affect habitat critical to the survival of a species;
- disrupt the breeding cycle of an important population;
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;
- result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat;
- introduce disease that may cause the species to decline; or
- Interfere substantially with the recovery of the species (DotE 2013).

Koala

Koala is known to occur within the local landscape and there are many historical records. While no individual koalas were sighted during field assessments, Koala scats were recorded within the study area.

An assessment of the study areas importance as Koala habitat has been undertaken in accordance with the *EPBC Act referral guidelines for the vulnerable Koala* (DotE 2014) (**Table 3.2**).Based on the DoE criteria, the study area is not considered to contain habitat critical to the survival of the Koala (i.e. total score ≥5).

The study area does not contain habitat critical to the survival of the Koala as defined under the EPBC Act, the development plan does not affect the retention, protection and enhancement of the correctly mapped high value bushland which retains the higher Koala habitat values as recognised by the State of Queensland, and all Koala trees removed will be offset at a ratio of 3:1. As such, it is considered that the proposed actions will have no significant impacts to an important Koala population or to critical habitats and a referral to the Commonwealth would not be required.

Within the broader Structure Plan area, tracts and patches of existing Koala habitat are planned to be incorporated into the wildlife corridor network to facilitate and improve habitat connectivity. The corridors are proposed to be supplemented with Koala tree offset plantings.

Table 3.2. Koala habitat assessment tool (DoEE 2014) applied to the Structure Plan Area.

Attribute	Score	Assessment	
Koala occurrence	**2**	Desktop	The wildlife online database records 350 Koala sightings within a 2 km radius of the study area, since 1980. There are three records from Atlas of Living Australia within 2km of the study area in the past 5 years.
		On-ground	Koala evidence (scats) was observed during the site survey.
Vegetation composition	**2**	Desktop	The study area is not mapped as supporting remnant vegetation though there is remnant vegetation nearby. The forested habitats are suitable for Koala.
		On-ground	The study area supports two or more known Koala food tree species in either isolated stands of trees or in bushland blocks.
Habitat connectivity	**0**	The study area contains a mixture of rural/residential properties and agricultural lands that are bordered on all sides by relatively major roadways. Safe Koala	

Attribute	Score	Assessment	
		movements to large contiguous patches of bushland to the north and south west are severely compromised by the presence of barriers (double jump road, Bunker Road, Cleveland Redland bay road and Mt Cotton road as well as a the presence of domestic and working dogs. The site does not have connectivity to or as part of part of a contiguous landscape ≥ 300 ha.	
Key existing threats	**0**	Desktop	There have been four Koala road hits within 1 km of the study area within the past five years, a further three hits along nearby Double Jump Road and one dog attack within 1 km within the past 10 years recorded by DEHP (Daisy Hill Koala Hospital).
		On-ground	Due to the increasing residential developments within the local area, it is considered that the threat of vehicle strike and dog attacks would be relatively high in this location.
Recovery value*	**0**	Due to the small size of the study area and tenuous connectivity, it is considered that the study area does not support the interim recovery objectives.	
Total	**4**	Decision: The habitat is not considered critical to the survival of the Koala.	

* Data from DEHP Daisy Hill Koala hospital.

** Interim recovery objective (s): Protect and conserve large, connected areas of koala habitat, particularly large, connected areas that support koalas that are – genetically diverse/distinct, or – free of disease or have a very low incidence of disease; or – breeding (i.e. presence of back young or juveniles).

Grey-headed Flying-fox

While no flying-fox camps were found to occur within or immediately adjoining the study area, Grey-headed Flying-fox is likely to occur as a regular visitor to flowering trees. Within the broader Structure Plan area, tracts and patches of existing habitat are planned to be incorporated into the wildlife corridor network. With the addition of Koala tree offset plantings in wildlife corridors, and streetscape and garden plantings, the proposed development will not remove a significant amount of feeding habitat for flying-foxes or discourage flying-foxes from foraging in the location.

3.2.3 Listed Migratory Species

A desktop assessment from the EPBC Act Online Protected Matters Search Tool (**Appendix 1**) identified a number of migratory EPBC-listed migratory bird species as having potential to occur within habitats on or adjacent to the study area.

It should be noted that while the EPBC Act Online Protected Matters Search Tool incorporates species records, it also relies on modelling of suitable habitats and is largely predictive.

Seven migratory bird species have been previously recorded within 5 km of the study area (**Appendix 1**). Whilst the two Plover species *Charadrius leschenaultii* and *Charadrius mongolus* are almost entirely restricted to the coastline inhabiting littoral and estuarine areas, both species occasionally use inland saltpans and brackish swamps. The study area does not support any suitable habitats for these two species. The study area does not support marine habitats for the other five migratory species previously recorded within 5 km of the study area (**Appendix 1**) and these species should not be considered relevant to the proposed development.

3.2.4 Wetlands of International Importance

The results from the EPBC Protected Matters Search completed for the study area indicate that the study area is within 10 km of the Moreton Bay Ramsar site.

Erosion and Sediment control and stormwater runoff will need to be managed appropriately to ensure no significant impacts on the ecological function of Moreton Bay occur as a result of the construction or operation of the proposed residential development.

3.2.5 Weeds of National Significance

Weeds of national significance (WONS) were recorded within or immediately adjoining the study area, but mainly within vegetation associated with Moogurrapum Creek. WONS recorded include:

- Asparagus fern *Asparagus aethiopicus;*
- *Cats Claw Creeper Dolichandra unguis-cati;*
- Fire Weed *Senecio madagascariensis*
- Madeira Vine *Anredera cordifolia;* and
- Lantana *Lantana camara.*

Appropriate management of these species by the landholder is legally required.

3.3 MATTERS OF STATE ENVIRONMENTAL SIGNIFICANCE

There are Matters of State Environmental Significance (MSES) identified within the study area. The State Planning Policy (SPP) defines the Queensland Government's policies for matters of state interest in land use planning and development. The SPP specifies that MSES are valued and protected, and the health and resilience of biodiversity is maintained or enhanced to support ecological integrity.

3.3.1 Regulated Vegetation/Essential Habitat

Regulated Vegetation and Essential Habitat are mapped in association with Moogurrapum Creek (**Appendix 2**). There is no regulated regrowth shown within the study area, and Property Maps of Assessable Vegetation (PMAVs) certified by DNRME have mapped the remainder of the study area as Category X (non-remnant/non-regrowth).

The proposed development retains the mapped vegetation. As such, there is no applicable purpose or code to be assessed in respect to the Queensland *Vegetation Management Act 1999*.

3.3.2 Threatened Species

In Queensland threatened species are listed as Extinct in the wild, Endangered, Vulnerable or Near Threatened (EVNT) under the *Nature Conservation Act 1992* (NC Act).

Flora

The study area does not occur within a high-risk area on the State's Protected Plants Flora Survey Trigger Map (**Appendix 2**) therefore an application to clear native vegetation will not be required under the NC Act.

The Wildlife online search (**Appendix 1**) for a 3 km radius of the study area did not identify any threatened flora species. A wider search, which was undertaken as part of the structure plan in 2017 returned records of *Marsdenia longiloba, Marsdenia coronata*, *Macadamia integrifolia, Macadamia tetraphylla* and *Corchorus cunninghamii* as having been recorded within 6 km of the study area since 1980. These five species are associated with habitats that do not occur within the study area. Most of these records relate to habitats associated with Mt Cotton and surrounds and have little to no relevance with the subject site.

Appendix 4 provides an assessment of the likelihood of occurrence of EVNT flora in the study area.

Based on the field assessments; prior disturbances, extant habitats and habitat condition, it is concluded that no EVNT flora species are present, or are likely to be present, within the study area.

Fauna

A search of the Department of Environment and Science (DES) Wildlife Online database provides a list of EVNT species that have previously been recorded as occurring within a 3 km radius of the study area (**Appendix 1**). These are Tusked *Frog Adelotus* brevis and Koala *Phascolarctos cinereus*. Of these, only evidence of Koala was recorded during the field survey.

There are some habitat values for Tusked Frog *Adelotus brevis*, and particular within the Moogurrapum Creek environs which hold suitable breeding habitats. Although not recorded during site assessment, this species is considered as having potential to occur within the waterway and/or dams/pondage areas. However, due the mostly open pastoral habitats, the study area should not be viewed as supporting important habitats for this species outside of Moogurrapum Creek.

While not listed within the database search results there is some, although low, potential for Glossy Black-Cockatoo *Calyptorhynchus lathami* to feed within Lot 801 where there are food trees for the species present (*Allocasuarina littoralis*). No feeding signs were observed during the field assessments.

A list of all significant fauna within the local landscape and their potential to occur is provided as **Appendix 6**.

3.3.3 Wetlands and Waterways

Under the Development Assessment Mapping System (DAMS), administered by the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP), the study area is not identified as holding any Wetlands under the Matters of State Environmental Significance State Planning Policy (**Appendix 3**).

The waterway associated with Moogurrapum Creek has sections identified as ‘Low’ and ‘Moderate’ waterways for waterway barrier works. This identification seeks to ensure any proposed actions do not result in a barrier for fish passage.

As the proposed development is entirely outside of the mapped waterways and no loss of fish passage will occur.

3.3.4 South East Queensland Koala Planning Framework

The DSDMIP DAMS mapping identifies that the study area within a Priority Koala Assessable Development Area (**Appendix 2**). Therefore, any future development will be subject to the provisions of Schedule 11 of the *Planning Regulation 2017* in relation to Koala habitat.

The study area is within the urban footprint under the *South East Queensland Regional Plan 2009 – 2031* and Emerging Community Zone of the City Plan.

The proposed development footprint has been informed by ecological, engineering and economic considerations, with all the land supporting mapped Koala Bushland being maintained. The entire footprint of the proposed development is contained within areas mapped as Medium Value Rehabilitation under the Koala SPRP Habitat Value Mapping.

A maximum of 982 NJKHT from the mapped Medium Value Rehabilitation area are within the development footprint (**Appendix 5**).

Unavoidable clearing of NJKHT in areas mapped as Medium Value Rehabilitation must be offset in accordance with the Queensland *Environmental Offset Policy*.

Under the Queensland *Environmental Offset Policy*, offsets for the removal of Koala habitat within south-east Queensland may be provided as a proponent-driven, land-based offset or a financial settlement offset, or a combination of both.

In terms of proponent-driven offsets, the policy requires that the rehabilitation, establishment and protection of Koala habitat is the only appropriate action to offset Koala habitat within south-east Queensland, based on the following requirements:

- *The offset must establish three new Koala habitat trees for every one 'non-juvenile' tree removed.*
- *Offset plantings must be within the same local government area as the impact site.*
- *The offset must be in an area identified as high value or medium value suitable for rehabilitation habitat. Where these are not available Koala offset sites should be located within low value suitable for rehabilitation habitat or where appropriate, within bushland habitat to enhance the quality of bushland within the local government area.*
- *Koala habitat trees to be established as an offset must be reflective of the species that are endemic to the site and be planted at densities that will produce a mature density reflective of the regional ecosystems present on the site.*

The removal of 982 non-juvenile Koala habitat trees which would require the establishment of 2946 new Koala habitat trees.

Furthermore, where an offset is delivered as a land-based offset, the site must be secured as a legally secured offset area as defined by section 29 of the *Environmental Offsets Act 2014* (other than as Environmental Offset Protection Area).

It is understood the proponent intends to establish the Koala offset requirements within the finalised wildlife corridor network of the VPSPA with the specific location and configuration to be determined when individual RAL applications are completed and offset delivery plans can be accurately completed.

The Koala trees within the development footprint are expected to be offset within the proposed wildlife corridors planned for the VPSPA (BAAM 2018). This will result in an overall increase in Koala habitat and habitat connections within the VPSPA.

Alternatively, a financial settlement option can be taken, calculated using the Queensland Government's web-based Financial Settlement Offset Calculator.

In this case, the removal of 982 NJKHTs would require a financial settlement of $903,440.

There is also an option of combining the offset options and delivery part of the required offset as a proponent-driven offset and the balance as a financial offset.

3.3.5 Animal Breeding Places

Under the NC Act, activities that require tampering with a native animal breeding place must be undertaken in accordance with an approved Species Management Program (SMP).

Active animal breeding places were observed during the field survey, being the use of Hollow bearing trees by Rainbow Lorikeets and Galahs. As the time and season of proposed works commencing is unknown, it will be important that prior to any vegetation clearing being undertaken an ecologist or qualified fauna spotter/catcher should inspect all vegetation immediately prior to clearing, and if any confirmed active breeding places are recorded and need to be removed, an SMP application would need to be submitted to the Department of Environment and Science for approval.

3.3.6 Weeds of State Significance

Weed species listed as restricted, invasive plants under the Queensland *Biosecurity Act 2014* recorded on site include:

- Asparagus Fern *Asparagus aethiopicus;*
- Singapore Daisy *Sphagneticola trilobata*;
- Brazilian Pepper Tree *Schinus terebinthifolius;*
- Camphor Laurel *Cinnamomum camphora;*
- Chinese Celtis *Celtis sinensis;* and
- Lantana *Lantana camara*.

These Category 3 restricted invasive plants are species that are already established in Queensland and seriously threaten Queensland's primary industries, natural environment, livestock, human health and/or people's livelihoods.

In accordance with the *Biosecurity Act 2014*, Category 3 restricted matters must not be distributed (i.e. released into the environment) unless the distribution or disposal is authorised in a regulation or under a permit. More generally, landowners are responsible for taking all reasonable and practical steps to minimise the risks associated with invasive plants under their control. Contractors appointed to the project will also need to implement management controls and disposal in accordance with the *Biosecurity Act 2014*.

3.4 MATTERS OF LOCAL ENVIRONMENTAL SIGNIFICANCE

Redland City Council City Plan 2018 provides *Planning Scheme Policy 1 - Environmental Significance* which identifies the relevant values of Environmental Significance which are identified as matters of Local Environmental Significance (MLES).

Of relevance to the study area are the Environmental Significance Overlay (Overlay Map - OM-007) and the Waterway Corridors and Wetlands Overlay (Overlay Map – OM-2013). Both overlays within the VPSPA are provided in Appendix 3.

3.4.1 Environmental Significance Overlay

The stated purpose of the Environmental Significance Overlay Code is to manage development to avoid or minimise and mitigate significant impacts on Matters of National, State and Local environmental significance.

The purpose of the code is achieved through the following overall outcomes:

a) areas of high biodiversity or environmental significance are retained and protected;

b) development maximises the retention of native vegetation and significant habitat features;

c) development minimises the loss of koala habitat trees;

d) impacts on matters of state or local environmental significance are minimised and mitigated;

e) development does not cause substantial fragmentation of habitat areas;

f) opportunities for safe and viable wildlife movement within and between habitat areas are facilitated;

g) landscaping and planting is undertaken in a manner that contributes to the ecological values of the site; and

h) where they occur, significant residual impacts on matters of local environmental significance or another prescribed environmental matter in accordance with section 15(4) of the Environmental Offsets Act 2014, may need to be offset.

Those outcomes relating to matters of National and State environmental significance are addressed in **Sections 3.2 and 3.3** respectively. The specific benchmarks for assessable development within the Environmental Significance Overlay Code are addressed in **Table 3.4.1.** Code responses provided in respect to water quality have been provided by Water Technology Pty Ltd.

Table 3.4.1—Benchmarks for development that is accepted subject to requirements and assessable development

Performance Outcomes	Acceptable Outcomes	Response
For development that is accepted subject to requirements		
PO1 Development does not result in a significant reduction in the level or condition of biodiversity and ecological functions and processes in the locality.	**AO1.1** Compensatory planting is undertaken on-site that is equal in area to the area of the vegetation cleared.	N/A – the application is assessable development.
For assessable development		
Values to be protected		
PO2 Development does not result in a significant reduction in the level or condition of biodiversity and ecological functions and processes in the locality.	No acceptable outcome is nominated.	The habitats mapped as MLES are primarily Koala habitats and remnant vegetation associated with Moogurrapum Creek. There will be a loss of Koala habitat trees within the urbanised portion of study area. Any non-juvenile Koala habitat trees removed are required to be offset at the rate of 3:1 in accordance with the Environmental Offset Policy (the same ratio as for MLES)to provide a net gain in Koala habitat within the local area. Due to the retention of all the bushland habitats, provision of vegetated linkages between these areas and the offsetting of all koala habitat trees removed there will be no significant reduction in the level or condition of biodiversity and ecological functions and processes in the locality.
PO3 Development does not cause substantial fragmentation of habitat areas.	No acceptable outcome is nominated.	No substantial fragmentation is proposed. The provision of the designated linkages will result in an overall increase in vegetated habitat connections.
PO4 Connections between habitat areas are retained, so that movement of key species and normal gene flow between populations is not inhibited or made less safe. Connections may include both continuous corridors and “stepping stone” patches and refuges.	No acceptable outcome is nominated.	Connections between existing core habitats are planned that provide suitable fauna movement opportunities as part of the proposed VPSPA Wildlife Corridor System (BAAM 2017). There is a minor reduction in the size of the secondary corridor (3 m reduction to provide an access driveway to the proposed allotment on lot 801) at the south eastern corner of Lot 801. Although a small decrease in the 60m width is proposed, this is a very narrow intrusion and is adjoined by a wider portion of the corridor. This minor reduction in size will not form a barrier to fauna movement and is not viewed as compromising the overall wildlife movement network.

Performance Outcomes	Acceptable Outcomes	Response
Minimising and mitigating impacts		
PO5 Edge effects on retained habitat areas are minimised by providing the smallest possible perimeter to area ratio.	No acceptable outcome is nominated.	The retained bushland habitat comprises relatively large areas in the north (Lot 801) and east (Moogurrapum Creek) of the proposed development area. The existing perimeter to area ratio of these areas is will not be substantially altered as a result of the development. The proposed corridors will be exposed to edge effects though these will be at a level lower than any existing movement option. Roadways and associated verges provide additional buffering.
PO6 The design, scale and intensity of development minimises impacts on retained habitat.	No acceptable outcome is nominated.	The proposed layout retains all the mapped Koala bushland and Moogurrapum Creek riparian habitats. The scale and intensity of development has been determined in consideration of other design constraints and the overall structure plan to result in an effective land use design for the emerging community zone.
PO7 Retained habitat is protected to ensure its on- going health and resilience, and to avoid degradation as a result of edge effects.	No acceptable outcome is nominated.	It is understood that the open space and associated habitats are to be dedicated to RCC for ongoing protection. Corridors will contain Koala offset plantings which require protection under the Qld *Environmental Offsets Act 2014*.
PO8 Barriers restricting the movement and dispersal of wildlife are removed, except where they are necessary for the safety of people or animals.	No acceptable outcome is nominated. Editor's note—Guidance on fencing design, fauna movement structure and the like is provided in Planning Scheme Policy 1 – Environmental significance.	Site design has been developed to minimise road crossings within the proposed habitat linkages. The proposed development provides a design that does not result in any unnecessary severing of proposed habitat linkages designed for the VPSPA. There are dedicated fauna crossing facilities to be provided where corridors intersect with roadways.
PO9 Development does not result in the introduction of pest species (plant or animal), that pose a risk to ecological integrity or disturbance to native fauna.	No acceptable outcome is nominated. Editor's note—Weed species are identified in Council's Pest Management Plan 2012 – 2016, Part B.	The weeds present on site and surrounding lands are all common in the local landscape. No new introduction of pest species (plant or animal), are expected or are likely to pose a risk to the areas ecological integrity.
PO10 Development minimises alterations to natural landforms, flow regimes, groundwater recharge and surface water drainage patterns.	No acceptable outcome is nominated.	There are minimal changes expected to the landform or flow regimes. The aesthetic spine will improve ecological flows and result in a more natural watercourse configuration through the removal of existing dams. Drainage has been designed to ultimately result in the outflows entering waterways in the same locations.
PO11 Development minimises potential for disturbance of	No acceptable outcome is nominated.	The layout has minimised potential for disturbance of wildlife as a result of noise, light, vibration or other sources wherever practical

Performance Outcomes	Acceptable Outcomes	Response
wildlife as a result of noise, light, vibration or other source.		within the requirement to have an effective land use design. The layout provides road frontages to retained habitats and corridors to limit disturbances. The impacts of construction and habitation of the proposed residential dwellings will be typical of residential development within an emerging community zone.
PO12 Roads and public access within and adjacent to areas of ecological significance are located and designed to avoid disturbance of ecological values or danger to wildlife.	No acceptable outcome is nominated.	The roadways and public areas are located outside of those areas identified as holding high ecological significance. The VPSPA has been designed to limit road crossings and these have been designed to incorporate fauna crossings where they intersect with proposed corridors.
Corridors and enhancement planting		
PO13 Development contributes to the restoration of waterway or land based ecological corridors, where they would significantly enhance the health and resilience of habitat and wildlife on and near the site.	No acceptable outcome is nominated.	The site design has retained the core habitat values and riparian areas. These will be subjected to a vegetation management and wildlife habitat management to enhance the health and resilience of habitat values present. The proposed development and associated actions will contribute to the restoration of the waterway and proposed wildlife corridors.
PO14 Corridors have sufficient width to maintain viable wildlife or habitat linkages.	**AO14.1** Ecological corridors have a minimum width of 100m.	The proposed development retains and completely avoids the key ecological corridor being Moogurrapum Creek and associated vegetated habitats which are over 100 m wide. The design retains the bushland habitat in the north of the study area (Lot 801) which plays also an important role in the overall viability of wildlife habitat within the development area. The secondary linkages have been designed to provide appropriate width for all fauna known or predicted to occur within the local landscape (BAAM 2017).
PO15 Development incorporates opportunities for revegetation to enhance habitat condition, biodiversity and wildlife movement.	No acceptable outcome is nominated.	There will be provision of offset plantings or financial contributions to provide revegetation to enhance habitat condition, biodiversity and wildlife movement. The proposed corridors will be revegetated. The proposed development will enhance habitat condition, biodiversity values and wildlife movement options and result in an overall increase in connected vegetated Koala habitats.
PO16 Enhancement plantings and landscaping utilise endemic native species which replicate or complement the composition of the habitat it is connected to, unless this would increase bushfire risk.	No acceptable outcome is nominated. Editors note—Guidance to assist applicants is contained within the Queensland Government's Regional Ecosystem Mapping	All revegetation will incorporate appropriate endemic native species to replicate or complement the composition of the habitat values of the landscape. All plantings will be reflective of the species that are endemic to the site and be planted at densities that will produce a mature density reflective of the regional ecosystems which would naturally occur in the location.
PO17	No acceptable	The development is proposed to occur in stages.

Performance Outcomes	Acceptable Outcomes	Response
Where clearing occurs, it is sequenced and undertaken in a manner that provides opportunities for fauna to vacate affected land.	outcome is nominated. Editor's note—It is likely that a wildlife habitat management plan, prepared by an ecologist with suitable experience may be needed to address survival and ongoing access to habitat trees during construction and operation of the development.	Clearing will be conducted in accordance with the Qld Planning Regulation Schedule 11 benchmarks. All clearing will be directed from the outer edges and towards retained habitats to facilitate fauna movement into retained areas. All clearing will be conducted under the guidance of a fauna spotter catcher.
Offsets		
PO18 Where development results in, or is likely to result in, a significant residual impact on matters of local environmental significance, despite all reasonable on-site mitigation measures, the impact will be offset.	**AO18.1** Offsets are provided in accordance with offset arrangements set out in Planning Scheme Policy 1 – Environmental significance.	Due to the offsetting of MSES (Koala habitat) and based on our review of the locally significant species listed in Appendix A of RCC City Plan 2018 Policy 1, there is no potential for any significant residual impacts on the species identified as being locally significant.

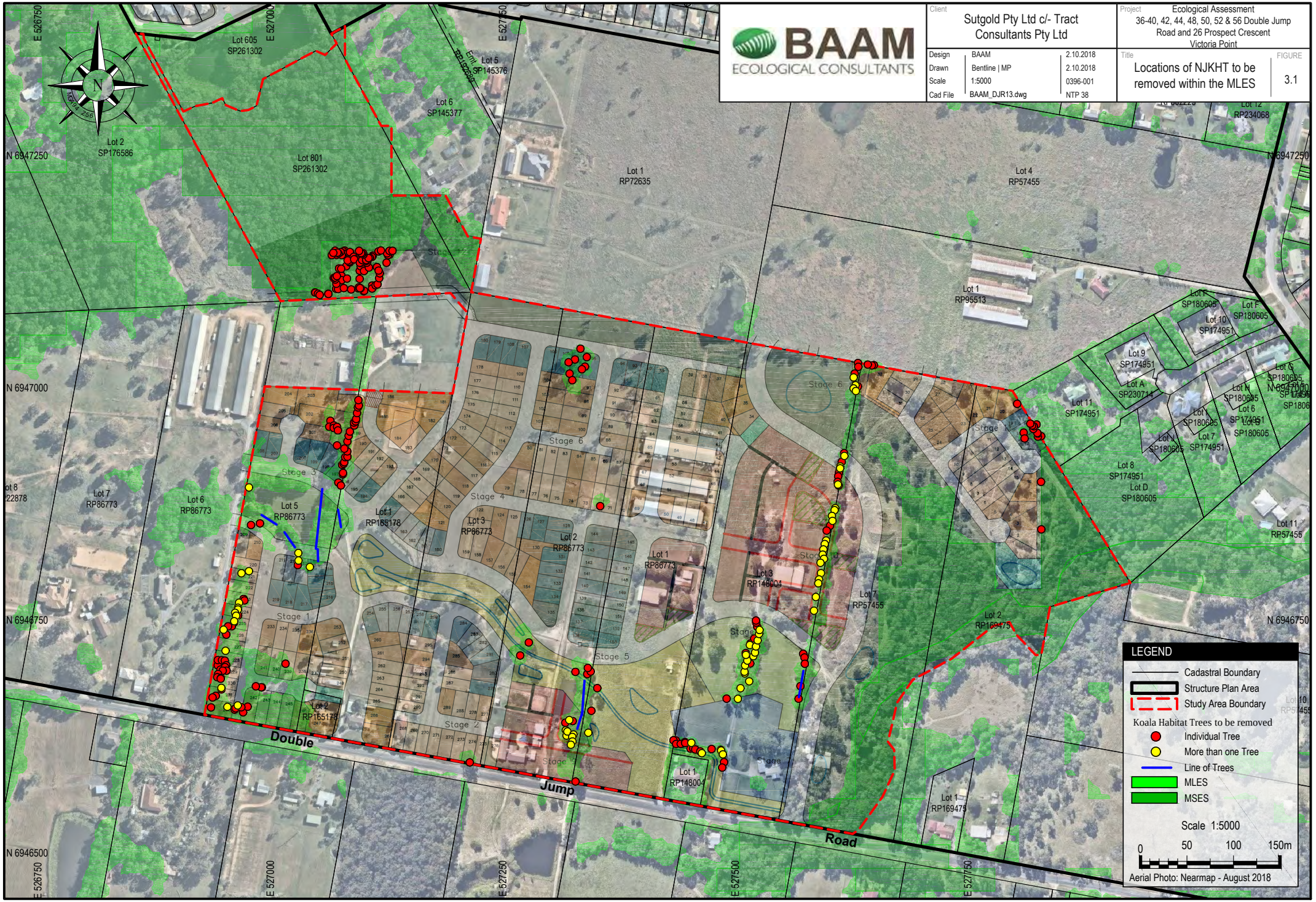
The study area forms a component of the VPSPA Wildlife Corridor System.

The objective of the VPSPA Wildlife Corridor System (BAAM 2017) focuses on providing habitat connectivity to facilitate safe wildlife movements to and from the retained bushland habitats within the VPSP, whilst having regard to where suitable linkages exist in the wider landscape (refer: Figure 3.2, BAAM 2017). The VPSP corridor network interlinks within a broader network as shown on and is primarily located in accordance with the RCC Wildlife Connections Plan. Layout and concepts for development within the VPSP were reviewed in a workshop with RCC officers on 11 September 2018.

The location of the NJKHT within the mapped MLES areas is shown on **Figure 3-1**. There is a total of 611 NJKHT to be removed from the MLES areas. These comprise a mix of individual large hollow bearing trees, patches of mixed regrowth eucalyptus species and numerous Broad-leaved Paperback trees around existing dams. As noted in City Plan Policy 1, s1.6.1 areas mapped as MLES in the overlay may be found to have the attributes of MSES and these values should be treated as MSES. Vegetation within the mapped MLES is dominated by NJKHT and therefore will be offset as MSES as required by the *Planning Regulation 2017*.

In respect to overall MLES the state requirement to offset all NJKHT removed ensures that the Koala trees that occur within the MLES mapping in the study area are to be replaced at a ratio of 3:1 which mitigates any potential long term residual impact.

In regard to MLES significant species, these are listed in Appendix A of City Plan Policy 1. There is no significant habitat for MLES species within the study area, and no significant residual impact for any these species is predicted.



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3.4.2 Waterway Corridors and Wetlands Overlay

One area of Waterway Corridor and Wetlands is identified within the study area (**Appendix 3**) in association with Moogurrapum Creek. The proposed development layout avoids and provides increased buffers to the mapped values, other than a very minor incursion within the nominated waterway buffer in the very southernmost portion of the study area for the entrance roadway. The roadway location has been determined through detailed design, particularly the transport and traffic study, within the overall VPSPA layout and provides the only acceptable entrance point for the south-eastern portion of the development. This location currently has an existing driveway and is dominated by exotic vegetation and a dwelling and no loss of ecological or riparian values will result. A vegetation management plan will be developed to provide increased habitat values within the buffer which will include detailed screen and buffer planting for this location.

A Flood and Stormwater Management Plan has been prepared by Water Technology Pty Ltd which addresses all aspects of hydrological flows and water quality (Water Technology 2018). The specific benchmarks for assessable development within the Waterway Corridors and Wetlands Overlay are addressed in **Table 3.4.2**

Table 3.4.2—Benchmarks for development that is accepted subject to requirements and assessable development

Performance Outcomes	Acceptable Outcomes	Response
For assessable development		
PO1 Development does not adversely impact on the hydrological regime or recharge of a wetland or waterway.	No acceptable outcome is nominated.	Complies. Existing hydrologic regimes are retained as described in sites Flood and Stormwater Management Plan (Water Technology 2018)
PO2 A core riparian buffer is maintained along and around waterways and wetlands that is vegetated, development free, and is of a sufficient width to: (1) protect water quality; (2) protect the stability of stream bank and bed; (3) allow for natural hydrological and geomorphological processes; (4) minimise erosion; (5) maintain or achieve healthy water temperatures and in-stream conditions; and (6) support viable wildlife habitat and movement.	**AO2.1** A development free, vegetated buffer area is provided in accordance with Table 8.2.11.3.2.	There is a minor incursion within the nominated buffer by the proposed entrance roadway. This location currently has an existing driveway and is dominated by exotic vegetation and a dwelling as shown in photo below. The roadway location has been determined through the traffic study and within the overall VPSPA layout and provides the only acceptable entrance point in the eastern portion of the development. The roadway will provide some buffering of the waterway and detailed screen planting and waterway management actions within the retained buffer will result in an overall increased ecological outcome.
	AO2.2	Development is generally located

Performance Outcomes	Acceptable Outcomes	Response
	No clearing occurs within the buffer area provided in accordance with Table 8.2.11.3.2.	outside of riparian buffer. Proposed development intersects the waterway buffer flood overlay in the South East portion of the site. This is not considered significant given: A significant portion of the waterway buffer is retained and will be subject to detailed vegetation management plan to increase ecological values; - The existing vegetation is dominated by vegetation exotic species and numerous recognised environmental weeds. - The location currently has low ecological values and contains an existing driveway and dwelling.
PO3 Riparian vegetation provides sufficient shade over the stream to protect in-stream habitat, biodiversity and ecological processes.	**AO3.1** Vegetation achieves 70% canopy cover over streams 10m or less in width and 70% canopy cover over near-bank areas along other streams.	There will be a detailed vegetation management plan and habitat management plan to guide ecological restoration. The existing riparian vegetation is fully retained by the layout.
PO4 Development maximises opportunities for natural filtration of sediments, nutrients and other pollutants, and slowing of overland flow.	No acceptable outcome is nominated.	Stormwater quantity devices exceed required reduction targets. Refer to the Flood and Stormwater Management Plan for the Site (Water Technology 2018). Full details of detailed design of natural filtration areas are to be provided as part of operational works and design.
PO5 The development is designed to avoid any worsening of water quality in a waterway or wetland. Editor's note—Applicants must also have regard to the Healthy waters code.	No acceptable outcome is nominated.	Stormwater quantity devices exceed required reduction targets. Refer to the Flood and Stormwater Management Plan for the Site (Water Technology 2018).
PO6 Bank erosion and slumping is avoided and hydrological and geomorphological processes of a waterway or wetland are maintained by: (1) providing an area either side of the existing channel to allow for natural lateral and longitudinal movement; (2) restoring bank vegetation and large woody debris within the channel; (3) implementing bank and bed stabilisation measures; and	No acceptable outcome is nominated. Editor's note—An environmental management plan may be required to support any proposed hydrology re-instatement works.	No bank erosion or slumping is expected. The design retains the existing hydrological flows and no loss of geomorphological processes; refer to the Flood and Stormwater Management Plan for the Site (Water Technology 2018). Detailed design will be provided as part of operational works.

Performance Outcomes	Acceptable Outcomes	Response
(4) reinstating a stable hydrology and geomorphology where it is modified or unstable.		
PO7 Barriers to in-stream or land based wildlife movement are removed unless they are naturally occurring or necessary for the safety of wildlife.	No acceptable outcome is nominated.	The removal of the existing dwelling, rural structures and fences within the southern portion of Lot 7 RP57455 will reduce barriers. The retained habitats east of the entry road provide uninterrupted wildlife movement. No loss of instream movement will result
PO8 Development incorporates opportunities for revegetation to enhance stream and habitat condition, biodiversity and wildlife movement wherever possible.	No acceptable outcome is nominated.	The removal of exotic vegetation (e.g. pines, celtis, lantana) and replacement will improve existing values. All revegetation/restoration works will incorporate appropriate endemic native species to replicate or complement the composition of the habitat values of the landscape. All plantings will be reflective of the species that are endemic to the site and be planted at densities that will produce a mature density reflective of the regional ecosystems which would naturally occur in the location.
PO9 Enhancement plantings and landscaping utilise endemic native species which replicate or complement the composition of the habitat it is connected to.	No acceptable outcome is nominated.	All revegetation will incorporate appropriate endemic native species to replicate or complement the composition of the habitat values of the landscape. All plantings will be reflective of the species that are endemic to the site and be planted at densities that will produce a mature density reflective of the regional ecosystems which would naturally occur in the location.
PO10 Development does not result in the introduction of non-native pest species (plant or animal) and removes existing pest species that pose a risk to ecological or stream integrity.	No acceptable outcome is nominated. Editor's note—Weed species are identified in Council's Pest Management Plan 2012–2016, Part B.	The weeds present on site and surrounding lands are all common in the local landscape. No new introduction of pest species (plant or animal), are expected or are likely to pose a risk to the areas ecological integrity. The proposed restoration actions will reduce their presence and provide increased habitat values.
PO11 Disturbance or predation of native fauna by domestic pets and livestock is prevented.	No acceptable outcome is nominated.	The entrance roadway provides an effective buffer and delineation of the retained habitats. The proposed layout removes existing domestic pets and livestock from the waterway and replaces these with native vegetation.
PO12 Development minimises potential for disturbance of wildlife as a result of noise, light, vibration or other source.	No acceptable outcome is nominated.	The entrance roadway provides a buffer to the proposed urbanised areas. Detailed design will seek to limit any light spillage into retained habitats. Screen plantings will provide additional buffering.
PO13	No acceptable	Access within the open space

Performance Outcomes	Acceptable Outcomes	Response
Public access to or along waterways and wetlands is located and designed to minimise disturbance of environmental values.	outcome is nominated.	network will be outside of the mapped waterways. No crossing of the waterway is sought.

Overall, the proposed layout protects the mapped Waterway Corridors and Wetlands and provides an increased buffer to these values. In combination with the proposed corridor revegetation and restoration works within the retained habitats, there will be a net increase in the overall ecological values of the riparian habitats associated with Moogurrapum Creek.

4.0 WILDIFE HABITAT MANAGEMENT

Habitat condition and fauna movement opportunities are proposed to be protected and enhanced within the proposed development area through the implementation of a Vegetation Management Plan (VMP) and a Wildlife Habitat Management Plan (WHMP). These plans are to be integrated to form a coordinated approach to the overall management of the site's ecological values.

Appropriate management strategies and techniques are to be guided by the South East Queensland Ecological Restoration Framework Guideline (Chenoweth EPLA and Bushland Restoration Services 2012).

The aim of the VMP will be to ensure the retained and restored habitat areas are treated through ongoing assisted restoration/regeneration to ensure full restoration of the structure, composition, and function of the pre-existing ecological communities. This will be achieved through weed removal and planting of appropriate endemic species.

The restoration activities will utilise a planting palette of native species that are endemic to the locality and primarily reflective of the regional ecosystems found in the local landscape.

Eucalyptus tereticornis and E. microcorys, recognised as the primary Koala food trees in the local area, will be used wherever appropriate. Other species of habitat value for Koala as food trees include *Eucalyptus seeana, E. siderophloia, E. tindaliae* and *Corymbia intermedia*.

To improve habitat condition, management of ongoing edge influences will be specifically addressed within the WHMP and will specify:

- The removal and continued maintenance of environmental weeds;
- The re-establishment of a natural ground layer and incorporation of fallen timber to shelter ground-dwelling species;
- The use of local ground layer, shrub and tree species that exhibit tolerance to remnant edges; and
- Denser planting along corridor edges to reduce temperatures and increase moisture levels in the central portions of the corridors

The aim of the WHMP will be to ensure that activities associated with construction and operation of the development does not cause any undue negative impacts on native fauna.

The WHMP will address the long-term management of fauna species and fauna habitat values on and will include measures to minimise and mitigate impacts on those species during all phases of development and operation.

The objectives of the WHMP will be to provide:

- A consistent and uniform approach which assures that the required standards of environmental protection, maintenance and Habitat Linkage are achieved;
- Procedures for the minimisation of disturbance to existing fauna in areas to be retained;
- An integrated approach to responsible management of the site's ecology and the maintenance or enhancement of ecosystem function in retained or rehabilitated areas; and
- A schedule of monitoring to be undertaken with appropriate feedback loops for active management.

The VMP and WHMP will be finalised upon the completion of the development assessment process and a finalised development footprint, and following establishment of final approval conditions.

5.0 REFERENCES

BAAM (2018). Victoria Point Structure Plan Area Ecological Matters Report. Report prepared for Fiteni Homes. Biodiversity Assessment and Management Pty Ltd, September 2018.

Chenoweth EPLA (2012). South East Queensland Ecological Restoration Framework Guideline.

Department of the Environment (DotE) (2013). Matters of National Environmental Significance: Significant Impact Guidelines 1.1. Commonwealth of Australia, Canberra.

DotE (2014). *EPBC Act referral guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory***.** Department of the Environment, Canberra.

Water Technology (2018). Flood and Stormwater Management Plan -36-40, 42, 44, 48, 50, 52, 56 Double Jump Road, 26 Prospect Crescent & 27 Brendan Way, Victoria Point. Water Technology Pty Ltd, October 2018.

APPENDIX 1
EPBC Act Protect Matters Online Search Tool and Wildlife Online Database Results

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

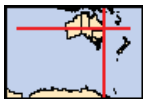
Report created: 13/09/18 15:12:20

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates
Buffer: 5.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	67
Listed Migratory Species:	76

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	109
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	1
Regional Forest Agreements:	None
Invasive Species:	34
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar) [Resource Information]

Name	Proximity
Moreton bay	Within Ramsar site

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species

Name	Status	Type of Presence
		habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Rostratula australis Australian Painted-snipe, Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within

Name	Status	Type of Presence
		area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area
Fish		
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat may occur within area
Insects		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat may occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area
Plants		
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area
Baloghia marmorata Marbled Balogia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
Corchorus cunninghamii Native Jute [14659]	Endangered	Species or species habitat likely to occur within area
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat may occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Endiandra floydii Floyd's Walnut [52955]	Endangered	Species or species habitat likely to occur within area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat likely to occur within area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat may occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Saiphos reticulatus Three-toed Snake-tooth Skink [88328]	Vulnerable	Species or species habitat may occur within area
Sharks		

Name	Status	Type of Presence
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Dugong dugon Dugong [28]		Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Breeding known to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa incana Wandering Tattler [831]		Roosting known to occur within area

Name	Threatened	Type of Presence
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]		
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area
Heteroscelus incanus Wandering Tattler [59547]		Roosting known to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area

Name	Threatened	Type of Presence
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting known to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area

Name	Threatened	Type of Presence
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Sterna albifrons Little Tern [813]		Species or species habitat may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area
Fish		
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Campichthys tryoni Tryon's Pipefish [66193]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus kelloggi Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
Microphis manadensis Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area
Solegnathus dunckeri Duncker's Pipehorse [66271]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Mammals		
Dugong dugon Dugong [28]		Species or species habitat known to occur within area
Reptiles		
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Laticauda laticaudata a sea krait [1093]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans [Resource Information]

Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Delphinus delphis Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Breeding known to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Bayview	QLD

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat likely to occur within area

Nationally Important Wetlands [Resource Information]

Name	State
Moreton Bay	QLD

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-27.59998 153.27572

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Status: All
Records: Confirmed
Date: Since 1980
Latitude: -27.6000
Longitude: 153.2758
Distance: 3
Email: adrian@baamecology.com
Date submitted: Thursday 13 Sep 2018 16:11:13
Date extracted: Thursday 13 Sep 2018 16:20:06

The number of records retrieved = 247

Disclaimer

As the DSITIA is still in a process of collating and vetting data, it is possible the information given is not complete. The information provided should only be used for the project for which it was requested and it should be appropriately acknowledged as being derived from Wildlife Online when it is used.

The State of Queensland does not invite reliance upon, nor accept responsibility for this information. Persons should satisfy themselves through independent means as to the accuracy and completeness of this information.

No statements, representations or warranties are made about the accuracy or completeness of this information. The State of Queensland disclaims all responsibility for this information and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs you may incur as a result of the information being inaccurate or incomplete in any way for any reason.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Bufonidae	*Rhinella marina*	cane toad	Y			14
animals	amphibians	Hylidae	*Litoria caerulea*	common green treefrog		C		2
animals	amphibians	Hylidae	*Litoria gracilenta*	graceful treefrog		C		2
animals	amphibians	Hylidae	*Litoria fallax*	eastern sedgefrog		C		6
animals	amphibians	Hylidae	*Litoria tyleri*	southern laughing treefrog		C		2
animals	amphibians	Limnodynastidae	*Adelotus brevis*	tusked frog		V		2
animals	amphibians	Limnodynastidae	*Limnodynastes peronii*	striped marshfrog		C		6
animals	amphibians	Myobatrachidae	*Mixophyes fasciolatus*	great barred frog		C		2
animals	amphibians	Myobatrachidae	*Crinia parinsignifera*	beeping froglet		C		6
animals	amphibians	Myobatrachidae	*Pseudophryne raveni*	copper backed broodfrog		C		4
animals	birds	Acanthizidae	*Sericornis frontalis*	white-browed scrubwren		C		7
animals	birds	Acanthizidae	*Smicrornis brevirostris*	weebill		C		2
animals	birds	Acanthizidae	*Acanthiza lineata*	striated thornbill		C		2
animals	birds	Acanthizidae	*Acanthiza pusilla*	brown thornbill		C		13
animals	birds	Acanthizidae	*Gerygone olivacea*	white-throated gerygone		C		12
animals	birds	Acanthizidae	*Gerygone levigaster*	mangrove gerygone		C		1
animals	birds	Accipitridae	*Haliaeetus leucogaster*	white-bellied sea-eagle		C		4
animals	birds	Accipitridae	*Accipiter novaehollandiae*	grey goshawk		C		2
animals	birds	Accipitridae	*Aquila audax*	wedge-tailed eagle		C		1
animals	birds	Accipitridae	*Haliastur indus*	brahminy kite		C		1
animals	birds	Accipitridae	*Elanus axillaris*	black-shouldered kite		C		1
animals	birds	Accipitridae	*Pandion cristatus*	eastern osprey		SL		1
animals	birds	Accipitridae	*Accipiter fasciatus*	brown goshawk		C		4
animals	birds	Accipitridae	*Aviceda subcristata*	Pacific baza		C		5
animals	birds	Accipitridae	*Haliastur sphenurus*	whistling kite		C		7
animals	birds	Aegothelidae	*Aegotheles cristatus*	Australian owlet-nightjar		C		1
animals	birds	Alcedinidae	*Ceyx azureus*	azure kingfisher		C		2
animals	birds	Anatidae	*Anas superciliosa*	Pacific black duck		C		16
animals	birds	Anatidae	*Aythya australis*	hardhead		C		8
animals	birds	Anatidae	*Cygnus atratus*	black swan		C		6
animals	birds	Anatidae	*Anas castanea*	chestnut teal		C		2
animals	birds	Anatidae	*Dendrocygna arcuata*	wandering whistling-duck		C		3
animals	birds	Anatidae	*Anas platyrhynchos*	northern mallard	Y			2
animals	birds	Anatidae	*Chenonetta jubata*	Australian wood duck		C		15
animals	birds	Anhingidae	*Anhinga novaehollandiae*	Australasian darter		C		9
animals	birds	Anseranatidae	*Anseranas semipalmata*	magpie goose		C		3
animals	birds	Apodidae	*Hirundapus caudacutus*	white-throated needletail		SL		4
animals	birds	Ardeidae	*Bubulcus ibis*	cattle egret		C		6
animals	birds	Ardeidae	*Ardea intermedia*	intermediate egret		C		4
animals	birds	Ardeidae	*Egretta garzetta*	little egret		C		8
animals	birds	Ardeidae	*Ardea alba modesta*	eastern great egret		C		3
animals	birds	Ardeidae	*Nycticorax caledonicus*	nankeen night-heron		C		2
animals	birds	Ardeidae	*Egretta novaehollandiae*	white-faced heron		C		6
animals	birds	Artamidae	*Cracticus nigrogularis*	pied butcherbird		C		19
animals	birds	Artamidae	*Artamus leucorynchus*	white-breasted woodswallow		C		10
animals	birds	Artamidae	*Cracticus torquatus*	grey butcherbird		C		13

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Artamidae	*Cracticus tibicen*	Australian magpie		C		13
animals	birds	Burhinidae	*Burhinus grallarius*	bush stone-curlew		C		4
animals	birds	Cacatuidae	*Cacatua galerita*	sulphur-crested cockatoo		C		7
animals	birds	Cacatuidae	*Eolophus roseicapilla*	galah		C		11
animals	birds	Cacatuidae	*Cacatua sanguinea*	little corella		C		4
animals	birds	Campephagidae	*Coracina novaehollandiae*	black-faced cuckoo-shrike		C		17
animals	birds	Campephagidae	*Lalage leucomela*	varied triller		C		9
animals	birds	Campephagidae	*Coracina tenuirostris*	cicadabird		C		4
animals	birds	Charadriidae	*Vanellus miles*	masked lapwing		C		1
animals	birds	Charadriidae	*Charadrius ruficapillus*	red-capped plover		C		1
animals	birds	Charadriidae	*Vanellus miles novaehollandiae*	masked lapwing (southern subspecies)		C		10
animals	birds	Cisticolidae	*Cisticola exilis*	golden-headed cisticola		C		8
animals	birds	Climacteridae	*Climacteris affinis*	white-browed treecreeper		C		3
animals	birds	Climacteridae	*Cormobates leucophaea metastasis*	white-throated treecreeper (southern)		C		10
animals	birds	Columbidae	*Ocyphaps lophotes*	crested pigeon		C		12
animals	birds	Columbidae	*Macropygia amboinensis*	brown cuckoo-dove		C		1
animals	birds	Columbidae	*Streptopelia chinensis*	spotted dove	Y			10
animals	birds	Columbidae	*Columba livia*	rock dove	Y			4
animals	birds	Columbidae	*Geopelia striata*	peaceful dove		C		13
animals	birds	Columbidae	*Phaps chalcoptera*	common bronzewing		C		1
animals	birds	Columbidae	*Geopelia humeralis*	bar-shouldered dove		C		8
animals	birds	Coraciidae	*Eurystomus orientalis*	dollarbird		C		8
animals	birds	Corvidae	*Corvus orru*	Torresian crow		C		15
animals	birds	Cuculidae	*Chalcites basalis*	Horsfield's bronze-cuckoo		C		3
animals	birds	Cuculidae	*Chalcites lucidus*	shining bronze-cuckoo		C		10
animals	birds	Cuculidae	*Eudynamys orientalis*	eastern koel		C		4
animals	birds	Cuculidae	*Cacomantis variolosus*	brush cuckoo		C		2
animals	birds	Cuculidae	*Centropus phasianinus*	pheasant coucal		C		5
animals	birds	Cuculidae	*Cacomantis flabelliformis*	fan-tailed cuckoo		C		10
animals	birds	Cuculidae	*Scythrops novaehollandiae*	channel-billed cuckoo		C		4
animals	birds	Cuculidae	*Chalcites minutillus barnardi*	little bronze-cuckoo		C		1
animals	birds	Dicruridae	*Dicrurus bracteatus*	spangled drongo		C		13
animals	birds	Estrildidae	*Neochmia temporalis*	red-browed finch		C		9
animals	birds	Estrildidae	*Lonchura castaneothorax*	chestnut-breasted mannikin		C		4
animals	birds	Estrildidae	*Taeniopygia bichenovii*	double-barred finch		C		12
animals	birds	Eurostopodidae	*Eurostopodus mystacalis*	white-throated nightjar		C		2
animals	birds	Fringillidae	*Carduelis carduelis*	European goldfinch	Y			1
animals	birds	Halcyonidae	*Todiramphus macleayii*	forest kingfisher		C		11
animals	birds	Halcyonidae	*Todiramphus sanctus*	sacred kingfisher		C		12
animals	birds	Halcyonidae	*Dacelo novaeguineae*	laughing kookaburra		C		19
animals	birds	Hirundinidae	*Petrochelidon nigricans*	tree martin		C		1
animals	birds	Hirundinidae	*Petrochelidon ariel*	fairy martin		C		3
animals	birds	Hirundinidae	*Hirundo neoxena*	welcome swallow		C		12
animals	birds	Jacanidae	*Irediparra gallinacea*	comb-crested jacana		C		3
animals	birds	Laridae	*Sternula albifrons*	little tern		SL		1
animals	birds	Laridae	*Gygis alba*	white tern		C		1/1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Maluridae	*Malurus melanocephalus*	red-backed fairy-wren		C		11
animals	birds	Maluridae	*Malurus lamberti*	variegated fairy-wren		C		12
animals	birds	Megaluridae	*Megalurus timoriensis*	tawny grassbird		C		4
animals	birds	Megapodiidae	*Alectura lathami*	Australian brush-turkey		C		4
animals	birds	Meliphagidae	*Philemon corniculatus*	noisy friarbird		C		14
animals	birds	Meliphagidae	*Plectorhyncha lanceolata*	striped honeyeater		C		3
animals	birds	Meliphagidae	*Melithreptus albogularis*	white-throated honeyeater		C		13
animals	birds	Meliphagidae	*Gavicalis fasciogularis*	mangrove honeyeater		C		1
animals	birds	Meliphagidae	*Anthochaera chrysoptera*	little wattlebird		C		5
animals	birds	Meliphagidae	*Myzomela sanguinolenta*	scarlet honeyeater		C		13
animals	birds	Meliphagidae	*Meliphaga lewinii*	Lewin's honeyeater		C		14
animals	birds	Meliphagidae	*Caligavis chrysops*	yellow-faced honeyeater		C		10
animals	birds	Meliphagidae	*Entomyzon cyanotis*	blue-faced honeyeater		C		7
animals	birds	Meliphagidae	*Lichmera indistincta*	brown honeyeater		C		14
animals	birds	Meliphagidae	*Manorina melanocephala*	noisy miner		C		14
animals	birds	Meropidae	*Merops ornatus*	rainbow bee-eater		C		11
animals	birds	Monarchidae	*Myiagra rubecula*	leaden flycatcher		C		11
animals	birds	Monarchidae	*Grallina cyanoleuca*	magpie-lark		C		15
animals	birds	Monarchidae	*Monarcha melanopsis*	black-faced monarch		SL		4
animals	birds	Monarchidae	*Symposiachrus trivirgatus*	spectacled monarch		SL		1
animals	birds	Motacillidae	*Anthus novaeseelandiae*	Australasian pipit		C		3
animals	birds	Nectariniidae	*Dicaeum hirundinaceum*	mistletoebird		C		11
animals	birds	Neosittidae	*Daphoenositta chrysoptera*	varied sittella		C		3
animals	birds	Oriolidae	*Sphecotheres vieilloti*	Australasian figbird		C		6
animals	birds	Oriolidae	*Oriolus sagittatus*	olive-backed oriole		C		8
animals	birds	Pachycephalidae	*Colluricincla harmonica*	grey shrike-thrush		C		17
animals	birds	Pachycephalidae	*Pachycephala pectoralis*	golden whistler		C		7
animals	birds	Pachycephalidae	*Pachycephala rufiventris*	rufous whistler		C		19
animals	birds	Pachycephalidae	*Colluricincla megarhyncha*	little shrike-thrush		C		4
animals	birds	Pardalotidae	*Pardalotus punctatus*	spotted pardalote		C		1
animals	birds	Pardalotidae	*Pardalotus striatus*	striated pardalote		C		16
animals	birds	Passeridae	*Passer domesticus*	house sparrow	Y			9
animals	birds	Pelecanidae	*Pelecanus conspicillatus*	Australian pelican		C		2
animals	birds	Petroicidae	*Petroica rosea*	rose robin		C		2
animals	birds	Petroicidae	*Eopsaltria australis*	eastern yellow robin		C		17
animals	birds	Phalacrocoracidae	*Phalacrocorax sulcirostris*	little black cormorant		C		5
animals	birds	Phalacrocoracidae	*Microcarbo melanoleucos*	little pied cormorant		C		5
animals	birds	Phalacrocoracidae	*Phalacrocorax carbo*	great cormorant		C		1
animals	birds	Phasianidae	*Coturnix ypsilophora*	brown quail		C		6
animals	birds	Podargidae	*Podargus strigoides*	tawny frogmouth		C		13
animals	birds	Podicipedidae	*Tachybaptus novaehollandiae*	Australasian grebe		C		7
animals	birds	Psittacidae	*Platycercus adscitus palliceps*	pale-headed rosella (southern form)		C		4
animals	birds	Psittacidae	*Trichoglossus haematodus moluccanus*	rainbow lorikeet		C		16
animals	birds	Psittacidae	*Platycercus adscitus*	pale-headed rosella		C		12
animals	birds	Psittacidae	*Parvipsitta pusilla*	little lorikeet		C		4
animals	birds	Psittacidae	*Trichoglossus chlorolepidotus*	scaly-breasted lorikeet		C		7

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Psophodidae	*Psophodes olivaceus*	eastern whipbird		C		11
animals	birds	Rallidae	*Fulica atra*	Eurasian coot		C		3
animals	birds	Rallidae	*Gallinula tenebrosa*	dusky moorhen		C		12
animals	birds	Rallidae	*Lewinia pectoralis*	Lewin's rail		C		1
animals	birds	Rallidae	*Porphyrio melanotus*	purple swamphen		C		13
animals	birds	Rhipiduridae	*Rhipidura leucophrys*	willie wagtail		C		10
animals	birds	Rhipiduridae	*Rhipidura rufifrons*	rufous fantail		SL		2
animals	birds	Rhipiduridae	*Rhipidura albiscapa*	grey fantail		C		15
animals	birds	Strigidae	*Ninox boobook*	southern boobook		C		3
animals	birds	Sturnidae	*Acridotheres tristis*	common myna	Y			6
animals	birds	Sturnidae	*Sturnus vulgaris*	common starling	Y			3
animals	birds	Threskiornithidae	*Platalea regia*	royal spoonbill		C		6
animals	birds	Threskiornithidae	*Plegadis falcinellus*	glossy ibis		SL		1
animals	birds	Threskiornithidae	*Threskiornis molucca*	Australian white ibis		C		8
animals	birds	Threskiornithidae	*Threskiornis spinicollis*	straw-necked ibis		C		5
animals	birds	Timaliidae	*Zosterops lateralis*	silvereye		C		16
animals	malacostracans	Parastacidae	*Cherax depressus*					1
animals	mammals	Canidae	*Vulpes vulpes*	red fox	Y			4
animals	mammals	Dasyuridae	*Antechinus flavipes flavipes*	yellow-footed antechinus (south-east Queensland)		C		3
animals	mammals	Dasyuridae	*Planigale maculata*	common planigale		C		2
animals	mammals	Dasyuridae	*Sminthopsis murina*	common dunnart		C		2
animals	mammals	Felidae	*Felis catus*	cat	Y			2
animals	mammals	Leporidae	*Lepus europaeus*	European brown hare	Y			4
animals	mammals	Macropodidae	*Macropus rufogriseus*	red-necked wallaby		C		4
animals	mammals	Macropodidae	*Wallabia bicolor*	swamp wallaby		C		5
animals	mammals	Molossidae	*Mormopterus norfolkensis*	east coast freetail bat		C		2
animals	mammals	Molossidae	*Tadarida australis*	white-striped freetail bat		C		4
animals	mammals	Muridae	*Hydromys chrysogaster*	water rat		C		4
animals	mammals	Muridae	*Mus musculus*	house mouse	Y			4
animals	mammals	Muridae	*Rattus rattus*	black rat	Y			3
animals	mammals	Muridae	*Rattus lutreolus*	swamp rat		C		2
animals	mammals	Peramelidae	*Isoodon macrourus*	northern brown bandicoot		C		7
animals	mammals	Petauridae	*Petaurus norfolcensis*	squirrel glider		C		4
animals	mammals	Phalangeridae	*Trichosurus vulpecula*	common brushtail possum		C		11
animals	mammals	Phascolarctidae	*Phascolarctos cinereus*	koala		V	V	982
animals	mammals	Pseudocheiridae	*Pseudocheirus peregrinus*	common ringtail possum		C		5
animals	mammals	Pteropodidae	*Pteropus alecto*	black flying-fox		C		24
animals	mammals	Pteropodidae	*Pteropus scapulatus*	little red flying-fox		C		1
animals	mammals	Pteropodidae	*Pteropus poliocephalus*	grey-headed flying-fox		C	V	18
animals	mammals	Suidae	*Sus scrofa*	pig	Y			3
animals	mammals	Tachyglossidae	*Tachyglossus aculeatus*	short-beaked echidna		SL		2
animals	mammals	Vespertilionidae	*Myotis macropus*	large-footed myotis		C		1
animals	ray-finned fishes	Anguillidae	*Anguilla australis*	southern shortfin eel				35
animals	ray-finned fishes	Anguillidae	*Anguilla reinhardtii*	longfin eel				49
animals	ray-finned fishes	Cichlidae	*Oreochromis mossambica*	Mozambique mouthbrooder	Y			3

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	ray-finned fishes	Eleotridae	*Hypseleotris galii*	firetail gudgeon				71
animals	ray-finned fishes	Eleotridae	*Gobiomorphus australis*	striped gudgeon				50
animals	ray-finned fishes	Eleotridae	*Hypseleotris compressa*	empire gudgeon				66
animals	ray-finned fishes	Hemiramphidae	*Arrhamphus sclerolepis*	snubnose garfish				1
animals	ray-finned fishes	Kuhliidae	*Kuhlia rupestris*	jungle perch				1
animals	ray-finned fishes	Megalopidae	*Megalops cyprinoides*	oxeye herring				1
animals	ray-finned fishes	Melanotaeniidae	*Melanotaenia duboulayi*	crimsonspotted rainbowfish				13
animals	ray-finned fishes	Melanotaeniidae	*Rhadinocentrus ornatus*	ornate rainbowfish				42
animals	ray-finned fishes	Mugilidae	*Mugil cephalus*	sea mullet				3
animals	ray-finned fishes	Percichthyidae	*Macquaria novemaculeata*	Australian bass				3
animals	ray-finned fishes	Plotosidae	*Tandanus tandanus*	freshwater catfish				12
animals	ray-finned fishes	Poeciliidae	*Gambusia holbrooki*	mosquitofish	Y			68
animals	ray-finned fishes	Poeciliidae	*Xiphophorus hellerii*	swordtail	Y			54
animals	ray-finned fishes	Synbranchidae	*Ophisternon gutturale*	swamp eel				2
animals	reptiles	Agamidae	*Intellagama lesueurii*	eastern water dragon		C		7
animals	reptiles	Agamidae	*Diporiphora australis*	tommy roundhead		C		1
animals	reptiles	Agamidae	*Pogona barbata*	bearded dragon		C		4
animals	reptiles	Boidae	*Morelia spilota*	carpet python		C		1
animals	reptiles	Chelidae	*Chelodina longicollis*	eastern snake-necked turtle		C		2
animals	reptiles	Chelidae	*Wollumbinia latisternum*	saw-shelled turtle		C		3
animals	reptiles	Chelidae	*Emydura macquarii macquarii*	Murray turtle		C		1
animals	reptiles	Colubridae	*Tropidonophis mairii*	freshwater snake		C		1
animals	reptiles	Colubridae	*Boiga irregularis*	brown tree snake		C		1
animals	reptiles	Elapidae	*Cryptophis nigrescens*	eastern small-eyed snake		C		3
animals	reptiles	Elapidae	*Demansia psammophis*	yellow-faced whipsnake		C		5
animals	reptiles	Gekkonidae	*Hemidactylus frenatus*	house gecko	Y			4
animals	reptiles	Scincidae	*Ctenotus spaldingi*	straight-browed ctenotus		C		3
animals	reptiles	Scincidae	*Eulamprus quoyii*	eastern water skink		C		4
animals	reptiles	Scincidae	*Carlia vivax*	tussock rainbow-skink		C		4
animals	reptiles	Scincidae	*Tiliqua scincoides*	eastern blue-tongued lizard		C		4
animals	reptiles	Scincidae	*Lampropholis amicula*	friendly sunskink		C		1
animals	reptiles	Scincidae	*Cryptoblepharus pulcher pulcher*	elegant snake-eyed skink		C		6
animals	reptiles	Scincidae	*Anomalopus verreauxii*	three-clawed worm-skink		C		4
animals	reptiles	Scincidae	*Lampropholis delicata*	dark-flecked garden sunskink		C		8
animals	reptiles	Scincidae	*Calyptotis scutirostrum*	scute-snouted calyptotis		C		7
animals	reptiles	Varanidae	*Varanus varius*	lace monitor		C		4
fungi		Basidiomycota	*Tylopilus*			C		1/1
plants	ferns	Nephrolepidaceae	*Nephrolepis cordifolia*	fishbone fern		C		1/1
plants	ferns	Schizaeaceae	*Schizaea bifida*	forked comb fern		C		1/1
plants	higher dicots	Asteraceae	*Gymnocoronis spilanthoides*		Y			2/2
plants	higher dicots	Campanulaceae	*Lobelia gibbosa*	native lobelia		C		1/1
plants	higher dicots	Celastraceae	*Elaeodendron melanocarpum*			C		1/1
plants	higher dicots	Chenopodiaceae	*Suaeda australis*			C		1/1
plants	higher dicots	Crassulaceae	*Bryophyllum fedtschenkoi*		Y			1/1
plants	higher dicots	Euphorbiaceae	*Croton acronychioides*	thick-leaved croton		C		1/1
plants	higher dicots	Malvaceae	*Malvaviscus arboreus*		Y			2/2

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	higher dicots	Myrtaceae	*Lophostemon confertus x L.suaveolens*			C		1/1
plants	higher dicots	Myrtaceae	*Rhodomyrtus psidioides*	native guava		C		1/1
plants	higher dicots	Oleaceae	*Chionanthus ramiflorus*	northern olive		C		1/1
plants	higher dicots	Plantaginaceae	*Bacopa lanigera*		Y			1/1
plants	higher dicots	Rhizophoraceae	*Ceriops australis*			C		1/1
plants	higher dicots	Rutaceae	*Acronychia laevis*	glossy acronychia		C		1/1
plants	higher dicots	Urticaceae	*Urtica urens*	small nettle	Y			1/1
plants	liverworts	Frullaniaceae	*Frullania*			C		1/1
plants	lower dicots	Apocynaceae	*Catharanthus roseus*	pink periwinkle	Y			1/1
plants	lower dicots	Monimiaceae	*Wilkiea macrophylla*	large-leaved wilkiea		C		1/1
plants	monocots	Asparagaceae	*Asparagus aethiopicus cv. Sprengeri*	basket asparagus fern	Y			1/1
plants	monocots	Cyperaceae	*Cyperus aquatilis*			C		1/1
plants	monocots	Cyperaceae	*Gahnia clarkei*	tall sawsedge		C		1/1
plants	monocots	Cyperaceae	*Isolepis cernua*	nodding club rush		C		1/1
plants	monocots	Hemerocallidaceae	*Dianella caerulea var. producta*			C		1/1
plants	monocots	Marantaceae	*Thalia geniculata*		Y			1/1
plants	monocots	Poaceae	*Entolasia stricta*	wiry panic		C		1/1
plants	mosses	Sematophyllaceae	*Sematophyllum subhumile*			C		1/1

CODES

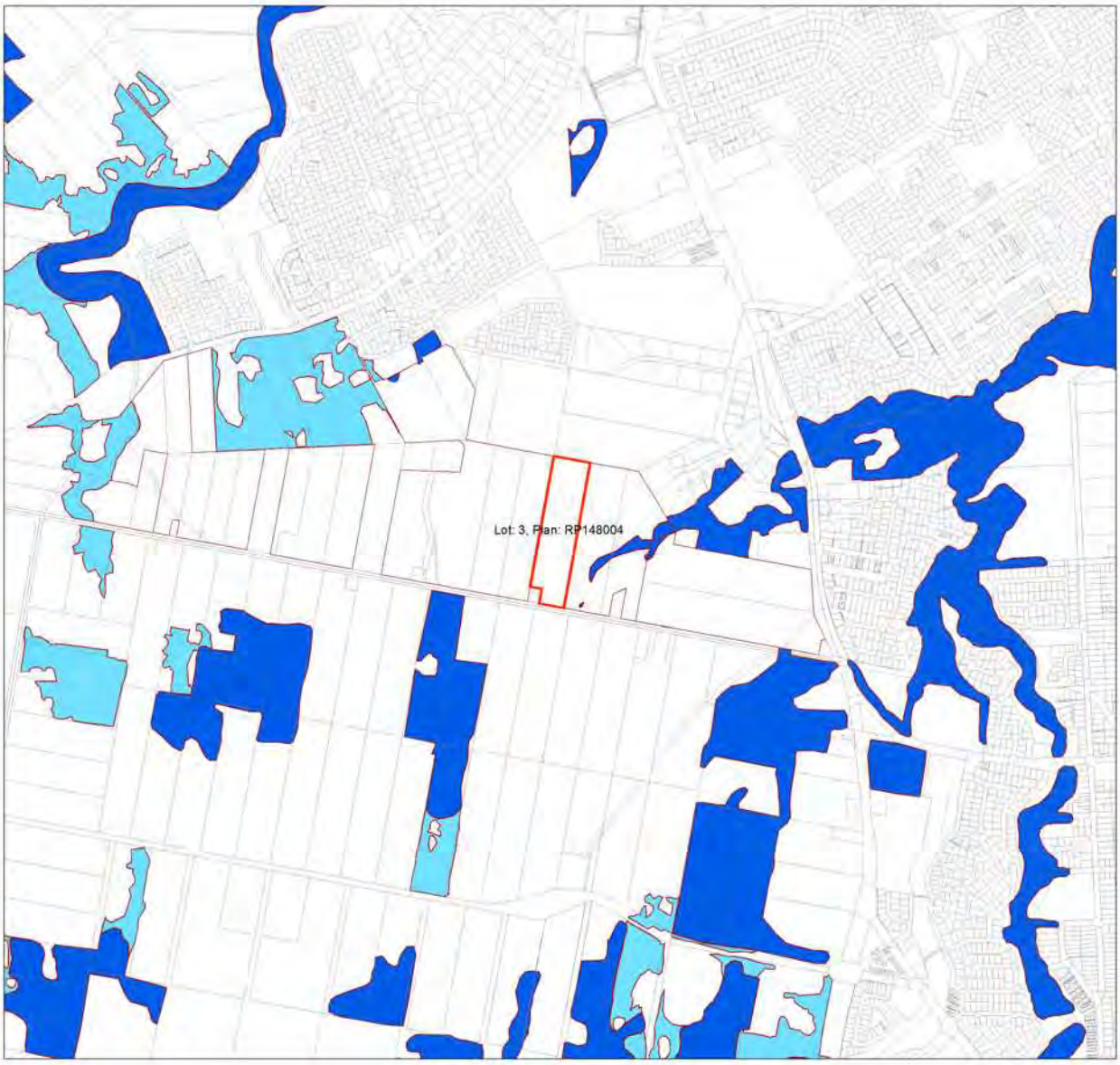
I - Y indicates that the taxon is introduced to Queensland and has naturalised.

Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992.* The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ( ).

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999.* The values of EPBC are Conservation Dependent (CD), Critically Endangered (CE), Endangered (E), Extinct (EX), Extinct in the Wild (XW) and Vulnerable (V).

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).
This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

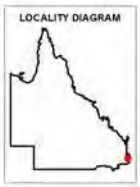
APPENDIX 2
Matters of State Environmental Significance



Regulated Vegetation Management Map

Legend

- Lot and Plan
- Category A area (Vegetation offsets/compliance notices/VDecs)
- Category B area (Remnant vegetation)
- Category C area (High-value regrowth vegetation)
- Category R area (Reef regrowth watercourse vegetation)
- Category X area (Exempt clearing work on Freehold. Indigenous and Leasehold land)
- Water
- Area not categorised
- Cadastral line
  Property boundaries shown are provided as a locational aid only



N

0 200 400 600 800 1,000 m

This product is projected into:
GDA 1994 MGA Zone 56

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Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.dnrme.qld.gov.au or contact the Department of Natural Resources, Mines and Energy.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.

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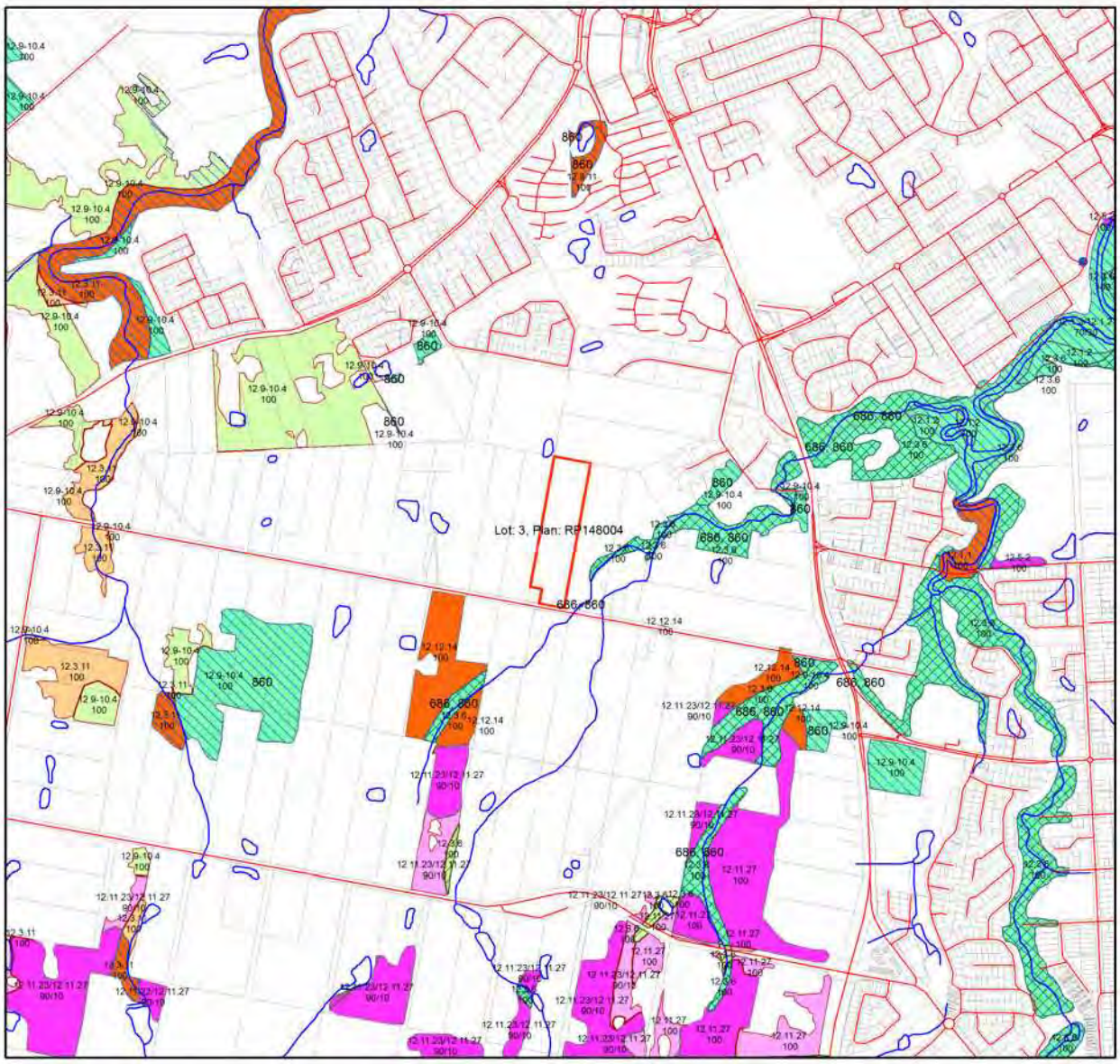

Vegetation Management Supporting Map

Legend

- Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category A or B area under Section 20AH
  These areas are edged in yellow and filled with the remnant RE Status
- Category C area containing endangered regional ecosystems
- Category C area containing of concern regional ecosystems
- Category C area that is a least concern regional ecosystem
- Category C area under Section 20AI
  These areas are edged in purple and filled with the remnant RE Status
- Non Remnant
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map
  (Stream order shown as black number against stream where available)
- Roads
- National Parks, State Forest and other reserves
- Cadastral line
  Property boundaries shown are provided as a locational aid only

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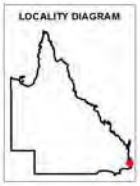
LOCALITY DIAGRAM



N

0 140 280 420 560 700 m

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GDA 1994 MGA Zone 56

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

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Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.dnrme.qld.gov.au or contact the Department of Natural Resources, Mines and Energy.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

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Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - State Code 16: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Planning Act 2016*; and
- Accepted development vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas.

The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records.

The Department of Natural Resources, Mines and Energy website (http://www.dnrme.qld.gov.au) has more information on how the layer is applied under the State Development Assessment Provisions - State Code 16: Native vegetation clearing and the *Vegetation Management Act 1999*.

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated.

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or

2) in which the protected wildlife, at any stage of its life cycle, is located.

Protected wildlife includes endangered, vulnerable or near-threatened native wildlife prescribed under the *Nature Conservation Act 1992*.

Essential habitat in Category A and/or Category B and/or Category C

No records

Koala Conservation in South East Queensland State Planning Regulatory Provisions

- Lot and Plan
- Priority Koala Assessable Development Areas
- Koala Assessable Development Areas
- Outside SPRP Koala Assessable Development Areas

Koala SPRP - Identified Broad-Hectare Areas

- Koala SPRP - Identified Broad-Hectare Areas

Koala SPRP - Habitat Values

Bushland Habitat

- High Value Bushland
- Medium Value Bushland
- Low Value Bushland

Suitable for Rehabilitation

- High Value Rehabilitation
- Medium Value Rehabilitation
- Low Value Rehabilitation

Other Areas of Value

- High Value Other
- Medium Value Other
- Low Value Other
- Generally not suitable
- Water
- Cadastral Boundaries
- Local Government Boundaries

N

0 130 260 390 520 650 m

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Based on or contains data provided by the State of Queensland 2010.

Note - These maps are not regulatory. Regulatory maps and requirements can be downloaded from the DES website. Further information in relation to regulatory requirements for development and planning activities should be sought from the relevant Local Government Authority or the Department of Environment and Science.

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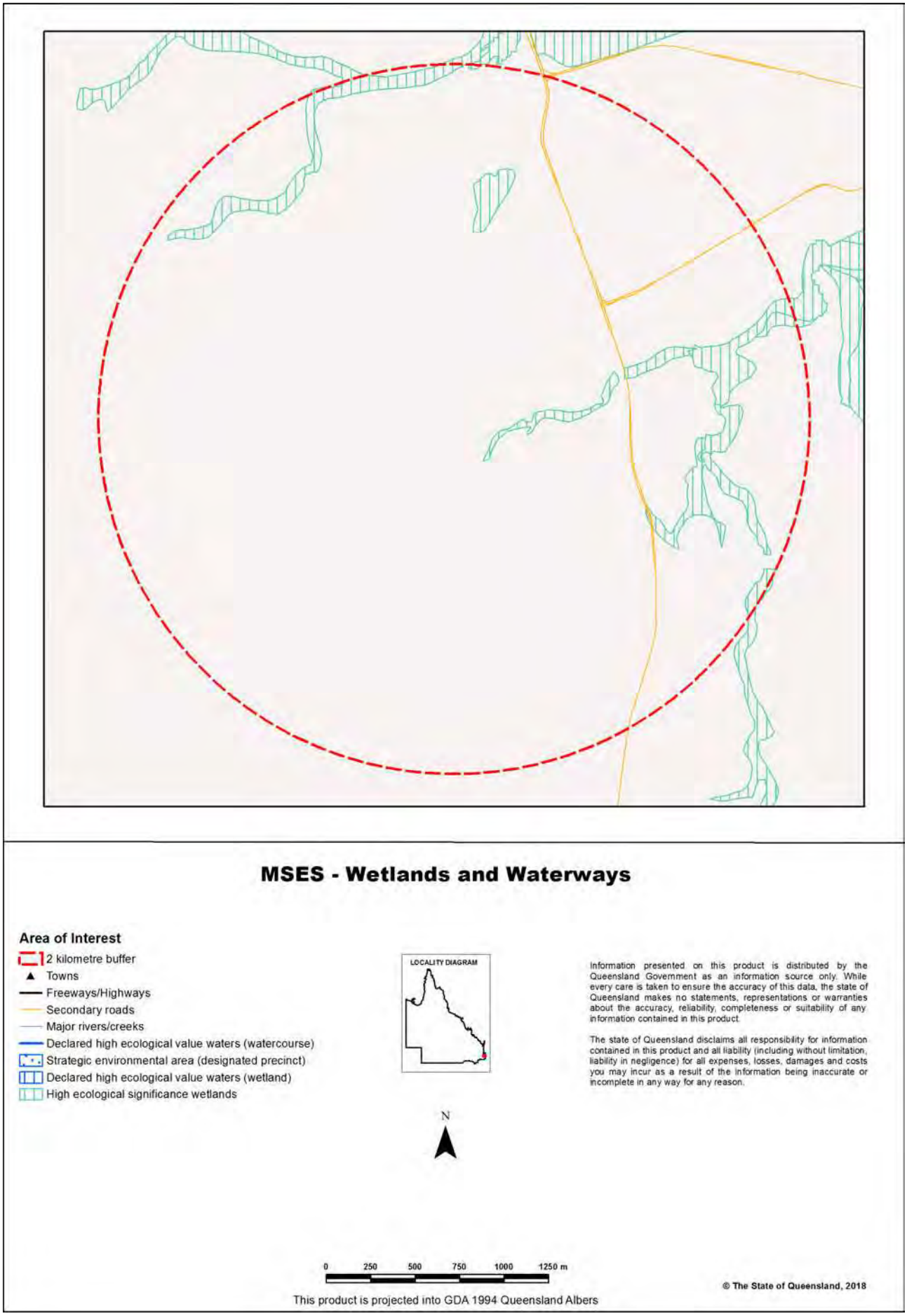
Map 2 - MSES - Wetlands and Waterways



21/09/2018 12:09:04
Longitude: 153.277683 Latitude: -27.602745

Protected Plants Flora Survey Trigger Map

Legend

- Coordinates
- High risk area
- Cadastral line
  Property boundaries shown are provided as a locational aid only
- Freeways / motorways / highways
- Secondary roads / streets

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@ehp.qld.gov.au

N

0 480 960 1,440 1,920 2,400 m

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GDA 1994 Queensland Albers

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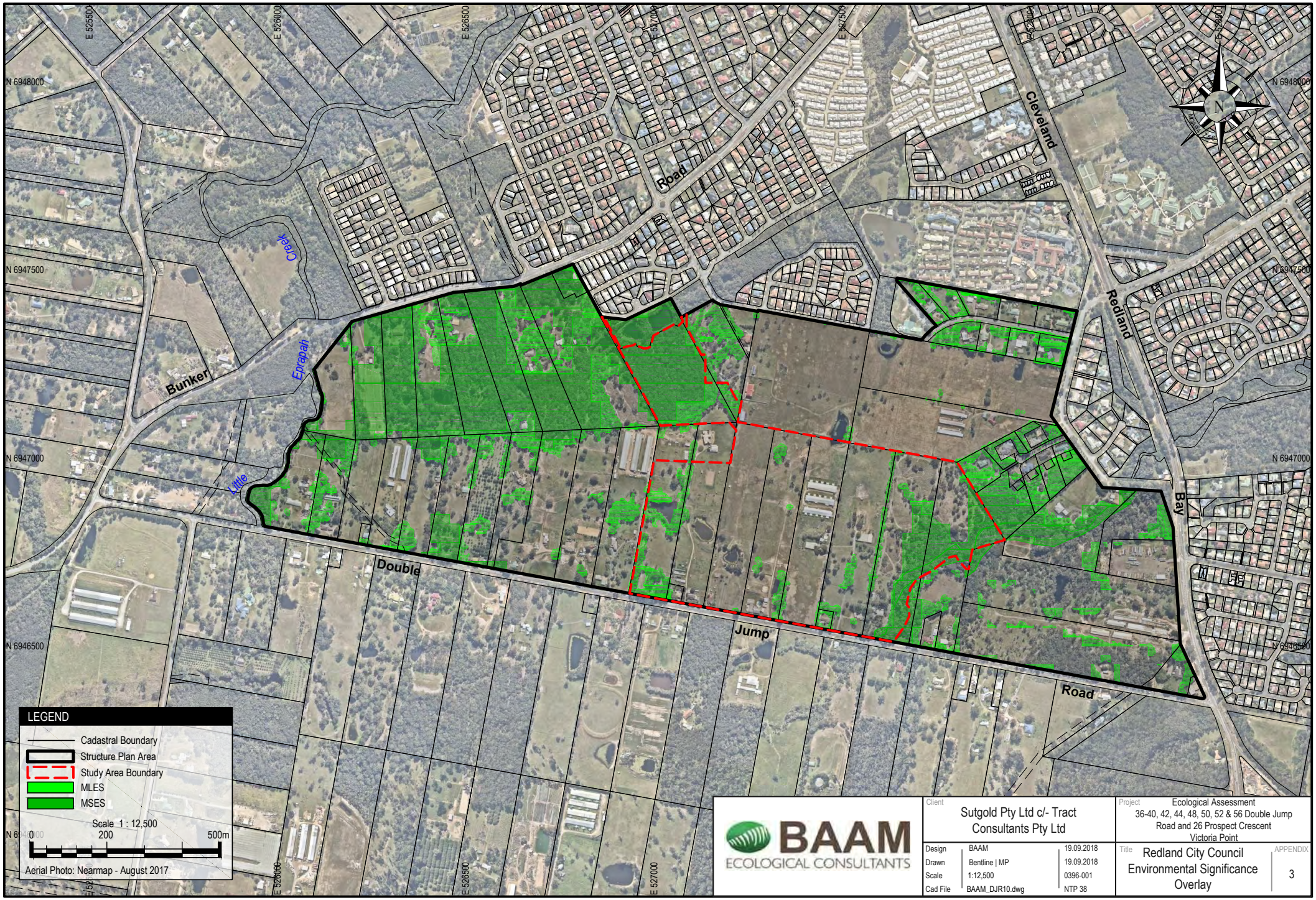
APPENDIX 3
RCC Environmental Significance and Waterway Corridors and Wetlands Overlays



BAAM ECOLOGICAL CONSULTANTS

Client	Sutgold Pty Ltd c/- Tract Consultants Pty Ltd	
Project	Ecological Assessment 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent Victoria Point	
Design	BAAM	19.09.2018
Drawn	Bentline | MP	19.09.2018
Scale	1:12,500	0396-001
Cad File	BAAM_DJR10.dwg	NTP 38
Title	Redland City Council Environmental Significance Overlay	APPENDIX 3

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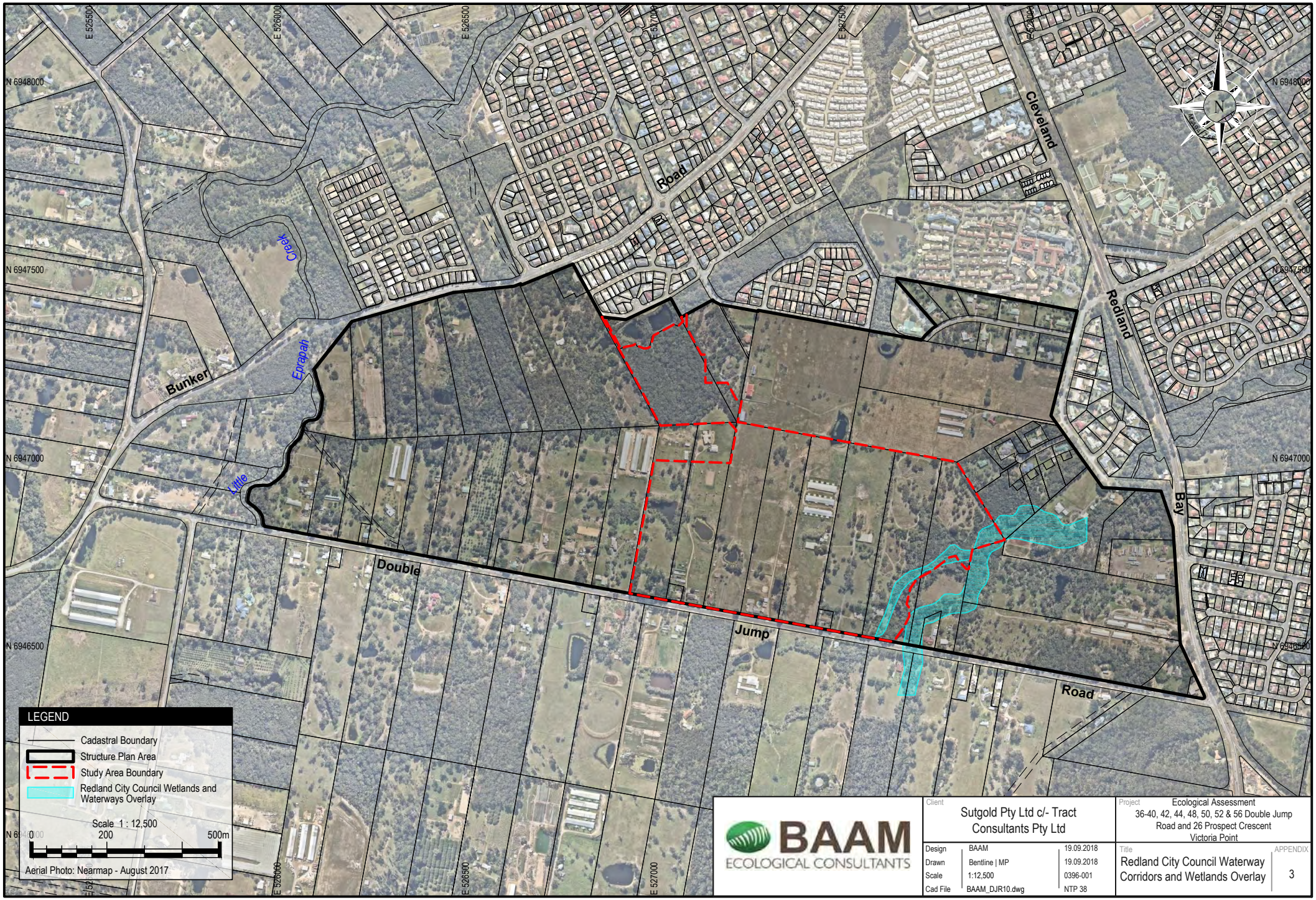

BAAM ECOLOGICAL CONSULTANTS

Client	Sutgold Pty Ltd c/- Tract Consultants Pty Ltd	
Project	Ecological Assessment 36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road and 26 Prospect Crescent Victoria Point	
Design	BAAM	19.09.2018
Drawn	Bentline | MP	19.09.2018
Scale	1:12,500	0396-001
Cad File	BAAM_DJR10.dwg	NTP 38
Title	Redland City Council Waterway Corridors and Wetlands Overlay	APPENDIX 3

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APPENDIX 4
Likelihood of Occurrence for Threatened Flora and Fauna Species

Conservation significant terrestrial flora and vertebrate fauna species recorded or predicted to occur within a 5 km radius of the subject site and their likelihood of occurrence (known, likely, potential, unlikely) within or immediately adjoining the subject site.

Abbreviations: EPBC = status under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth); **NCA** = status under the *Nature Conservation Act 1992* (Queensland); **PM** = EPBC Protected Matters Search Tool database search within a 10 km radius of the study area; **WN** = Queensland Department of Environment and Heritage Protection WildNet database search within a 25 km radius of the study area; E = Endangered; V = Vulnerable; NT = Near Threatened; M = Migratory; S = Special Least Concern (Migratory or culturally significant); LC = Least Concern; X = species occurrence predicted (PM).

Likelihood of occurrence categories: Known - from other surveys (BAAM, other consultancies, databases), species recorded onsite; **Likely to occur** – species not known to occur onsite but the site is within the known range of the species, potentially suitable habitat is present and there are either database records for the local region or knowledge of the species occurrence suggests it may occur as a resident or visitor; means 'high potential' or good habitat is present but no species were observed onsite; **Potential to occur** – the site is within the known range of the species and potentially suitable habitat is present but there are no database records for the local region and/or it is a rare, erratic or poorly known species; means 'low potential' or habitat for species is not definitive; **Unlikely to occur** – no suitable habitat present and/or the site is outside of the known range of the species.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Birds								
Anthochaera phrygia	Regent Honeyeater	E,M	E	X			Box-ironbark eucalypt forests and woodlands on the inland slopes of the Great Dividing Range, preferring the wettest, most fertile sites (Garnett *et al*. 2011).	**Unlikely**. The species is not known from the local region and only low value habitats for the species.
Botaurus poiciloptilus	Australasian Bittern	E	C	X			Shallow, vegetated freshwater or brackish swamps, favouring those dominated by sedges, rushes and/or reeds (Garnett *et al*. 2011).	**Unlikely**. Very little suitable habitat present. The wetland and pondage areas on the subject site have little to no habitat of relevance to this species.
Erythrotriorchis radiatus	Red Goshawk	V	E	X			Woodlands and forests, ideally with a mosaic of vegetation types and permanent water, particularly riverine forests. The species avoids both very dense and very open habitats (Marchant and Higgins, 1993).	**Unlikely**. No observation records for the region and the species was not observed during the field survey.
Dasyornis brachypterus	Eastern Bristlebird	E		X			Occurs in a variety of habitats but has only been recorded from three disjunct populations in Queensland/New South Wales (DoEE 2017a).	**Unlikely**. No suitable habitat and the species is not known from the local region.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Geophaps scripta scripta	Squatter Pigeon	V		X			Dry grassy eucalypt woodlands and open forests, also *Callitris* and *Acacia* woodlands. Most birds live in sandy sites near permanent water (Frith 1982; Blakers *et al*. 1984; Crome and Shields 1992).	**Unlikely.** Not known in local landscape.
Poephila cincta cincta	Southern Black-throated Finch	E		X			Dry open grassy woodlands and forests with seeding native grasses and free-standing water (Higgins *et al.* 2006b).	**Unlikely.** Not known in local landscape.
Turnix melanogaster	Black-breasted Button-quail	V	V	X			Semi-evergreen vine thicket and low microphyll vine forest; also dry rainforest (softwood scrubs) of Brigalow Belt, mature Hoop Pine plantations, and *Acacia* and *Austromyrtus* scrubs on sandy coastal soils (Garnett *et al*. 2011).	**Unlikely**. The site is dry open woodland or pasture and provides no suitable habitat present.
Lathamus discolor	Swift Parrot	E	E	X			Mainly dry open eucalypt forest and woodland, including those with Grey Box or River Red Gum (Higgins 1999).	**Unlikely.** A rare visitor to flowering eucalypts, but no local records. The extant habitats hold low potential for the species to occur. The proposed restoration will increase habitat values. .
Rostratula australis	Australian Painted Snipe	E	V	X			Terrestrial shallow wetlands, ephemeral and permanent, usually freshwater but occasionally brackish. They also use inundated grasslands, saltmarsh, dams, rice crops, sewage farms and bore drains (Marchant and Higgins 1993).	**Unlikey.** The existing farmdams do not support preferred habitats.
Calyptorhynchus lathami lathami	Glossy-Black Cockatoo		V		X		Lives in coastal woodlands and drier forest areas, open inland woodlands or timbered watercourses where its main food trees are common	**Potential.** Vegetated portions of the study area are dominated by *Allocasuarin littoralis*, a favoured food source. No birds or feeding evidences (orts) were observed during the surveys.
Frogs								
Adelotus brevis	Tusked Frog		V		X		Found within wet eucalypt forest, rainforest and occasionally dry eucalypt forest in close proximity to slow-moving creeks. Also recorded in disturbed areas.	**Potential.** Little Eprapah Creek holds some habitat values for this species. If present, it is likely to only occur within the study area during extended rainfall periods.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Mammals								
Phascolarctos cinereus (SEQ Bioregion)	Koala (SEQ Bioregion)	V	V	X	X		Eucalypt forest and woodland, feeding mostly on eucalypts.	**Known.** The current and prior site surveys have recorded the evidence (scats) of this species presence. The species is known to occur across the locality. There is some loss of habitat envisaged by the development footprint; however the proposed restoration and mitigation actions will increase habitat and safe movement options.
Dasyurus maculatus	Spotted-tail Quoll	E	V	X			This species shelter in rock caves, boulder piles and hollow logs or trees, with basking sites usually nearby (Menkhorst and Knight 2004).	**Unlikely.** No local records and no suitable habitat for this species.
Pteropus poliocephalus	Grey-headed Flying-fox	V	C	X	X		Open eucalypt forests, woodlands, melaleuca swamps and banksia woodlands, particularly on more fertile alluvial soils. The establishment of a camp is only likely within riparian vegetation (Churchill 2008).	**Likely** regular visitor to flowering eucalypts and Melaleuca sp. on the subject site. No flying-fox camp currently occurs on the subject lands. The proposed restoration will increase the overall feeding habitat for this species.
Xeromys myoides	Water Mouse, False Water Rat, Yirrkoo	V	V	X			The species occurs in mangroves, saltmarsh, sedged lakes near foredunes and coastal freshwater swamps. They require relatively large areas of intertidal flats over which to forage, together with suitable adjacent areas for nest sites	**Unlikely**. The species will not occur within the subject site, as there are no suitable habitats present.
Chalinolobus dwyeri	Large Pied Bat	V	V	X			Little known, but may depend heavily on sandstone outcrops. It has been found roosting in disused mine shafts, caves, overhangs and disused Fairy Martin *Petrochelidon ariel* nests (Hoye and Schulz 2008). It also possibly roosts in the hollows of trees (Duncan *et al.* 1999).	**Unlikely**. No suitable habitat present and not known from the local region.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Potorous tridactylus tridactylus (SE Mainland)	Long-nosed Potoroo	V					There is no consistent pattern to the habitat of the Long-nosed Potoroo (SE Mainland); it can be found in wet eucalypt forests (Seebeck 1995) to coastal heaths and scrubs (Mason 1997). The main factors would appear to be access to some form of dense vegetation for shelter (Bennett 1987).	**Unlikely.** Due to past and ongoing landuses, that have resuted in a highly disturbed environment, there is no suitable dense vegetation present for this species.
Petauroides volans	Greater Glider	V		X			Restricted to eucalypt forests and woodlands that support old trees with large hollows. They have relatively low persistence in small forest fragments, and disperse poorly across vegetation that is not native forest (DoEE 2017b).	**Unlikely.** Although the subject site supports numerous old hollow-bearing trees, this species is unlikely to move through the highly fragmented environment.
Reptiles								
Coeranoscincus reticulatus	Three-toed Snake-toothed Skink	V		X			Inhabits subtropical rainforest and nearby wet sclerophyll forests. Most records are from montane rainforest on dark soils, but it also occurs on Fraser Island and nearby Cooloola coast in rainforests on pale sands.	**Unlikely.** No suitable habitat present and not known from the local region.
Delma torquata	Collared Delma	V	V	X			Shelters in soil cracks, leaf litter and under loose surface rocks in open eucalypt forest with a shrub and tussock grass understorey.	**Unlikely.** No suitable habitat present and not known from the local region.
Migratory Terrestrial Species								
Cuculus optatus	Oriental Cuckoo	M					This species is a relatively sparse migrant to south-east Queensland in areas of suitable, open habitat.	**Potential.** May be an occasional visitor to the subject site.
Hirundapus caudacutus	White-throated Needletail	M		X			This is an aerial species, typically occurring over forested habitats, but also over coastal areas, including cities (Higgins 1999; Pizzey and Knight 2003). They forage aerially in small to huge flocks for insects and spiders, often associated with low pressure weather systems in combination with other aerial species.	**Likely.** Well known in local area. This species may occur over the site, primarily in summer preceding rainfall and storm events. This species has little to no relevance to the proposed actions.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Monarcha melanopsis	Black-faced Monarch	S,M		X			Mainly rainforests, also wet sclerophyll forest and open forest near rainforest (Higgins *et al.* 2006a).	**Potential.** Summer visitor to forested habitats on the subject site, particularly denser vegetated portions along Little Eprapah Creek.
Monarcha trivirgatus	Spectacled Monarch	M		X			Spectacled Monarchs are mostly found singly or in pairs in low dense vegetation, mainly in rainforests, but also in wet sclerophyll forests and other dense vegetation such as mangroves, drier sclerophyll forests, woodlands, parks and gardens.	**Potential.** Low potential to occur in the forested habitats on the subject site, particularly denser vegetated portions associated with Little Eprapah Creek.
Myiagra cyanoleuca	Satin Flycatcher	M		X			Satin Flycatchers are mostly found in eucalypt forest, favouring wet forests, moist gullies and watercourses. They are largely absent from regrowth forests and feed on arthropods (mainly insects) and, occasionally, seeds. Generally, the Satin Flycatcher forages singly or in pairs high in the canopy and sub-canopy.	**Potential.** Potential to occur in the forested habitats on the subject site, particularly denser vegetated portions associated with Little Eprapah Creek.
Rhipidura rufifrons	Rufous Fantail	S,M		X			Moist habitats, including closed forests, coastal scrubs, mangroves and along watercourses and gullies, and urban/rural areas during mid-year migration (Pizzey and Knight, 2003; Higgins *et al.* 2006a).	**Potential.** Potential summer visitor to forested associated with Little Eprapah Creek.
Migratory Wetlands Species								
Ardea alba	Great Egret	M		X			This species is found in most shallow, coastal and inland wetland habitats, both estuarine and freshwater, including man-made dams and ponds and moist grasslands (Marchant and Higgins 1990; Pizzey and Knight 2003).	**Likely.** There are suitable habitats for this common wide ranging species within and adjoining the subject site.
Ardea ibis	Cattle Egret	M		X			The Cattle Egret inhabits grasslands, wetlands and wooded lands, often foraging away from water in grassland, pasture and crops. The species is strongly associated with grazing animals in Australia, but also forages at garbage tips, follows machinery, and feeds independently.	**Known.** This species is common in the local landscape. The proposed actions will reduce potential habitat values. However this will not have any notable impact on the species or its long term presence in the area.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Plants								
Mardenia longiloba	Clear Milkvine	V	V		X		Clear Milkvine grows in open eucalypt forest, or margins of subtropical and warm temperate rainforest, and in areas of rocky outcrops.	**Unlikely**. This species was not detected and there is no suitable habitat, due to past and ongoing agricultural activities and weed invasions.
Marsdenia coronata	Slender Milkvine		V		X		Most commonly found in open eucalypt forest and woodland communities on hillslopes and ridge tops at altitudes of 40–780 m above sea level.	**Unlikely**. This species was not detected and there is no suitable habitat, due to past and ongoing agricultural activities and weed invasions.
Arthraxon hispidus	Hairy-joint Grass	V	V	X			The species occupy a diverse range of ecosystem types including edges of rainforest, wet eucalyptus forest, near creeks or swamps, woodland, freshwater springs, coastal dunes, gullies and sandy alluvium in open forests DoEE 2017c).	**Unlikely.** This species was not detected. Whilst some suitable habitat is on site, the ground stratum is highly disturbed and there are no historical records within and surrounding the study area.
Baloghia marmorata	Marbled Baloghia	V	V	X			Marbled Baloghia is found in subtropical rainforest/notophyll vine forest and wet sclerophyll forest (brush box woodland) with rainforest understorey between 150 and 550 m above sea level, with associated soil type being rich black or dark brown clay and loam derived from basalt (DoEE 2017d).	**Unlikely**. This species was not detected. The subject site contains low-lying coastal vegetation community with patches of loamy soil derived from basalt (typical of this region) and no suitable habitat for this species.
Corchorus cunninghamii	Native Jute	E	E	X			This species has been recorded in ecotonal habitats between wet sclerophyll and rainforest, occupying a variety of habitat types from the gully to ridge lines (DoEE 2017e).	**Unlikely**. This species was not detected. Whilst a population of this endangered species occurs in a rainforest edge habitat on Mt Cotton, the species is unlikely to compete with weed species that are currently dominating the ground layer in addition to inappropriate fire regime for the species.
Cryptocarya foetida	Stinking Cryptocarya	V	V	X			The species typically occurs in littoral rainforest, usually on sandy and basaltic soils (DoEE 2017f).	**Unlikely**. This species was not detected. Whilst some suitable habitat is on site, there are no historical records within and surrounding the area.

Species	Common name	EPBC	NCA	PM	WN	BAAM	Preferred habitat characteristics	Likelihood of occurrence
Cryptostylis hunteriana	Leafless Tongue-orchid	V		X			The species predominantly occurs along coastal heathlands, margins of coastal swamps and sedge lands, coastal forest, dry woodland, often associated with understorey of forested vegetation communities. The species is only known to occur from a single plant near the village of Tinnanbar and four additional coastal populations north of the Glass Mountains to Tin Can Bay on sandy or rocky heathland, Mt Mee in montane heathy woodland and Mt Coolum in rocky coastal heath (DoEE 2017g).	**Unlikely**. This species was not detected. The study area does not support sutiable habitats and is outside of the known range for this species.
Endiandra floydii	Floyd's Walnut	E		X			Warm temperate, subtropical rainforest or wet sclerophyll forest with Brush Box overstorey, and in and Camphor Laurel forest.	**Unlikely.** No suitable habitats present
Macadamia integrifolia and *Macadamia tetraphylla*	Macadamia Nut	V	NT	X	X	X	These species often occupy ecotonal habitat, particularly between rainforest and sclerophyll forests, preferring well-drained fertile soil (DoEE 2017h).	**Known**. Macadamia trees were detected within one property of the studay area. However, the individuals that were detected were clearly planted in rows. Given the context, these individual plants are not protected under *Nature Conservation Act 1992* and or the *EPBC Act 1999.*
Phaius australis	Lesser Swamp-orchid	E	E	X			The species is typically restricted to heath/ sedge land, wetlands, swampy grassland or swampy forest in association with Broad-leaved Paperbark or Swamp Mahogany and or Swamp Box, swampy rainforest or fringing open forest.	**Unlikely.** The study area soes not support preferred habitats for this species.
Samadera bidwillii	Quassia	V		X			Commonly occurs in lowland rainforest or rainforest margins generally associated with watercourses. It is only known from populations north of Gympie (DoEE 2017i)	**Unlikely:** The study area is outside of the known range for this species.
Thesium australe	Toadflax	V	V	X			Semi-parasitic on roots of a range of grass species notably Kangaroo Grass (Themeda triandra) occurs in shrubland, grassland or woodland, often on damp sites (DoEE 2017j).	**Unlikely**. This species was not detected and there is no suitable habitat, due to past and ongoing agricultural activities and weed invasions.

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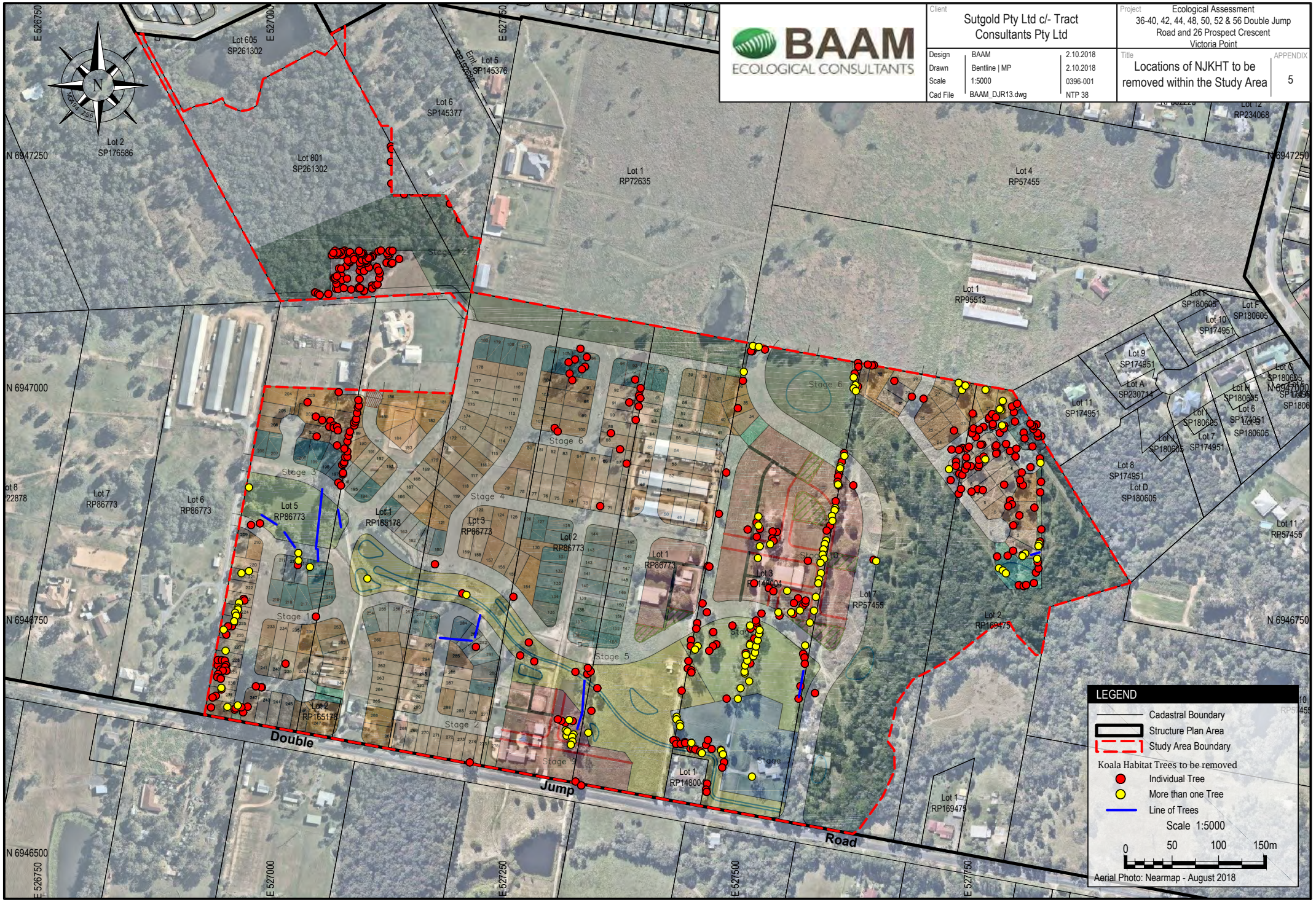
APPENDIX 5
Locations of NJKHT within the study Area



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APPENDIX 6
Fauna survey results and assessment of likelihood of occurrence of unrecorded species within the VPSPA

Victoria Point Structure Plan Area

Status under the *Nature Conservation Act 1992* (Queensland); V = Vulnerable; SL = Special Least Concern; LC = Least Concern; I = Introduced

Likelihood of occurrence categories: Known - from site surveys (BAAM, other consultancies, and public databases), species recorded onsite; **Expected** – species not known to occur onsite but the site is within the known range of the species, potentially suitable habitat is present and there are either database records for the local region or knowledge of the species occurrence suggests it may occur as a resident or visitor; means 'high potential' or good habitat is present but no species were observed onsite; **Potential**– the site is within the known range of the species and potentially suitable habitat is present but there are no database records for the local region and/or it is a rare, erratic or poorly known species; means 'low potential' or habitat for species is not definitive; **Unlikely**– no suitable habitat present and/or the site is outside of the known range of the species.

Scientific Name	Common Name	Status	Occurrence	Comments
Amphibians				
Limnodynastes tasmaniensis	spotted grassfrog	LC	Unlikely	Not recorded onsite. This species is uncommon in the Redlands and is unlikely to occur on the site.
Limnodynastes terraereginae	scarlet sided pobblebonk	LC	Known	Was recorded onsite across several lots. Primarily associated with vegetated areas and dams/ pondage habitats.
Platyplectrum ornatum	ornate burrowing frog	LC	Known	Species was not found breeding onsite. Several individuals were removed from pitfall traps within the western portions of the study area. Suitable habitats present and the species is known from surrounding landscape
Limnodynastes peronii	striped marshfrog	LC	Known	Common across the site primarily in association with waterways and wetland habitats
Adelotus brevis	tusked frog	V	Potential	Was not recorded despite targeted surveys in ideal conditions. Likely to be associated with the main creek lines and potentially farm dams where more permanent water is present
Pseudophryne raveni	copper backed broodfrog	LC	Potential	Known in local landscape and suitable habitat within the site. Was not recorded during targeted surveys.
Crinia parinsignifera	beeping froglet	LC	Known	A common local species which is known from the site and is expected to be present in several locations.
Mixophyes fasciolatus	great barred frog	LC	Potential	The study area has very limited habitats. The species may occur within the larger creek lines and waterways. The proposed land uses will not remove this species habitats.
Pseudophryne coriacea	red backed broodfrog	LC	Potential	Some local records and potential to occur within waterways and drainage lines. It should be noted these records are most likely *Pseudophryne raveni* which was once the same species.
Crinia signifera	clicking froglet	LC	Known	A common local species which has been recorded onsite in the central and eastern portions of the lands. It is expected to be present in several locations around the site.
Uperoleia fusca	dusky gungan	LC	Unlikely	Low likelihood of the species being present in the local landscape
Crinia tinnula	wallum froglet	V	Unlikely	No suitable habitat within or around the study area. This species does not occur within the study area.
Pseudophryne major	great brown broodfrog	LC	Unlikely	Low likelihood of this species in the local landscape. If present it will be associated with the riparian waterways and associated gully lines.

Scientific Name	Common Name	Status	Occurrence	Comments
Litoria nasuta	striped rocketfrog	LC	Potential	May occur within the waterways and drainage lines on and adjoining the site. Not recorded despite targeted frog surveys.
Litoria dentata	bleating treefrog	LC	Expected	Suitable habitat is present, pondage areas and waterways most likely areas of value.
Litoria rubella	ruddy treefrog	LC	Known	Occurs across the site and was recorded from dams, drainage lines and calling from structures.
Litoria caerulea	common green treefrog	LC	Known	Known. Expected to occur across the site and local landscape particularly in association with dwellings and wetland habitats.
Litoria gracilenta	graceful treefrog	LC	Known	Common across the site and particularly those areas where vegetated portions and suitable breeding locations coincide.
Litoria latopalmata	broad palmed rocketfrog	LC	Known	Recorded calling in flooded habitats and pondage areas within Little Eprapah Creek corridor and within the structure plan area. . Expected to occur across the study site in suitable habitats.
Litoria fallax	eastern sedgefrog	LC	Known	Common across the site and found calling from dams and adjacent waterways and drainage lines.
Litoria peronii	emerald spotted treefrog	LC	Potential	This species was recorded calling nearby in Springacre Road. Not found onsite despite ideal survey conditions. Could occur within the wetter portions of the site particularly where melaleuca habitats coincide with the major waterways.
Rhinella marina	cane toad	I	Known	Occurs across and throughout the site.
Reptiles				
Diporiphora australis	tommy roundhead	LC	Potential	Low potential to occur. If present it would be restricted to the more wooded areas.
Intellagama lesueurii	eastern water dragon	LC	Known	Recorded. Species is present within the water storages and waterways.
Morelia spilota	carpet python	LC	Expected	May occur within any habitats particularly the wooded areas.
Dendrelaphis punctulatus	green tree snake	LC	Known	Recorded in the core habitats in the western portions of the lands. This species is expected to occur across the site.
Tropidonophis mairii	freshwater snake	LC	Expected	In association with adjoining creeks
Boiga irregularis	brown tree snake	LC	Potential	In wooded areas across the site
Nebulifera robusta	robust velvet gecko	LC	Potential	In wooded areas across the site
Vermicella annulata	bandy-bandy	LC	Potential	In wooded areas across the site
Pseudechis porphyriacus	red-bellied black snake	LC	Potential	In association with adjacent riparian habitats
Cryptophis nigrescens	eastern small-eyed snake	LC	Potential	In wooded areas across the site
Cacophis krefftii	dwarf crowned snake	LC	Unlikely	In wooded areas across the site
Hemiaspis signata	black-bellied swamp snake	LC	Potential	In association with adjacent riparian habitats
Cacophis harriettae	white-crowned snake	LC	Expected	In wooded areas across the site
Demansia psammophis	yellow-faced whipsnake	LC	Known	Known. This species is present onsite and is expected to move across the entire study area.
Heteronotia binoei	Bynoe's gecko	LC	Known	Known. This species is primarily associated with the woodland habitats.
Hemidactylus frenatus	house gecko	I	Known	Recorded. This introduced species is known to occur on several lots across the study area in association with the dwellings.

Scientific Name	Common Name	Status	Occurrence	Comments
Lialis burtonis	Burton's legless lizard	LC	Potential	In wooded areas across the site
Ctenotus taeniolatus	copper-tailed skink	LC	Known	Known. A wide ranging species typically associated with the more vegetated portions of the site.
Lampropholis delicata	dark-flecked garden sunskink	LC	Known	This species is common across the site
Calyptotis scutirostrum	scute-snouted calyptotis	LC	Known	Recorded within the bushland portions of the study area.
Cyclodomorphus gerrardii	pink-tongued lizard	LC	Potential	In wooded areas across the site
Cryptoblepharus pulcher pulcher	elegant snake-eyed skink	LC	Known	In wooded areas and where large timber is present across the site.
Lygisaurus foliorum	tree-base litter-skink	LC	Known	Recorded. Associated with the more vegetated areas where suitable leaf litter is retained.
Tiliqua scincoides	eastern blue-tongue lizard	LC	Known	This species can occur across the local landscape.
Pogona barbata	bearded dragon	LC	Known	This species can occur across the local landscape.
Carlia vivax	tussock rainbow-skink	LC	Known	This species may occur across the local landscape where stands of vegetation are retained.
Concinnia martini	dark bar-sided skink	LC	Potential	In wooded areas across the site.
Eulamprus quoyii	eastern water skink	LC	Potential	In waterways and wetter vegetated areas. Site.
Concinnia tenuis	bar-sided skink	LC	Potential	In wooded areas across the site.
Varanus varius	lace monitor	LC	Expected	Known to occur within the structure plan area primarily in association with the vegetated areas. Expected to occasion the wooded areas and larger trees across the site
Birds				
Acanthiza reguloides	buff-rumped thornbill	LC	Potential	Could occur within the more forested portions of the site and adjoining waterways.
Gerygone olivacea	white-throated gerygone	LC	Known	Associated with the bushland habitats and recorded within Little Eprapah Creek corridor and the nearby vegetated habitats
Sericornis frontalis	white-browed scrubwren	LC	Known	Present within the denser vegetated portions of Little Eprapah Creek and Moogurrapum Creek. Expected to have more coverage upon establishment of proposed corridors.
Acanthiza pusilla	brown thornbill	LC	Expected	Expected to occasionally frequent the more vegetated portions of the site.
Acanthiza chrysorrhoa	yellow-rumped thornbill	LC	Potential	Associated with the bushland habitats
Smicrornis brevirostris	weebill	LC	Potential	Could occur where suitable forested vegetation and midstorey habitats are retained
Acanthiza lineata	striated thornbill	LC	Potential	Could occur where suitable woodland habitats are retained
Accipiter novaehollandiae	grey goshawk	LC	Potential	Could occasion the site in search of prey, unlikely to be a regular resident.
Accipiter cirrocephalus	collared sparrowhawk	LC	Potential	Could occasion the site in search of prey, unlikely to be a regular resident.
Haliaeetus leucogaster	white-bellied sea-eagle	LC	Unlikely	May occur over the site but is unlikely to use the extant habitats for foraging or nesting purposes.
Haliastur sphenurus	whistling kite	LC	Known	Occurs over and around the site. A wide ranging species.
Aviceda subcristata	Pacific baza	LC	Known	Recorded within the bushland habitats and vegetated portions of the study area. Primarily associated with the woodland habitats.

Scientific Name	Common Name	Status	Occurrence	Comments
Accipiter fasciatus	brown goshawk	LC	Expected	Could occur where suitable woodland habitats are retained. Species was observed nearby within the bushland habitats at rear of Brookland Drive
Lophoictinia isura	square-tailed kite	LC	Unlikely	May visit the larger bushland habitats in the local landscape and along waterways. Unlikely within the stage 1 habitats.
Circus approximans	swamp harrier	LC	Known	Recorded in the central portions of the structure plan area. This species may venture across the pastoral areas and drainage lines.
Pandion cristatus	eastern osprey	SL	Unlikely	No suitable habitats onsite
Elanus axillaris	black-shouldered kite	LC	Known	Recorded utilising the open pastoral areas. The open portions of the local landscape are suitable for hunting. This species could nest within vegetated areas.
Circus assimilis	spotted harrier	LC	Unlikely	Little to no suitable habitat
Haliastur indus	brahminy kite	LC	Potential	Expected to occur flying over the site – though only low potential to utilise the extant habitats
Aquila audax	wedge-tailed eagle	LC	Potential	Expected to occur flying over the site – though only low potential to utilise the extant habitats other than as occasional hunting options are identified.
Acrocephalus australis	Australian reed-warbler	LC	Potential	Low potential to occur. Primarily if land is left unmanaged to allow suitable cover to establish. Little to no suitable habitat onsite
Aegotheles cristatus	Australian owlet-nightjar	LC	Potential	There are suitable hollow bearing trees and wooded portions onsite. Was not recorded during spotlighting surveys.
Ceyx azureus	azure kingfisher	LC	Potential	Only within the main waterway habitats.
Dendrocygna arcuata	wandering whistling-duck	LC	Known	Observed feeding in pastoral areas nearby existing dams. Expected to occasion the larger dams and associated habitats.
Anas castanea	chestnut teal	LC	Potential	May occur within the Dams and associated habitats
Anas gracilis	grey teal	LC	Potential	May occur within the Dams and associated habitats
Aythya australis	hardhead	LC	Likely	May occur within the Dams and associated habitats
Anas superciliosa	Pacific black duck	LC	Known	A regularly recorded species within the suitable dams and associated habitats
Chenonetta jubata	Australian wood duck	LC	Known	Common across the open areas and local landscape. The site provides suitable habitats for feeding and potential to breed within the hollow bearing trees. Species is common across the local landscape.
Anhinga novaehollandiae	Australasian darter	LC	Potential	This species is known from the wider structure plan area but not recorded within stage 1. May associate with the waterways and dams for foraging purposes.
Anseranas semipalmata	magpie goose	LC	Potential	Waterways, open grasslands and dams for foraging purposes. Unlikely to breed onsite. Has been observed flying over the wider structure plan area.
Hirundapus caudacutus	white-throated needletail	SL	Expected	This aerial species will occur over the site.
Apus pacificus	fork-tailed swift	SL	Potential	This primarily aerial species may occur over the site.
Egretta novaehollandiae	white-faced heron	LC	Known	Known. This species is regularly present onsite and visitation is for foraging purposes. Unlikely to breed onsite.
Bubulcus ibis	cattle egret	LC	Known	Occurs in association with domestic stock within the open pastoral areas across the site if/where domestic stock are present. .
Ardea intermedia	intermediate egret	LC	Potential	Potential to occur within waterways, wetland

Scientific Name	Common Name	Status	Occurrence	Comments
				habitats and dams.
Egretta garzetta	little egret	LC	Known	Occurs within waterways, and dams.
Botaurus poiciloptilus	Australasian bittern	LC	Unlikely	Little to no suitable habitats present within the VPSP area.
Nycticorax caledonicus	nankeen night-heron	LC	Potential	Potential to occur within waterways, and dams. Not roosting onsite.
Cracticus tibicen	Australian magpie	LC	Known	Common across the site and local landscape.
Cracticus torquatus	grey butcherbird	LC	Known	Common across the site where the more vegetated portions are present.
Cracticus nigrogularis	pied butcherbird	LC	Known	Common across the site
Strepera graculina	pied currawong	LC	Potential	May occur within the study area though not recorded onsite.
Burhinus grallarius	bush stone-curlew	LC	Potential	Suitable habitats are present and the species is known form the local landscape.
Cacatua galerita	sulphur-crested cockatoo	LC	Known	Recorded. Known across the study area and observed regularly feeding on pastoral weeds. Expected to occasion habitats across the site and may breed onsite.
Calyptorhynchus banksii	red-tailed black-cockatoo	LC	Unlikely	Not known in local area.
Cacatua tenuirostris	long-billed corella	LC	Expected	Suitable habitats are present and the species occurs in the local landscape.
Eolophus roseicapilla	galah	LC	Known	Recorded breeding onsite within Lot 22. Species has been observed across stage 1.
Cacatua sanguinea	little corella	LC	Expected	Suitable habitats are present
Calyptorhynchus funereus	glossy black-cockatoo	LC	Potential	Potential to occur as suitable feeding resources are present. No evidence of their feeding has been recorded onsite despite targeted searches.
Lalage leucomela	varied triller	LC	Potential	Not recorded within Stage 1 but known from wider structure plan area. This species is associated with the more vegetated portions of the local landscape.
Coracina lineata	barred cuckoo-shrike	LC	Unlikely	Not known in local landscape.
Lalage tricolor	white-winged triller	LC	Unlikely	Not known in local landscape.
Coracina novaehollandiae	black-faced cuckoo-shrike	LC	Known	Common across the local landscape.
Coracina tenuirostris	cicadabird	LC	Known	Known. This species is restricted to the more vegetated portions and primary corridors. A seasonal visitor during summer months.
Vanellus miles	masked lapwing	LC	Known	Common in the open grassland portions.
Ephippiorhynchus asiaticus	black-necked stork	LC	Unlikely	Wetland and dams have low value for this species.
Cisticola exilis	golden-headed cisticola	LC	Expected	Where grassland habitats are not mown or reduced by presence of stock.
Climacteris affinis	white-browed treecreeper	LC	Potential	Known from the tributary of Moogurrapum Creek in the eastern portions of the Structure Plan area. This species will be restricted to the larger vegetated areas.
Phaps chalcoptera	common bronzewing	LC	Potential	May occur onsite within a variety of woodland habitats.
Chalcophaps indica	emerald dove	LC	Potential	Potential as a migrant during movement through the landscape. Little to no direct habitat values onsite.
Geopelia humeralis	bar-shouldered dove	LC	Known	Associated with the wooded portions of the site.
Macropygia amboinensis	brown cuckoo-dove	LC	Potential	Most likely along the larger waterways and wooded portions.
Streptopelia	spotted dove	I	Known	Across the site.

Scientific Name	Common Name	Status	Occurrence	Comments
chinensis				
Columba livia	rock dove	I	Known	Occurs in the more open areas.
Geopelia striata	peaceful dove	LC	Potential	Known from the more vegetated areas and adjoining open habitats in the eastern portions of the Structure Plan area.
Ocyphaps lophotes	crested pigeon	LC	Known	Across the site
Eurystomus orientalis	dollarbird	LC	Known	Recorded utilising the central portions of the study are and within the adjoining Little Eprapah Creek corridor. Expected to occur across the site, and potential breeding in the larger hollow bearing trees.
Corvus orru	Torresian crow	LC	Known	Common across the site
Cacomantis flabelliformis	fan-tailed cuckoo	LC	Known	Within the wooded portions of the study area and adjoining creek corridors.
Centropus phasianinus	pheasant coucal	LC	Known	Common across the local landscape. More likely within the vegetated portions and waterways.
Cacomantis variolosus	brush cuckoo	LC	Potential	Potential to occur within the more vegetated portions and Little Eprapah Creek.
Eudynamys orientalis	eastern koel	LC	Expected	Summer visitor within the more vegetated portions and waterways.
Chalcites minutillus barnardi	little bronze-cuckoo	LC	Potential	Most likely along the larger waterways and wooded portions.
Chalcites lucidus	shining bronze-cuckoo	LC	Potential	Most likely along the larger waterways and wooded portions.
Chalcites basalis	Horsfield's bronze-cuckoo	LC	Potential	Most likely along the larger waterways and wooded portions.
Scythrops novaehollandiae	channel-billed cuckoo	LC	Known	A summer vagrant, that is a wide ranging species that can utilise the entire study area.
Cacomantis pallidus	pallid cuckoo	LC	Potential	A summer vagrant, which may irregularly occur on or nearby the site.
Dicrurus bracteatus	spangled drongo	LC	Known	Present within and across all vegetated areas.
Neochmia temporalis	red-browed finch	LC	Known	Associated with the waterways and wetter portions of the study area. The creek corridors are the core habitats.
Neochmia modesta	plum-headed finch	LC	Unlikely	Not known in local landscape
Taeniopygia bichenovii	double-barred finch	LC	Known	This species can occur across the local landscape particularly where grassland and ground vegetation is dense and grasses hold seeds.
Eurostopodus mystacalis	white-throated nightjar	LC	Potential	Not known from the site. May occur within the wooded area and associated habitats
Falco peregrinus	peregrine falcon	LC	Potential	May occasion the site in search of prey.
Falco berigora	brown falcon	LC	Expected	May occasion the site in search of prey.
Falco longipennis	Australian hobby	LC	Known	Suitable habitats across the site
Falco cenchroides	nankeen kestrel	LC	Potential	Suitable habitats across the site
Todiramphus sanctus	sacred kingfisher	LC	Known	Woodland and waterways
Dacelo novaeguineae	laughing kookaburra	LC	Known	Occurs across the site and local landscape.
Todiramphus macleayii	forest kingfisher	LC	Potential	Within the larger vegetated portions
Petrochelidon nigricans	tree martin	LC	Potential	Across the site
Cheramoeca leucosterna	white-backed swallow	LC	Potential	Low potential to be present in the local landscape. Would utilise the open habitats and drainage lines across the site.

Scientific Name	Common Name	Status	Occurrence	Comments
Hirundo neoxena	welcome swallow	LC	Known	Common across the site particularly the open pastoral areas.
Petrochelidon ariel	fairy martin	LC	Known	Relatively common within the site and surrounds.
Irediparra gallinacea	comb-crested jacana	LC	Potential	The dams are primarily too small and lack sufficient waterlilies for this species to occur
Malurus cyaneus	superb fairy-wren	LC	Expected	Likely within the waterways and vegetated portions
Malurus lamberti	variegated fairy-wren	LC	Known	Known. This species is has been observed in several locations within and immediately adjoining the study area.
Malurus melanocephalus	red-backed fairy-wren	LC	Known	Relatively common within the vegetated areas where denser mid-storey is present.
Megalurus timoriensis	tawny grassbird	LC	Potential	Low potential due to existing land use and stoic limiting the height and cover of grassland habitats
Alectura lathami	Australian brush-turkey	LC	Known	Known. This common species is expected to use a variety of habitats onsite.
Lichmera indistincta	brown honeyeater	LC	Known	Present across the site where suitable vegetation exists.
Melithreptus lunatus	white-naped honeyeater	LC	Potential	Some local records and limited suitable habitats present.
Philemon corniculatus	noisy friarbird	LC	Known	Regular visitor in the local area. Known from across the VPSP area.
Manorina melanocephala	noisy miner	LC	Known	Present across the VPSP area.
Myzomela sanguinolenta	scarlet honeyeater	LC	Known	Winter visitor to the more intact woodland areas and melaleuca portions.
Philemon citreogularis	little friarbird	LC	Expected	The wooded portions have potential for this species to occur
Anthochaera chrysoptera	little wattlebird	LC	Potential	Some local records and suitable habitats present
Entomyzon cyanotis	blue-faced honeyeater	LC	Known	Common across the site and local landscape
Caligavis chrysops	yellow-faced honeyeater	LC	Known	Known. A seasonal/intermittent visitor Expected to be commonly present onsite and across the local landscape.
Meliphaga lewinii	Lewin's honeyeater	LC	Known	Known. Associated with the more vegetated portions and particularly the Creek Corridors.
Acanthorhynchus tenuirostris	eastern spinebill	LC	Expected	Seasonal visitor in response to localised flowering events.
Plectorhyncha lanceolata	striped honeyeater	LC	Known	Irregular visitor onsite and surrounds. Heard calling along Little Eprapah Creek.
Merops ornatus	rainbow bee-eater	LC	Known	Regularly present in the local landscape.
Grallina cyanoleuca	magpie-lark	LC	Known	Common across the site
Monarcha melanopsis	black-faced monarch	SL	Expected	Primarily within the riparian areas along Little Eprapah Creek and associated denser vegetation.
Myiagra inquieta	restless flycatcher	LC	Potential	Vegetated portions particularly Little Eprapah Creek.
Symposiachrus trivirgatus	spectacled monarch	SL	Unlikely	The site and surrounds lack the denser wetter rainforest elements preferred by this species.
Myiagra rubecula	leaden flycatcher	LC	Expected	Known in local area and suitable habitats present.
Anthus novaeseelandiae	Australasian pipit	LC	Known	Known. Suitable open habitats, pastoral areas, present within and across the local landscape.
Dicaeum hirundinaceum	mistletoebird	LC	Known	Regularly recorded in local landscape. Wooded portions of higher value.
Daphoenositta chrysoptera	varied sittella	LC	Potential	Would only utilise the larger wooded portions of the study area.
Oriolus sagittatus	olive-backed oriole	LC	Expected	Common in local area and suitable habitats exists

Scientific Name	Common Name	Status	Occurrence	Comments
Sphecotheres vieilloti	Australasian figbird	LC	Known	Across the site within the vegetated portions.
Pachycephala pectoralis	golden whistler	LC	Known	This species is known from the Moogurrapum riparian habitats.
Colluricincla megarhyncha	little shrike-thrush	LC	Potential	Woodland habitats and riparian areas.
Pachycephala rufiventris	rufous whistler	LC	Known	A locally common species within woodland and riparian habitats.
Colluricincla harmonica	grey shrike-thrush	LC	Known	Expected within the higher value woodland habitats and riparian areas.
Pardalotus punctatus	spotted pardalote	LC	Expected	Primarily within the denser vegetation and adjoining riparian habitats.
Pardalotus striatus	striated pardalote	LC	Known	Recorded calling in several locations where suitable wooded habitats are retained. .
Passer domesticus	house sparrow	I	known	Present within the VPSP area.
Microeca fascinans	jacky winter	LC	Potential	Very few local records and species not known in the area.
Eopsaltria australis	eastern yellow robin	LC	Known	Larger vegetated portions are of value. Recoded along Little Eprapah Creek and Moogurrapum Creeks.
Phalacrocorax sulcirostris	little black cormorant	LC	Known	Known. Likely within any of the waterways and dams
Microcarbo melanoleucos	little pied cormorant	LC	Potential	Waterways and Dams
Phalacrocorax carbo	great cormorant	LC	Unlikely	Low value habitats onsite
Phalacrocorax varius	pied cormorant	LC	Known	May occur within the larger dams
Coturnix ypsilophora	brown quail	LC	Known	Grassland and open woodland habitats.
Podargus strigoides	tawny frogmouth	LC	Known	This species may be present in most of the areas where vegetation is retained.
Poliocephalus poliocephalus	hoary-headed grebe	LC	Unlikely	Very low potential to occur due to small size of water bodies.
Podiceps cristatus	great crested grebe	LC	Unlikely	Very low potential to occur due to small size of water bodies.
Tachybaptus novaehollandiae	Australasian grebe	LC	Potential	May occur within the larger dams
Pomatostomus temporalis	grey-crowned babbler	LC	Unlikely	No recent records inn local area.
Platycercus eximius	eastern rosella	LC	Potential	Wide ranging species which could occur seasonally onsite.
Alisterus scapularis	Australian king-parrot	LC	Potential	Wide ranging species which could occur seasonally onsite.
Platycercus adscitus	pale-headed rosella	LC	Known	Regular visitor across the site This wide ranging species utilises a variety of habitats. .
Trichoglossus chlorolepidotus	scaly-breasted lorikeet	LC	Known	Wide ranging species which occurs regularly across the site.
Trichoglossus haematodus moluccanus	rainbow lorikeet	LC	Known	Wide ranging species which occurs regularly across the site.
Parvipsitta pusilla	little lorikeet	LC	Potential	Wide ranging species which would occur intermittently onsite.
Psophodes olivaceus	eastern whipbird	LC	Known	Primarily associated with the riparian and woodland areas of Little Eprapah Creek.
Sericulus chrysocephalus	regent bowerbird	LC	Unlikely	No suitable habitat
Porphyrio melanotus	purple swamphen	LC	Known	Regularly observed onsite. Primarily associated with dams and riparian areas.
Gallinula tenebrosa	dusky moorhen	LC	Known	Associated with dams and riparian areas.
Lewinia pectoralis	Lewin's rail	LC	Unlikely	May occur within riparian habitats and waterways. No suitable habitats within the Stage 1 area.

Scientific Name	Common Name	Status	Occurrence	Comments
Gallirallus philippensis	buff-banded rail	LC	Potential	May occur in the more densely vegetated and rank grassland areas particular along waterways.
Himantopus himantopus	black-winged stilt	LC	Potential	Could utilise dam's onsite – though low value as habitat.
Rhipidura leucophrys	willie wagtail	LC	Known	Present across the site
Rhipidura rufifrons	rufous fantail	SL	Expected	Seasonal visitor within the vegetated portions of the site and adjoining riparian habitats.
Rhipidura albiscapa	grey fantail	LC	Known	Present within the vegetated portions of Lot 22 and Little Eprapah Creek.
Ninox connivens	barking owl	LC	Unlikely	Not known in local landscape
Ninox strenua	powerful owl	V	Potential	May occasion the site in search of prey. No suitable roosting or breeding habitat present.
Ninox boobook	southern boobook	LC	Known	This nocturnal species is relatively common in local landscape.
Sturnus vulgaris	common starling	I	Potential	Not observed onsite but known in local landscape
Acridotheres tristis	common myna	I	Known	Common within the open areas and utilising hollow bearing trees for breeding.
Platalea regia	royal spoonbill	LC	Expected	Known in local landscape and suitable habitats present.
Platalea flavipes	yellow-billed spoonbill	LC	Potential	Could utilise dam's onsite – though low value as habitat.
Plegadis falcinellus	glossy ibis	SL	Potential	May visit the wetland portions onsite
Threskiornis molucca	Australian white ibis	LC	Known	Utilising the pastoral habitats across the site.
Threskiornis spinicollis	straw-necked ibis	LC	Known	This species will utilise the pastoral habitats.
Zosterops lateralis	silvereye	LC	Known	Recorded along Little Eprapah Creek and wooded habitats.
Turnix varius	painted button-quail	LC	Unlikely	No suitable habitat
Turnix maculosus	red-backed button-quail	LC	Unlikely	No suitable habitat
Tyto delicatula	eastern barn owl	LC	Potential	Could occur within the local landscape and may utilise the open habitats for hunting.
Tyto tenebricosa tenebricosa	sooty owl	LC	Unlikely	Not known in local landscape and no suitable habitat.
Mammals				
Acrobates pygmaeus	feathertail glider	LC	Unlikely	Little to no suitable habitat
Vulpes vulpes	red fox	I	Known	Evidence of visitation recorded. This species could occur anywhere onsite
Planigale maculata	common planigale	LC	Unlikely	Low value woodland habitats lacking size and structure. Likely excluded due to presence of predators.
Phascogale tapoatafa tapoatafa	brush-tailed phascogale	LC	Unlikely	A species which is present in larger bushland areas. Could occur onsite or within the adjoining riparian habitats.
Antechinus flavipes	yellow-footed antechinus	LC	Potential	Not trapped during targeted survey. Expected to occur in the wider landscape in larger more intact woodland and forest habitats.
Sminthopsis murina	common dunnart	LC	Unlikely	A species which is present in larger bushland areas and generally associated with intact bushland. Little to no suitable habitats within stage 1. .
Lepus europaeus	European brown hare	I	Known	Across the pastoral portions of the site.
Macropus giganteus	eastern grey kangaroo	LC	Unlikely	This common species is not known in local area and no evidence of visitation was recorded.
Wallabia bicolor	swamp wallaby	LC	Potential	Adjoining riparian habitats and vegetated

Scientific Name	Common Name	Status	Occurrence	Comments
				linkages. Not recorded onsite.
Macropus parryi	whiptail wallaby	LC	Unlikely	Not known in local area and no suitable habitats. Not recorded during site visits.
Macropus rufogriseus	red-necked wallaby	LC	Known	Can and does occur across the site.
Miniopterus australis	little bent-wing bat	LC	Potential	May forage across wooded areas
Miniopterus schreibersii oceanensis	eastern bent-wing bat	LC	Potential	May forage across wooded areas and nearby open areas.
Mormopterus norfolkensis	east coast freetail bat	LC	Potential	May forage across wooded areas and roost in hollows
Mormopterus lumsdenae	northern free-tailed bat	LC	Potential	Across the site
Tadarida australis	white-striped freetail bat	LC	Known	Present over the site during survey period. This species can forage across wooded areas, open pasture and urban environments.
Mormopterus ridei	eastern free-tailed bat	LC	Potential	May forage across wooded areas and roost in hollows
Mus musculus	house mouse	I	Known	Recorded. Would be present across the site.
Rattus rattus	black rat	I	Known	Recorded. Would be present across the site.
Rattus fuscipes	bush rat	LC	Potential	Low potential within the heavily wooded areas particularly riparian habitats along Little Eprapah Creek.
Rattus lutreolus	swamp rat	LC	Potential	Adjoining riparian habitats and swampy areas.
Hydromys chrysogaster	water rat	LC	Potential	Associated with creek systems. Would be restricted to Little Eprapah and Moogurrapum Creeks. .
Rattus norvegicus	brown rat	I	Potential	In heavily wooded areas
Ornithorhynchus anatinus	platypus	SL	Unlikely	In adjoining creek systems.
Perameles nasuta	long-nosed bandicoot	LC	Unlikely	Not known in local landscape.
Isoodon macrourus	northern brown bandicoot	LC	Known	Relatively common species across the local landscape and urban areas where suitable cover is retained. .
Petaurus breviceps	sugar glider	LC	Potential	In wooded habitats and tree hollows
Petaurus norfolcensis	squirrel glider	LC	Expected	In wooded habitats and tree hollows. Observed within roadside vegetation on Bunker road.
Trichosurus vulpecula	common brushtail possum	LC	Known	Mostly within the wooded areas but this species occurs across the site
Trichosurus caninus	short-eared possum	LC	Unlikely	Little to no suitable habitats.
Phascolarctos cinereus	koala	V	Known	In wooded areas supporting preferred feed trees
Pseudocheirus peregrinus	common ringtail possum	LC	Known	Across the site within vegetated areas.
Petauroides volans volans	southern greater glider	V	Unlikely	No suitable habitat. The site lacks suitable vegetation and habitats for this species to persist.
Pteropus scapulatus	little red flying-fox	LC	Expected	Seasonal visitor in response to flowering
Pteropus alecto	black flying-fox	LC	Known	Regular visitor in response to flowering
Pteropus poliocephalus	grey-headed flying-fox	LC	Expected	Seasonal visitation in response to flowering
Sus scrofa	pig	I	Potential	Although no evidence observed
Tachyglossus aculeatus	short-beaked echidna	SL	Potential	In wooded areas across the site

Scientific Name	Common Name	Status	Occurrence	Comments
Scoteanax rueppellii	greater broad-nosed bat	LC	Potential	In association with adjoining creek vegetation.
Chalinolobus nigrogriseus	hoary wattled bat	LC	Potential	May forage across wooded areas and roost in large dead trees
Myotis macropus	large-footed myotis	LC	Potential	May forage over adjacent creeks and hunt over existing dams.
Chalinolobus morio	chocolate wattled bat	LC	Potential	May forage across wooded areas and roost in hollows
Nyctophilus gouldi	Gould's long-eared bat	LC	Potential	May forage across wooded areas and roost in hollows
Scotorepens greyii	little broad-nosed bat	LC	Potential	May forage across wooded areas and roost in hollows
Chalinolobus gouldii	Gould's wattled bat	LC	Potential	May forage across wooded areas and roost in hollows

28ºS
ENVIRONMENTAL

Appendix 6.3: Black Sheoak Assessment in Moogurrupum Creek Interface area, 28 South

Sutgold Precinct 2

Koala Habitat Tree, Glossy Black Cockatoo feed tree and restoration requirement assessment of the Interface Area

1. Overview / Introduction

An assessment of vegetation types within the nominated interface areas of Sutgold Precinct 2 was undertaken. Specifically, the assessment targeted gathering sufficient information to develop an understanding of likely restoration interventions required to bring component vegetation into line with pre-clear REs and hence enhance koala bushland utility and functionality.

2. Method

The following methodology was employed.

1. In the field, polygons with unique characteristics were defined: (1.) *Allocasuarina littoralis* (black sheoak) regrowth with regenerating koala habitat trees generally > NJKHT status; (2.) black sheoak without regenerating koala habitat trees; (3.) regenerating areas with scattered NJKHT; (4.) mature *Melaleuca quinquenervia* (paperbark) woodland /open forest with highly disturbed understorey and (5.) mature paperbark / eucalypt woodland / open forest with lower levels of understorey disturbance. Polygons were mapped in the field Tuesday 31 August, 2021 7.30 am to 4.45pm) with GPS prior to establishing assessment plots.

2. 10m X 10m plots were established within each of the mapped polygons, with multiple plots established in larger polygons. Plots were aligned on a north-south, east-west alignment using a hand-held silva compass. Corner points were flagged and the northwester and southeastern corners plotted with GPS.

3. Sampling effort was kept consistent across all polygons. Within plots all Non-Juvenile Koala Habitat Trees (coded >NJKHTS) were enumerated by species; all juvenile koala habitat trees (coded <NJKHT) were enumerated by species. NJKHTs were assessed in the field as confirming to the 100 mm DBH or greater than 4 m height rule (genera *Angophora, Corymbia, Eucalyptus, Melaleuca*), with heigh determined in the field by a 4 m staff (4 m length of orange 25 mm electrical conduit).

4. Black sheoak density (primary Glossy Black Cockatoo forage tree) was assessed through counting black sheoaks across a 5x10m subset of the plot where dense black sheoak occurred, or across the total plot in sparse plots or plots where regrowth was not unform. In the field searches for signs of Glossy Black Cockatoo presence (Orts) was undertaken and prior to sampling a period (five minutes) of quiet listening was undertaken to determine presence through sounds of feeding or calls. Searches and listening was also undertaken when traversing between plot sites).

5. At the completion of the plot-based assessment Take a photo from the northwestern corner of each plot with a view to the southeastern corner. Photos were taken from the middle of the northern, eastern, southern and western edges outwards from the plot to show that the plot is generally representative of the surrounding landscape (**Inset 1**).

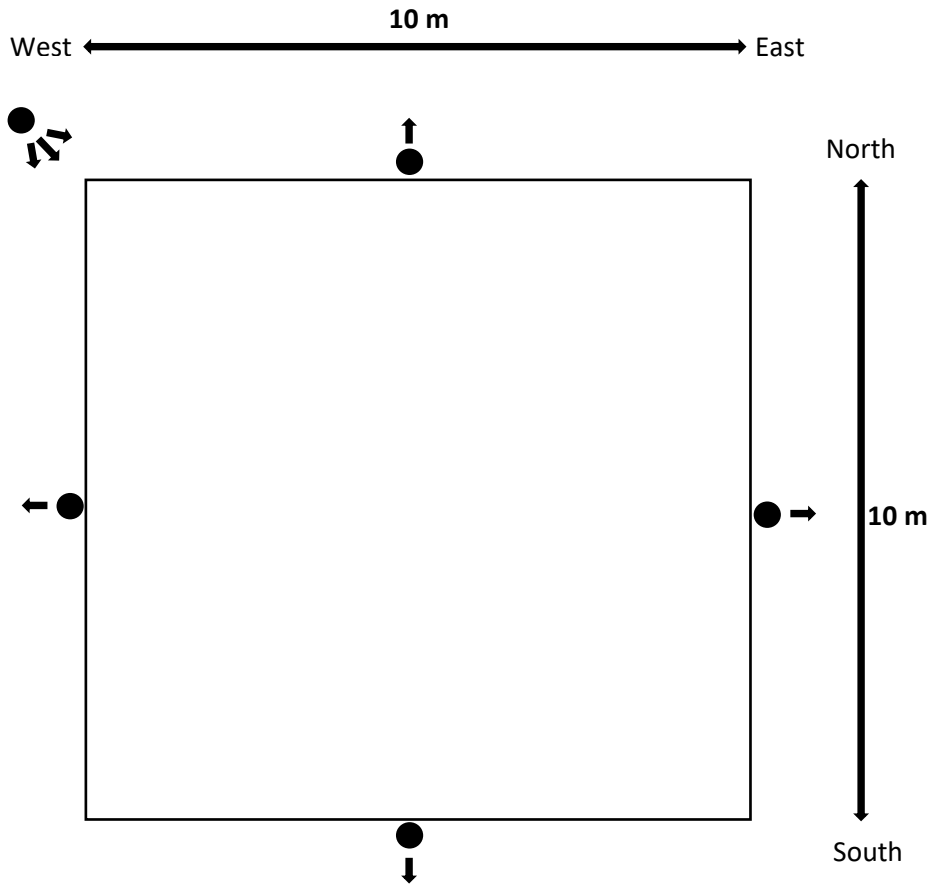
6. Plots were not established within (a) polygons too small or narrow to support a plot, (b) in paperbark woodland along drainage lines containing dense understorey of *Lantana camara* (lantana), or (c) along Moogurrapum Creek, (d) along the southern portions of Moogurrapum

Creek where a paperbark and exotic woody species occur as a canopy over a dense weedy understorey and the sparse distribution of large NJKHTs. In relation to (a) and (b), assessment was conducted by a traverse along the feature and from vantage points.

- all >NJKHTs and <NJKHTs were counted from vantage points along the drainage line and the understorey described.
- Photographs of the units were taken to characterise the units from key vantage points and the communities were described.

In relation to (c) and (d):

- Photographs of the units were taken to characterise the units from key vantage points and the communities were described.
- the mix of Koala Habitat Trees (KHTs) and non-KHTs including a characterisation of weed presence / disturbance (variance from natural pre-clear conditions) was qualitatively described at five representative vantage points along the creek.



Key:

Photo point and direction

Inset 1: plot alignment and photo points

3. Field assessment

Field assessments were conducted Tuesday 31/8 – Wednesday 1/9. In-field mapping of vegetation polygons identified seven vegetation types:

***Allocasuarina littoralis* (black sheoak) dominated (regrowth)**

- 1a. Black sheoak with regenerating koala habitat trees, mainly comprising >NJKHT status
- 1b. Black sheoak without regenerating koala habitat trees

***Eucalyptus racemosa* (scribbly gum) dominated (relict)**

- 2. Mature (relict) scribbly gum open forest with mainly >NJKHT

Mixed species (regrowth)

- 3. Regenerating areas with scattered NJKHT

***Eucalyptus racemosa* (scribbly gum) and *Melaleuca quinquenervia* (paperbark) dominated (relict)**

- 4. Mature *Melaleuca quinquenervia* (paperbark) / scribbly gum woodland / open forest with lower levels of understorey disturbance along tributary of Moogurrapum Creek

Mature *Melaleuca quinquenervia* (paperbark) (relict and regrowth)

- 5a. Mature paperbark woodland /open forest along stream order 1 drainage lines with dense lantana
- 5b. Mature paperbark woodland /open forest with highly disturbed understorey along tributary of Moogurrapum Creek.

These are spatially represented ion **Figure 1**.

Table 1 presents the results from the assessment undertaken. Eight plots were established within vegetation types 1a, 1b, and 2. Within vegetation type 1a there was on average (5 plots), 23 >NJKHTs and 5 <NJKHTs / plot (2,300 KHTs / ha). Within vegetation type 1b (2 plots) there were no KHTs present. Vegetation type 2 (1 plot) consists of mature open forest with 32 >NJKHTs and 11 <NJKHTs present (4,300 KHTs / ha). Regenerating areas with scattered NJKHTs contain 796 KHTs / ha.

4. Discussion

The majority of the area investigated is contained within the bushland habitat areas of the former koala regulatory provisions (**Figure 2**).

Plot sites

Inspection of Pre-clear RE mapping reveals that much of the bushland area consisted mainly of RE12.12.14, RE12.3.6 along Moogurrapum Creek and minor areas of 12.9-10.4 in the north of the survey area (**Figure 3**). All are recognised REs affording habitat for kolala ('koala REs').

Regional Ecosystem Technical descriptions (DSITIA, n.d.), reveal the total number of stems in the Emergent, T1 and T2 (canopy layers) in each RE (see notes in **Table 1**). Within the REs black sheoak generally appears as a minor component within the T2 layer. Comparisons between the total numbers of stems for canopy in each of the appropriate REs (columns 11 and 10, Table 1), with the total number of stems for black sheoak and KHTs recorded in the field plots (columns 9 and 7 of Table 1) reveal an over representation of black sheoaks in the regrowth in vegetation type 1a/b.

Within the plot sites, overall weed loading was light, presumably as a result of competitive exclusion (shading) by the primarily black sheoak regrowth. An exception to the was within vegetation type 1b, where the black sheoak regrowth is over-mature / senescing and in decline. In these locations some sparse native groundcover regrowth is occurring however KHT regrowth has previously been supressed, and with opening canopy and light reaching the floor of the unit, lantana is colonising the patch. These are represented in the Plates section (**Plates 1-49**).

Vegetation type 2 has high levels of naturalness and fewer weeds (**Plates 50-56**).

Total count sites

Total counts of stems were undertaken in vegetation types 3 and 5a. Stem counts for KHTs in type 3 (column 7 of Table 1) exceed the pre-clear densities by almost two times[2]. It is assumed that these are likely to self-thin as the regrowth progresses to maturity. Weed loading is scattered with lantana and *Schinus terebinthifolia* (Brazilian pepper)* present as the main woody weeds (refer **Plate 57**).

Vegetation type 5a is significantly affected by lantana growth and this is suppressing canopy tree recruitment (refer **Plates 62-65**). Total stem counts (all were KHTs) reveal the density is 109 stems / ha (column 7, Table 1) and this is >13 times less than the appropriate RE stem count.

Qualitative sites

Two vegetation types were described qualitatively: 4 and 5b. Type 4 corresponds to pre-clear RE12.3.6 and the canopy is co-dominated by paperbark and scribbly gum. Other canopy species which occur on terraces between the low flow and high flow channels include *Lophostemon suaveolens* (swamp mahogany), *Lophostemon confertus* (brush box), *Corymbia intermedia* (pink bloodwood), *Corymbia trachyphloia* (brown bloodwood) and *Eucalyptus resinifera*) red stringybark) (refer **Plates 58-61**).

Woody weed presence is a minor component of the upper layers of the type (when compared with vegetation type 5b to the south) and include *Archontophoenix alexandrae* (Alexandra palm)[#], *Syagrus romanzoffiana* (Cocos palm)*, *Pinus elliottii* (slash pine)* and occasionally *Cinnamomum camphora* (camphor laurel)*. Other prominent weeds include *Solanum torvum* (devil's fig)*, *Anredera cordifolia* (madeira vine)* which is progressively becoming a weed smothering the mid storey and canopy, lantana which is cloaking the upper banks of the high flow channel and *Ageratum houstonianum* (blue billy goat weed)* on the flood terrace.

Vegetation type 5b corresponds with RE12.3.6 and whist for the most part, paperbark is a significant canopy component, density of this species and its proportional representation in the canopy decreases north to south (it was present at viewpoints 4, 5, 6 and 7, but absent from 8 – see **Figure 1** and **Plates 68-89**). This corresponds with a progressive increase in the numbers of exotic and non-endemic canopy species and climbing plants which smother the canopy. For the majority of the species, they are garden escapes although several have been planted as ornamental in proximity to the dwelling at (52 Double Jump Road). Other endemic canopy species include those identified for vegetation type 4 (above) however they diminish rapidly as canopy component between the northern edge and the point represented by vantage point 4.

[2] Stem counts occurred within polygon 6 and the result applied to polygon 13

[*] exotic – naturalised species or used as garden ornamental planting; freeliving

[#] native species endemic to northern Queensland

Prominent canopy weeds consist of slash pine*, camphor laurel*, Cocos palm*, Alexandra palm[#], 5 leaf, climbing pathos, *Schefflera actinophylla* (umbrella tree)[#], *Caryota* sp. (fishtail palm)*, *Spathodea campanulata* (African tulip tree)*, *Grevillea robusta* (silky oak)^, *Castanospermum australe* (black bean)[^], *Ficus elastica* (Indian rubber tree)^*, Erythrina sp. *Ficus benjamina* (weeping fig)[#]^. Significant climbing weeds smothering vegetation include *Syngonium podophyllum* (arrowhead vine)*, *Epipremnum aureum* (devils ivy)*, madeira vine*, *Monstera deliciosa* (monstera)* and *Hylocereus* sp (dragon fruit)*.

Prominent midstorey and groundcovers include *Dypsis lutescens* (golden cane palm), *Phyllostachys aerea* (golden bamboo)*, arrowhead vine*, *Nephrolepis cordifolia* (fishbone fern)*, *Hypoestes phyllostachya* (polka dot plant)*, *Ochna serrulata* (ochna)*, *Dracena fragrans* (dracaena)*.

Regeneration

An assessment of restoration approaches[3] for each of the polygons comprising the vegetation types identified by this assessment has been undertaken (**Table 1**). Three approaches have been adopted and in summary are:

- Natural regeneration: Vegetation type 2.
- Assisted regeneration: Vegetation types 1a, 3, 4 and 5a.
- Reconstruction: Vegetation types 1b and 5b

Natural regeneration of vegetation type 2 will comprises the least intervention of all interventions and will of removal of the existing light weed loading.

Assisted natural generation within the black sheoak vegetation type (1a) will necessitate the thinning of black sheoak around emerging KHTs and non-KHT canopy species (e.g. *Alphitonia excelsa*). Initially this may include removal of black sheoak in a 2 m radius around each canopy species. However as demonstrated by the data identified in **Table 1**, total blacksheoak stem density along exceeds canopy stem densities for preclear REs and failure to thin and manage natural regeneration / or undertake supplementary planting of midstorey and canopy strata species may place these area on a similar trajectory to vegetation type 1b. Vegetation types 3, 4 and 5a, each will require varying degrees of weeding and infill planting.

Vegetation type 5b is <u>the most seriously degraded</u> vegetation on the site, with a trajectory for the type diverging significantly from natural 'pre-clear' conditions. Failure to intervene will result in a community type unrecognisable to any recognised RE. This departure is as a result of the significant weed loading which is suppressing native regeneration and smothering extant floristic components that are characteristic of RE12.3.6.

Glossy Black Cockatoo

Glossy Black Cockatoo was not detected; no Orts, were observed, no calls or sounds of feeding were detected during the assessment.

[^] cultivated endemic species or endemic species not known from former pre-clear RE

[^*] cultivated exotic species

[3] South east Queensland Ecological Restoration Framework, Volume 2 – Guideline (common restoration approaches p33); the strategies in order of effort from least effort to greatest effort are – *natural regeneration, assisted natural regeneration, reconstruction, fabrication.*

5. Conclusion

This assessment has identified that the most degraded vegetation within the site occurs along the southern section of Moogurrapum Creek (vegetation type 5b), and that existing conditions are such that ecological resilience of the former RE is diminished and permanent changes are being effected to the structure and floristics by the exotic weeds present.

The regenerating two vegetation types containing black sheoak are also digressing from pre-disturbance conditions. Vegetation type 1b appears to have suffered the consequence of dense sheoak suppressing natural regeneration and now that this vegetation is senescing and failing, weeds are establishing. These areas need significant planting interventions to re-correct the trajectory of this vegetation type. The younger stands of black sheoak (vegetation type 1a) still contain regenerating KHTs and other canopy species and are closer to pre-clear canopy floristics. Interventions to reduce black sheoak competition is required.

Targeted weeding and some supplementary planting will greatly benefit the remaining vegetation types, with type 2 vegetation requiring the least intervention.

Glossy Black Cockatoo were not recorded and no signs of past utilisation (orts) were observed.

6. References

Chenoweth EPLA and Bushland Restoration Services (2012) *South East Queensland Ecological Restoration Framework: Guideline*. Prepared on behalf of SEQ Catchments and South East Queensland Local Governments, Queensland.

DSITIA (2018) *Regional Ecosystem Technical Descriptions.* Department of Science, Information Technology, Innovation and the Arts. (https://www.publications.qld.gov.au/dataset/re-technical-descriptions/resource/1771f391-44b9-4d25-8315-f92033610a9b):

Type (1)	Sites (2)	Polygons (3)	Plates (4)	>NJKHT* (5)	<NJKHT* (6)	KHT Canopy stems / ha (7)	Black sheoak		Pre-clear RE		Nominal prescription (12)
							Number (8)	Stems / ha (9)	Type (10)	Canopy (E/T1/T2#) density (11)	
1a. Black sheoak with regenerating koala habitat trees, mainly >NJKHT status	Plots 1	1	1-7	7 (1)	4 (1)	1,100	90	9,000	12.3.6	1,336	**Assisted natural regeneration**[1] - Thin black sheoak and supplemental plant with NJKHT at rate of 300 stems / ha, weed removal. No GBC orts, feeding, calls detected.
	Plot 2	1	8-14	17 (1)	2 (1)	1,900	44	4,400	12.3.6	1,336	**Assisted natural regeneration**[1] - Thin black sheoak around regenerating NJKHT to reduce competitive pressure, weed removal. No GBC orts, feeding, calls detected.
	Plot 3	2	15-21	3 (2)	4 (1)	500	24	2,400	12.3.6	1,336	**Assisted natural regeneration**[1] - Thin black sheoak and supplemental plant with NJKHT at rate of 1,100 stems / ha, weed removal . No GBC orts, feeding, calls detected.
	Plot 4	2	22-28	83 (2)	8 (2)	9,100	56	5,600	12.3.6	1,336	**Assisted natural regeneration**[1] - Thin black sheoak around regenerating NJKHT to reduce competitive pressure, weed removal. No GBC orts, feeding, calls detected.
	Plot 8	-	29-35	5 (2)	7 (2)	1,200	44	4,400	12.3.6	1,336	**Assisted natural regeneration**[1] - Thin black sheoak and supplemental plant with NJKHT at rate of 300 stems / ha, weed removal. No GBC orts, feeding, calls detected.
1b. Black sheoak without regenerating koala habitat trees	Plots 6 and 7	5	36-42	nil	nil	nil	20	2,000	12.3.6	1,336	**Reconstruction**[1] - Infill planting of canopy trees / KHTs at rate of 1,547 stems /ha, weed removal . NGC signs.
			43-49	nil	nil	nil	16	1,600	12.3.6	1,336	
2. Mature (relict) *Eucalyptus racemosa* (scribbly gum) open forest with mainly >NJKHT	Plot 5	7	50-56	32 (3)	11 (1)	4,300	nil	nil	12.3.6	1,336	Weed removal and **natural regeneration**[1]
3. Regenerating areas with scattered NJKHT	Viewpoint 1	6, 13	57	43 / 540 m^2		796			12.12.14 / 12.9-10.4	483 / 1,547	Weed removal and **assisted natural regeneration**[1]
4. Mature paperbark / scribbly gum woodland / open forest with lower levels of understorey disturbance along tributary of Moogurrapum Creek	Viewpoint 2	11	58-61						12.3.6	1,336	Weed removal of lantana and **assisted natural regeneration**[1] (supplementary planting of canopy species)
5a. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest along drainage line with dense lantana	Viewpoint 3	8, 9	62-65	29 / 2647 m^2		109			12.3.6	1,336	Weed removal of lantana and **assisted natural regeneration**[1] (supplementary planting of canopy species)
5b. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest with highly disturbed understorey along tributary of Moogurrapum Creek	Viewpoints 4-8	10	66-89						12.3.6	1,336	Weed removal and **reconstruction**[1] (supplementary planting with canopy, midstory and ground stratum)

Notes:

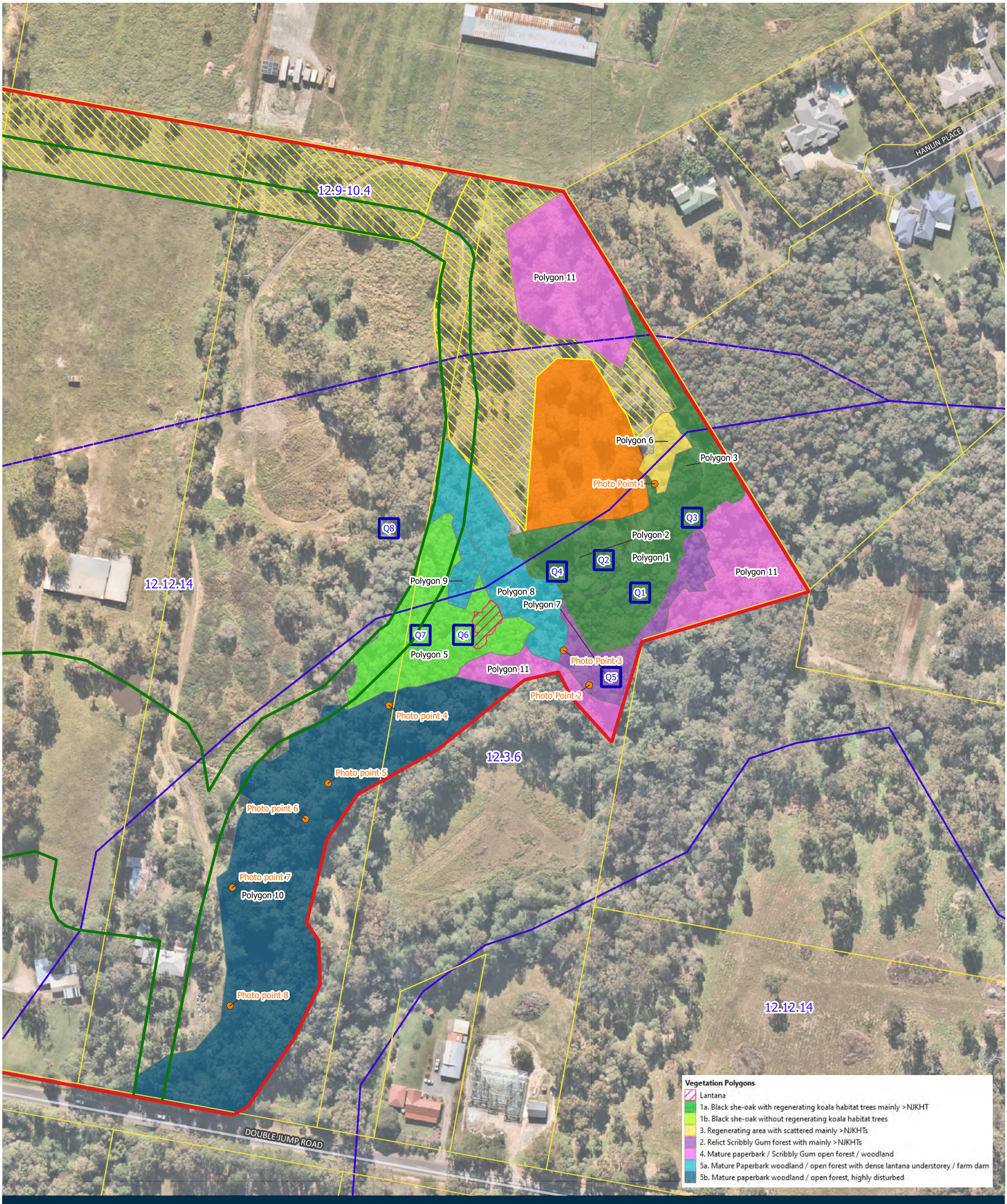
* - total number of trees (number of species)

1. - *After* South east Queensland Ecological Restoration Framework, Volume 2 – Guideline (common restoration approaches p33)

- Stem density per hectare (DSITIA, n.d.) *Regional Ecosystem Technical Descriptions* (https://www.publications.qld.gov.au/dataset/re-technical-descriptions/resource/1771f391-44b9-4d25-8315-f92033610a9b):

RE	Emergent	T1	T2	Total
12.12.14	n.a	800 (520-1280)	747 (533-960)	1,547
12.9-10.4	n.a	154 (40-320)	329 (60-880)	483
12.3.6	80 (40-120)	1136 (867-1360)	120 (120-120)	1,336

FIGURES



Precinct 2 - Victoria Point (Sutgold Pty Ltd) **Legend**

Figure 1 - Vegetation Survey

28 South Project Ref: 2019-100(b)

Data Sources: QLd Globe Imagery (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2020); Baseline Roads (DNRME 2020); Waterways (DNRME 2019).

28°S ENVIRONMENTAL

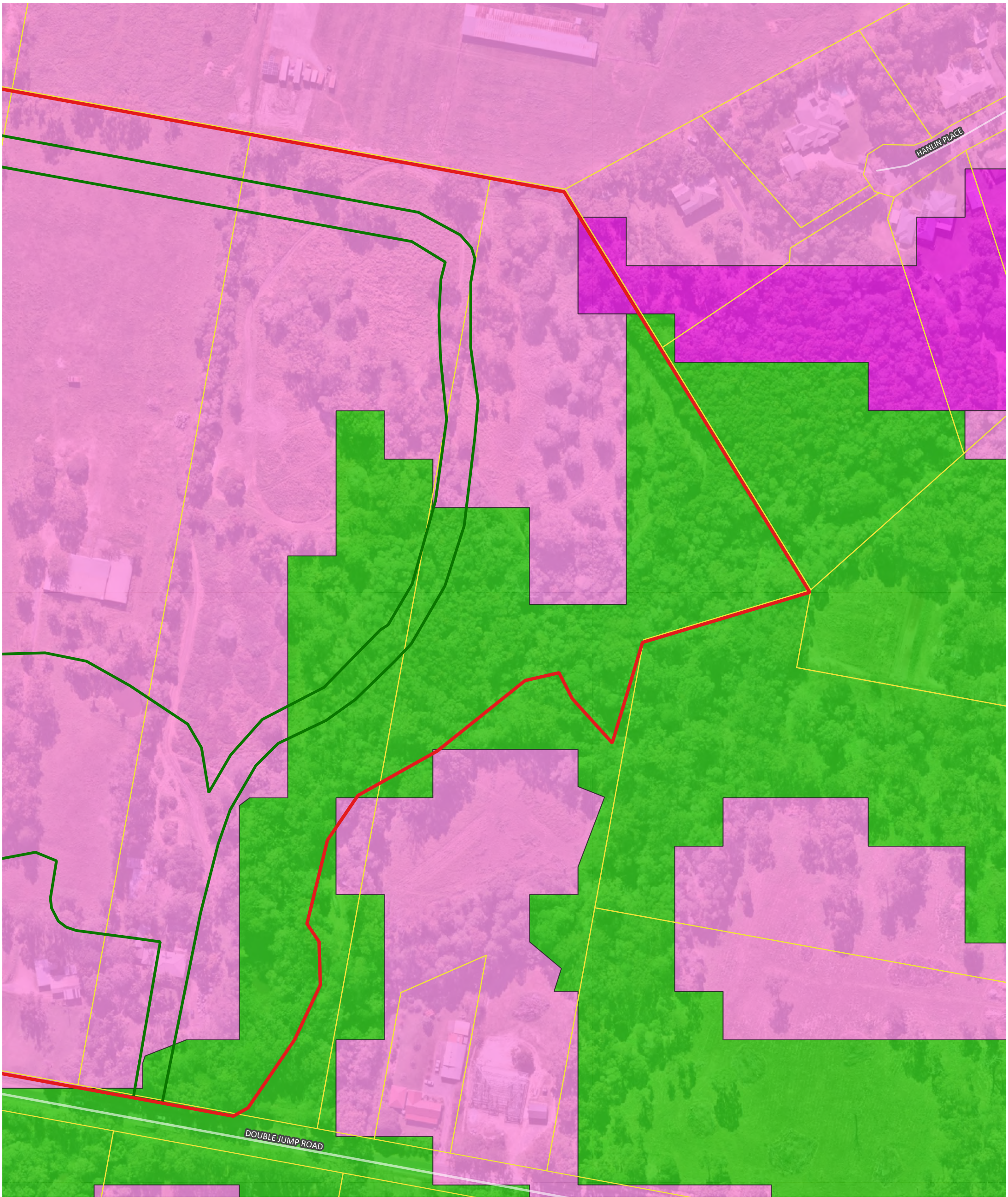
- Precinct 2 Boundary
- Detailed Survey Area
- Property Boundaries
- Photo Points
- 10x10m Vegetation Assessment Plots
- Proposed Offset Planting Areas
- Residual Stage 1 Offset Area Within Precinct 2 as per ODS

Issue Date	Dwg No.	Author
7 September 2021	2019-100(b)	CT
Approved	**Revision Note**	
AD		

(A3) GDA 94 MGA 56

0 25 50 75 100 m

N



Precinct 2 - Victoria Point (Sutgold Pty Ltd) **Legend**

Figure 2 - Koala SPRP Mapping

28 South Project Ref: 2019-100(b)

Data Sources: QLd Globe Imagery (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2020); Baseline Roads (DNRME 2020); Waterways (DNRME 2019).

28°S ENVIRONMENTAL

- Precinct 2 Boundary
- Detailed Survey Area
- Property Boundaries

Koala SPRP Mapping

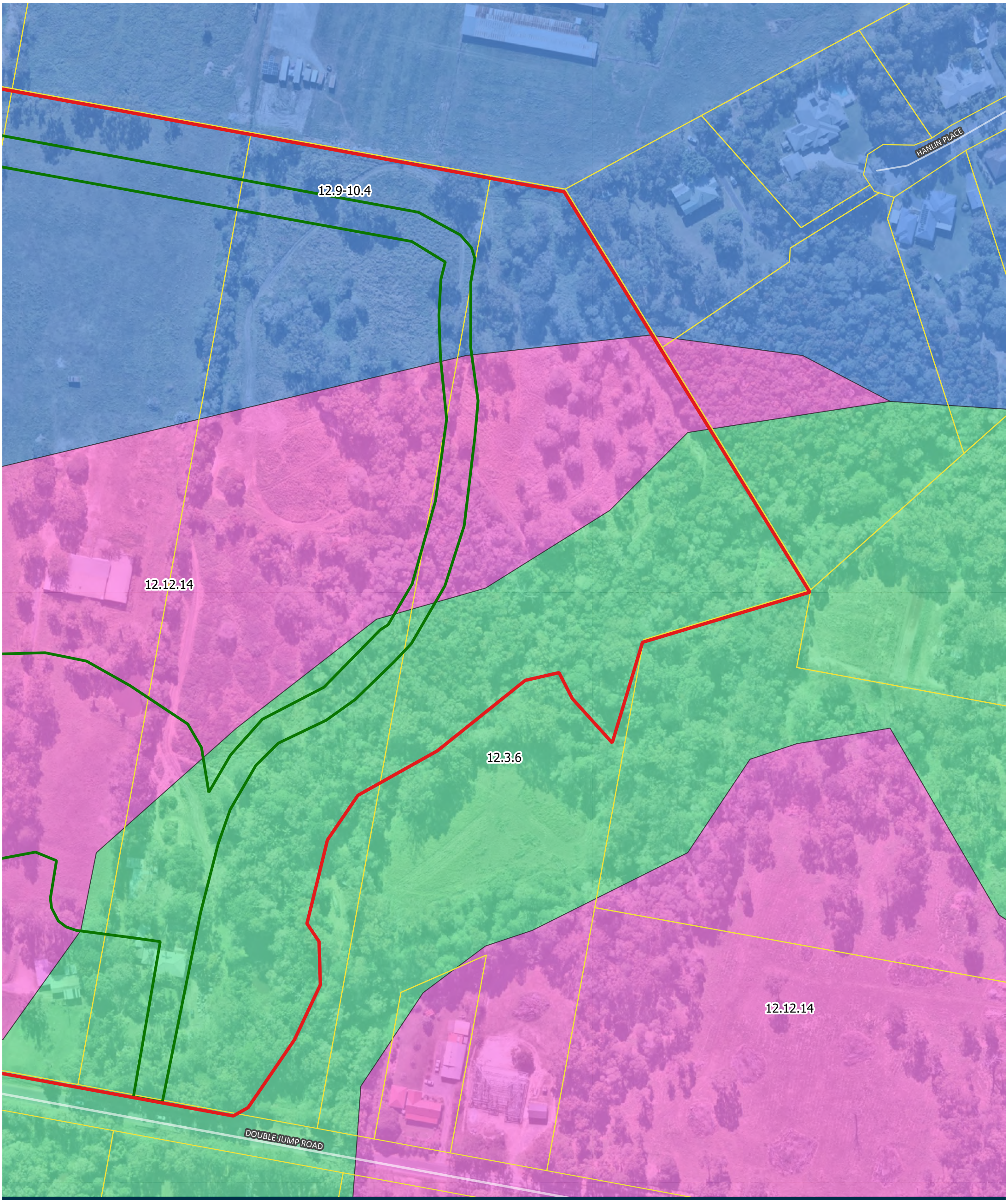
- HV Bushland
- MV Bushland
- LV Bushland
- HV Rehab
- MV Rehab
- LV Rehab
- HV Other
- MV Other
- LV Other
- Non Habitat
- Water

Issue Date	Dwg No.	Author
7 September 2021	2019-100(b)	CT
Approved	**Revision Note**	
AD		

(A3) GDA 94 MGA 56

0 25 50 75 100 m

N



Precinct 2 - Victoria Point (Sutgold Pty Ltd) **Legend**

Figure 3 - Preclear Regional Ecosystems

28 South Project Ref: 2019-100(b)

Data Sources: QLd Globe Imagery (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2020); Baseline Roads (DNRME 2020); Waterways (DNRME 2019).

28°S ENVIRONMENTAL

- Precinct 2 Boundary
- Detailed Survey Area
- Property Boundaries

Preclear Regional Ecosystems

- 12.12.14
- 12.3.6
- 12.9-10.4

Issue Date	Dwg No.	Author
7 September 2021	2019-100(b)	CT
Approved	**Revision Note**	
AD		

(A3) GDA 94 MGA 56

0 25 50 75 100 m

N

PLATES

Plots

Plate 1 - From northwestern corner view east

Plate 2 - From northwestern corner view south-east

Plate 3 - From northwestern corner view south

Plot 1: 1A. Black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 4 - View out from northern boundary of plot – note the mature *Eucalyptus racemosa* (scribbly gum)

Plate 5 - View out from eastern boundary of plot – view towards creek

Plate 6 - View out from southern boundary of plot - note the mature scribbly gum

Plate 7 - View out from western boundary of plot

Plot 1: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 8 - From northwestern corner view east

Plate 9 - From northwestern corner view south-east

Plate 10 - From northwestern corner view south

Plot 2: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 11 - View out from northern boundary of plot

Plate 12 - View out from eastern boundary of plot

Plate 13 - View out from southern boundary of plot

Plate 14 - View out from western boundary of plot

Plot 2: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 15 - From northwestern corner view east

Plate 16 - From northwestern corner view south-east

Plate 17 - From northwestern corner view south

Plot 3: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 18 - View out from northern boundary of plot

Plate 19 - View out from eastern boundary of plot

Plate 20 - View out from southern boundary of plot

Plate 21 - View out from western boundary of plot

Plot 3: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 22 - From northwestern corner view east

Plate 23- From northwestern corner view south-east

Plate 25 - From northwestern corner view south

Plot 4: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 25 - View out from northern boundary of plot – note mature scribbly gum

Plate 26 - View out from eastern boundary of plot

Plate 27 - View out from southern boundary of plot

Plate 28 - View out from western boundary of plot

Plot 4: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 29 - From northwestern corner view east

Plate 30 - From northwestern corner view south-east

Plate 31 - From northwestern corner view south

Plot 5: 2. Mature (relict) *Eucalyptus racemosa* (scribbly gum) forest with mainly >NJKHT

Plate 32 - View out from northern boundary of plot – note mature scribbly gum

Plate 33 - View out from eastern boundary of plot

Plate 34 - View out from southern boundary of plot

Plate 35 - View out from western boundary of plot

Plot 5: 2. Mature (relict) *Eucalyptus racemosa* (scribbly gum) forest with mainly >NJKHT

Plate 36 - From northwestern corner view east

Plate 37 - From northwestern corner view south-east

Plate 38 - From northwestern corner view south

Plot 6: 1b. black sheoak without regenerating koala habitat trees

Plate 39 - View out from northern boundary of plot

Plate 40 - View out from eastern boundary of plot

Plate 41 - View out from southern boundary of plot

Plate 42 - View out from western boundary of plot

Plot 6: 1b. black sheoak without regenerating koala habitat trees

Plate 43 - From northwestern corner view east

Plate 44 - From northwestern corner view south-east

Plate 45 - From northwestern corner view south

Plot 7: 1b. black sheoak without regenerating koala habitat trees

Plate 46 - View out from northern boundary of plot

Plate 47 - View out from eastern boundary of plot

Plate 48 - View out from southern boundary of plot

Plate 49 - View out from western boundary of plot

Plot 7: 1b. black sheoak without regenerating koala habitat trees

Plate 50 - From northwestern corner view east

Plate 51 - From northwestern corner view south-east

Plate 51 - From northwestern corner view south

Plot 8: 1a. black sheoak without regenerating koala habitat trees

Plate 53 - View out from northern boundary of plot

Plate 54 - View out from eastern boundary of plot

Plate 55 - View out from southern boundary of plot

Plate 56 - View out from western boundary of plot

Plot 8: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

PLATES

Observational sites

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Polygon 6 (Viewpoint 13): 3. Regenerating areas with scattered NJKHT

Plate 58 - Viewpoint 2, view east

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Plate 61 - Viewpoint 2, view south-west

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Plate 62 - Viewpoint 3, view south-west

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Plate 64 - Viewpoint 3, view north-west

Plate 65 - Viewpoint 3, view north

Polygon 8 (Viewpoint 3): 5a. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest along drainage line with dense lantana

Plate 66 - Viewpoint 4, view east

Plate 67 - Viewpoint 4, view south-east

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Polygon 10 (Viewpoint 4): 5b. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest with highly disturbed understorey along tributary of Moogurrapum Creek line

Plate 70 - Viewpoint 5, south-werst

Plate 71 - Viewpoint 5, view west

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Plate 73 - Viewpoint 5, view north

Polygon 10 (Viewpoint 5): 5b. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest with highly disturbed understorey along tributary of Moogurrapum Creek line

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Plate 80 - Viewpoint 6, north

Plate 81 - Viewpoint 6, noth-east

Polygon 10 (Viewpoint 6): 5b. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest with highly disturbed understorey along tributary of Moogurrapum Creek line

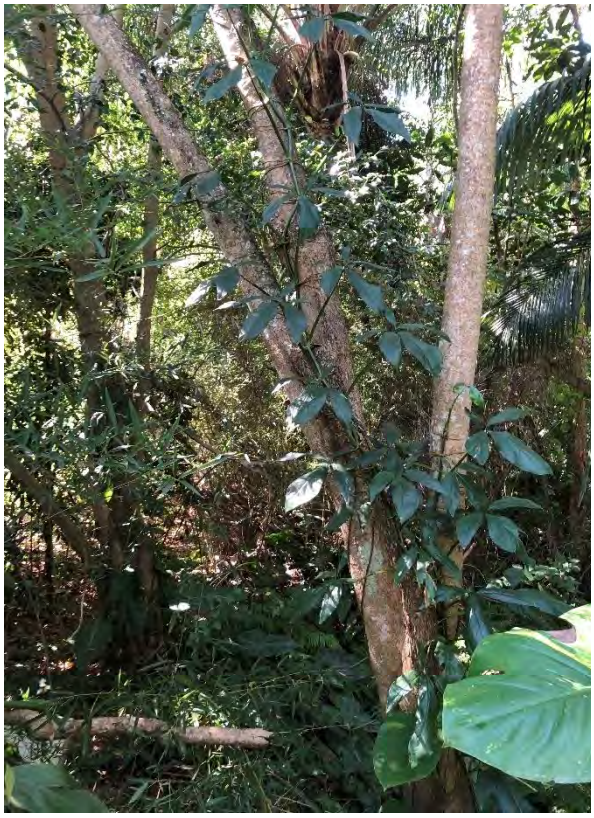

Plate 82 - Viewpoint 7, view east

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Polygon 10 (Viewpoint 7): 5b. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest with highly disturbed understorey along tributary of Moogurrapum Creek line

Plate 86 - Viewpoint 8, north east

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Plate 89 - Viewpoint 8, view south

Polygon 10 (Viewpoint 8): 5b. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest with highly disturbed understorey along tributary of Moogurrapum Creek line

28ºS ENVIRONMENTAL

Appendix 6.4: Joint Ecological Report

In the Planning and Environment Court **Appeal No 1612 of 2020**

Held at: **Brisbane**

Between: **Sutgold Pty Ltd** Appellant

And: **Redland City Council** Respondent

JOINT EXPERTS' REPORT - ECOLOGY (EXCLUDING KOALA)

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Date of Report: 18 September 2020

Statement to the Court

Appeal: P&E Appeal No. 1612 of 2020, Sutgold Pty Ltd v Redland City Council.

Participating Experts: Dr Andrew Daniel (**AD**) and Wayne Moffitt (**WM**). Copies of our curricula vitae are provided in **Appendix A**.

Paragraphs within this Joint Expert Report (**JER**) are agreed statements by the experts, other than where attributed to one or more experts as prefaced by those experts' initials.

Area of Expertise: Ecology (as specified above)

Meeting Date: We commenced our discussions on 9 August 2021 and have since liaised by phone and email.

We acknowledge that we have been instructed to assist the Planning & Environment Court by investigating and reporting on ecological matters in this appeal.

We verify that our instructions have included the Planning and Environment Court Rules 2018 and the Uniform Civil Procedures Rule 1999 which we have read and understood. These Rules and procedures require that:

i. a witness giving evidence (by report, or otherwise) in a proceeding as an expert has a duty to assist the Court; and

ii. the duty overrides any obligation the witness may have to any party to the proceeding or to any person who is liable for the expert's fee or expenses.

We verify that we understand and have complied with this duty, and that we have not received any instructions to adopt, or reject, any particular opinion in preparing the joint report.

Note:

1. Appendices, Figures and Plates have been provided by **WM**, unless specified otherwise.

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1.0 Background and Purpose of this Report

1. The Site the subject of this appeal is in the Redland City Council suburb of Victoria Point (**Figure 1**). Victoria Point's established urban areas extend in an arc from the Site's north to the east, and then continue south into the established suburb of Redland Bay. The Site is bound to the south by Double Jump Road. Beyond this lies rural land supporting a mosaic of vegetated and cleared areas. Land of similar character extends to the Site's west, while more heavily vegetated areas occur to the northwest. **Figure 2** shows the Site's more immediate setting, its boundaries, and its constituent properties. The Site is 43.181 hectares in area.

2. On 9 October 2018, Sutgold Pty Ltd (now **Appellant**) lodged a development application with the Redland City Council (now **Respondent**) seeking a development permit for reconfiguration of 9 lots into 275 Residential Lots, 3 Balance Lots, 1 Load Centre lot, 2 Local Park lots, 20 Open Space lots, 1 Pedestrian Connection lot and 1 Multi-function Spine lot in 12 stages. The development application was Impact Assessable and required coordinated assessment between the State Assessment Referral Agency (**SARA**) and the Department of State Development, Manufacturing, Infrastructure and Planning (**DSDMIP**). The development application was supported by an ecological memorandum prepared by consultancy, BAAM (**BAAM Memorandum**).

3. In the course of its assessment, the Respondent issued an information request, and on 29 May 2019 the Appellant provided its response. The Appellant's response included an amended layout plan that reduced the number of residential lots from 296 to 275. The development application was supported by an ecological assessment prepared by consultancy, BAAM (**BAAM Report**), and an information request response (**BAAM Response**). State issues regarding management of Regulated Vegetation were resolved with SARA at this stage of the assessment process.

4. The Respondent has failed or refused to decide the development application within the decision-making period and is thereby deemed to have refused the application (a deemed refusal). The Appellant appealed Council's deemed refusal to the Planning and Environment Court. The plans before the Council at the time the appeal was lodged (the **Initial Proposal**) are provided in **Appendix 2**.

5. On 6 August 2020, the Respondent issued its *Reasons for Refusal*.

6. In plans dated 25 November 2020, the Appellant identified its **Amended Proposal** (**Appendix 3**). The amended proposal includes changes requested by **WM** (refer points (a)-(c) below), and other amendments that achieve positive vegetation retention and ecological outcomes.[1]

   (a) the east-west link along the northern boundary of the Site has been increased from 30m to 40m to reflect the corridor dedication achieved on the adjoining Urbex land. This establishes an overall corridor width of 80m;

   (b) the amended proposal no longer seeks to establish development in the northeastern corner of the Site. Instead, development from this area has been redistributed into the main body of development. This change achieves better habitat consolidation in the eastern parts of the Site, and improves corridor function around the Site's northeastern corner; and

   (c) a 35m wide secondary fauna movement linkage is proposed to connect the multi-function spine with land to the south of Double Jump Road.

7. **WM** understands that negotiation between the parties in relation to the Precinct 1 appeal [2] will see a further positive change made in relation to the far northwestern corner of Precinct 2. Here, at the southern of end of Lot 801 on SP261302, the Appellant will forgo development of urban zoned land and instead dedicate it to the Respondent as conservation area (**Inset 1**).

8. **Appendix 4** shows the amended Precinct 1 layout plan, and correspondence from the Respondent requesting a minor change application to adopt the plan. Since lodgment of the Initial Application, considerable new residential development has been approved in the draft South West Victoria Point Local Plan Area (**Local Plan Area**). This new development indicates the development intent for the Local Plan Area and integrates the Amended Proposal with existing urban areas (i.e., the Amended Proposal is infill development). This new residential development occurs:

   (a) to the north of the Site (Urbex development);[3]

   (b) to the north of the Site (Precinct 1 of the Sutgold Development);[4]

---

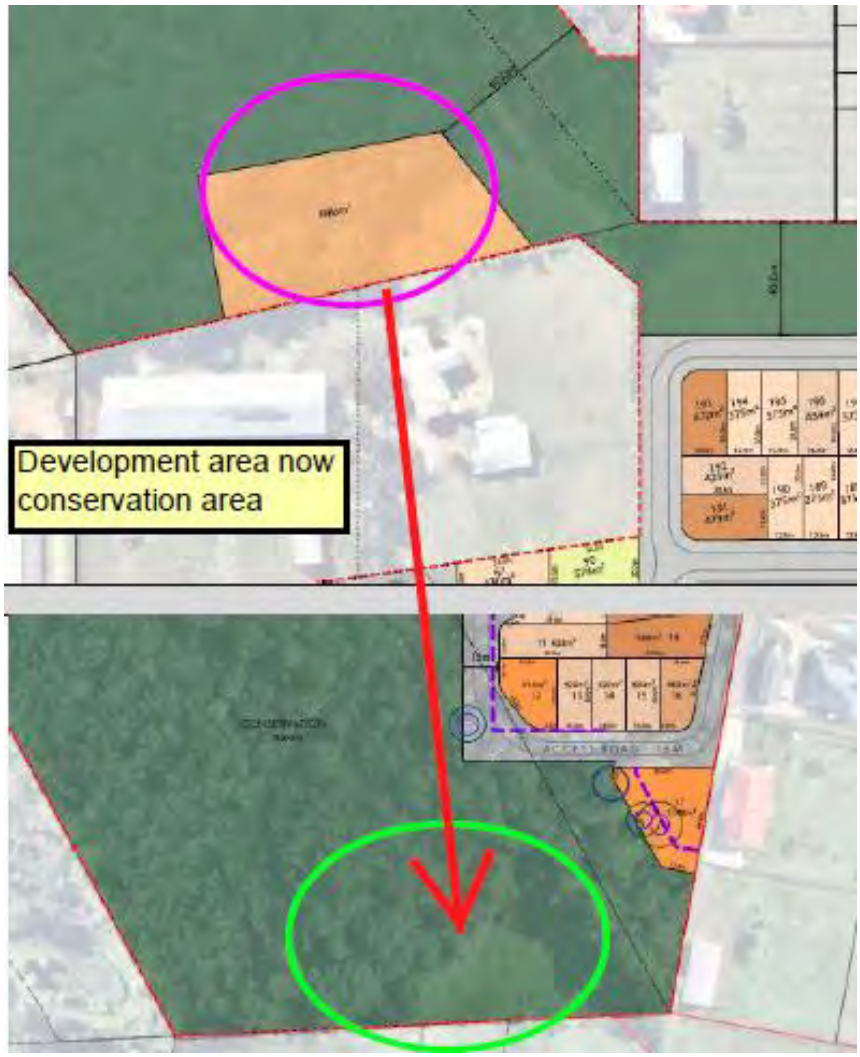
[1] Refer Paragraph 17(b) of the Affidavit of David Perkins dated 9 December 2020.
[2] Sutgold v Redland City Council (Appeal No. 39 of 2021)
[3] Planning and Environment Court Appeal No. 566 of 2020 (Clay Gully Pty Ltd ACN627 052 224 v Redland City Council and Edgarange Pty Ltd)
[4] Planning and Environment Court Appeal No. 39 of 2021 (Sutgold Pty. Ltd v Redland City Council)

(c) to the east of the Site (PPV development); [5] and

(d) to the west of the Site (Sutgold Stage 1 development).[6]

9. On 19 February 2021, the Respondent's *Notice of Position of Respondent*[7] established its final position on the grounds for refusal (highlighted in **Appendix 5**). The Appellant's final position in relation to ecology is described in Section 4 of its *Further Amended Appellant's List of Matters Supporting Approval* (**Appendix 6**). Together, these are the relevant ecological grounds to be considered by this JER.

10. The purpose of this JER is to provide our respective views on the ecological grounds.



Inset 1 – Land Dedication in the south of Lot 801 on SP261302

[5] Planning and Environment Court Appeal No. BD 4300 of 2019PPV Victoria Point Land Pty Ltd v Redland City Council;
[6] Planning and Environment Court Appeal No. 3829 of 2019 (Sutgold Pty Ltd v Redland City Council and Paige Pty Ltd).
[7] Refining and amending it earlier *Reasons for Refusal*.

2.0 Environmental Planning Context

11. The Respondent's grounds are not anchored to any particular planning provisions, but we understand that the following environmental planning instruments were in effect at the time the development application was made. Associated mapping also provides an indication of the Site's ecological values and its likely role as fauna movement habitat in the broader landscape.

2.1 Southeast Queensland Koala Planning Framework

12. At the time the development application was properly made, the Site was included in the Priority Koala Assessable Development Area (**PKADA**) (**Appendix 7**), and the proposed development subject to Schedule 10, Part 10 – Koala Habitat Area of the *Planning Regulation 2017* (**Planning Regulation**). Assessment of Schedule 10, Part 10 reveals that:

    (a) the Site is included in the PKADA on the Koala Conservation Plan Map;

    (b) the Koala Conservation Plan Map shows that the Site supports Koala Habitat Areas; but

    (c) that the Site is designated under the local categorising instrument (the Redland Planning Scheme) as an Emerging Community area. It is not designated for conservation, open space, rural or rural residential purposes; and therefore

    (d) the proposed development is not *Prohibited Development*.

13. Development that is not Prohibited Development can proceed to assessment against Schedule 11 of the Planning Regulation – *Assessment benchmarks in relation to koala habitat in the SEQ Region*. The relevant assessment benchmarks (Part 6 (3) – development in priority koala assessable development area) will be considered by the koala experts in this appeal.

14. **AD** agrees that the Koala experts will consider the benchmarks for the conservation of Koalas, however it my opinion that the impacts of these provisions on the development application's ability to meet the required planning benchmarks should also be assessed as a whole and should be considered within this report. I defer to the koala experts with regards to the potential impact of the proposal on koala ecology. **WM's** view is that this is a matter for the koala experts.

2.2 State Code 16 (Native Vegetation Clearing

15. The Regulated Vegetation Management Map shows that most of the Site (and all the development footprint) is within the Category X designation. The associated Vegetation Management Supporting Map shows that Category B vegetation on Moogurupum Creek is comprised of the Least Concern regional ecosystem (RE) 12.3.6 (**Appendix 8**). More detailed assessment of the remnant vegetation adjoining Moogurupum Creek shows that the mapping is incorrect in areas. The BAAM Report assessed the more expansive Initial Proposal and found that compliance with State 16 could be achieved. This is confirmed by the subsequent DSDMIP approval of 25 March 2019.

2.3 Redland City Plan (Ver 1, 2018)

16. At the time the development application was properly made, the Site was designated Emerging Community Zone under Redland City Plan (Ver 1, 2018) (**RPS**) (**Appendix 9**).

17. The Environmental Significance Overlay map shows that contiguous vegetation along Moogurupum Creek in the Site's east is mapped as MSES. Scattered patches of MLES occur in other parts of the Site (**Appendix 10**). The BAAM Report discussed how the more expansive Initial Proposal achieved compliance with the Environmental Significance Overlay Code.

18. The Waterway Corridors and Wetlands Overlay map shows that an arm of Moogurupum Creek (and a buffer zone) in the Site's southeast is included in the Waterway Corridors and Wetlands designation (**Appendix 11**). The BAAM Report discussed how the more expansive Initial Proposal achieved compliance with the Waterway Corridor and Wetland Overlay Code.

2.4 Wildlife Connections Plan 2018-2028

19. The Redland City Council Wildlife Connections Plan 2018-2028 (**Redlands WCP**) aims to, at a City-wide scale, identify and provide priority actions for the management, enhancement, and protection of core wildlife habitat patches and to facilitate improved connection of wildlife corridors in Redland City.[8]

[8] Refer Executive Summary of document.

20. The Respondent's Reasons for Refusal do not identify conflict with the Redlands WCP, but we understand that the Respondent relies on this document to support its contentions regarding inadequate provision of fauna corridors. The Appellant's position is that the Redlands WCP has not been adopted by Council and should not be given significant weight. Notwithstanding, for the purpose of completeness, it is discussed below.

21. The WCP establishes six classes of corridor ranked in order of ecological value and priority for rehabilitation (**Inset 2**). The occurrence of these corridors in relation to the Site is discussed below:

Table 3 - Definition of Wildlife Habitat Corridor Types

Corridor Type	Definition	Ecological Value	Priority for Rehabilitation
Established	Corridors of particularly high ecological value that hold strong, pre-existing values in providing movement opportunities for wildlife in general.	Highest Ecological Value	Highest Priority for Rehabilitation
Regional Riparian	Particularly significant riparian corridors for biodiversity that form a major element of habitat continuity, as identified in the Biodiversity Planning Assessment (BPA) for the Southeast Queensland Bioregion (EHP 2016).	Highest Ecological Value	Highest Priority for Rehabilitation
Coastal Foreshore	Coastal fringe corridor of the Redland City mainland, Southern Moreton Bay Islands, Coochiemudlo Island and the township areas of North Stradbroke Island. May contain Established, Enhancement or Stepping Stone values.	High Ecological Value	High Priority for Rehabilitation
Enhancement	Corridors that exhibit sufficient ecological value and linkages that would be appropriate targets for strategic enhancement to strengthen Established Corridors.	Medium Ecological Value	Medium Priority for Rehabilitation
Stepping Stone	Corridors of isolated patches of habitat that, while not physically connected, are functionally connected, allowing movement between larger patches.	Less Ecological Value	Lower Priority for Rehabilitation

Inset 2 – WCP Corridor Types

(a) The Site does not form part of an *Established Corridor* connecting *Core Habitat* (**Appendix 12**);

(b) The Site does not form part of a *Riparian Regional Corridor* connecting *Core Habitat* (**Appendix 12**);

(c) The Site does not form part of a *Coastal Foreshore Corridor* connecting *Core Habitat*; (**Appendix 12**);

(d) Enhancement corridors are defined for the eastern, western, and northern portions of the Site (**Appendix 13** – note two scales of mapping provided).

22. **AD –** far from being a very preliminary document the Redlands WCP is a scientifically based, citywide analysis of wildlife corridor locations and plans for future corridors and supports the implementation of the Planning Scheme and in particular it's strategic plan, the Victoria Point Local Area plan and is particularly important to ecological conservation within the Redland's LGA in the absence of identified corridors within the City Plan's environmental significance overlay. AD also notes that identified corridors within this plan have been incorporated into the Council's South West Victoria Point Local Plan[9]. This LAP has been used to inform the retention and treatment of wildlife corridors within the Sutgold Stage 1, PPV and Urbex approvals[10]. It is noted that Redland's WCP Action Plan promotes the identified Enhancement corridors across the application site as the second highest priority for protection and rehabilitation[11].

23. **AD** – Both the western and eastern corridors are identified within the Redlands WCP as, Eprapah Creek Corridor to Kindilan/Days Road - Enhancement Corridor in Known Development Area[12] and Eprapah Creek Corridor to Giles Road Conservation Area – Enhancement Corridor in Known Development Area[13], respectively. Importantly these corridors make ecological sense when reviewed at the site and local scale.

24. **AD** – It is noted that these corridors have been incorporated into Council's South West Victoria Point Local Plan Land Use Zones and that Council have not recognized or adopted the proponent driven VPECSP which redirects the western corridor and conflates its function with recreational and stormwater infrastructure.

25. **WM** – my position in relation to the mapped corridors is provided in Section 4.2.3. My position in relation to the western corridor is provided in Section 4.2.1.3.

[9] Attachment 3: South West Victoria Point Local Plan Land Use Zones
[10] Listed in Section 1
[11] Redland's WCP, Action Plan dot point 3, page 34.
[12] Page 86 Redlands WCP
[13] Page 85 Redlands WCP

3.0 Ecological Investigations

26. Pre-clear regional ecosystem mapping shows that, apart from the riparian zone of Moogurupum Creek (supporting RE12.3.6) and an adjoining area of RE 12.12.14, the Site historically supported RE 12.9-10.4. A review of historic aerial photography found that the Site has been largely cleared since 1970.

27. The BAAM Report was underpinned by vegetation survey[14] and fauna survey of the broader structure planning area. We agree that the BAAM work was sufficient to understand the broad ecological values of the Site. **WM** – Before commencement of the JER, I re-assessed the tree survey at two levels:

    (a) In areas where there is certainty regarding the tree retention outcome,[15] I have re-plotted non-juvenile koala habitat trees (**NJKHT**) with a differential GPS (**Figure 3a**); and

    (b) In areas at the development-conservation interface, where trees may either be retained or lost depending on small changes to the engineering design, I have tagged all trees and had them located by detailed survey (**Figure 3b**). The detailed survey is intended to allow for informed discussion on changes to the development footprint in these interface areas.[16]

28. **WM** - During the course of this JER, **AD** expressed concern in regard to a lack of detail or certainty on a number of issues. The issues, and the manner in which I have attempted to resolve them, are as follows:

    (a) **AD** questioned the capacity of the Moogurupum Creek Conservation Area to support koala offsets when it was already well-vegetated, and in part, mapped as koala bushland habitat. My assessments had, to that date, found that this area supports a mosaic of regrowth forest, with degraded remnant vegetation confined to the edge of the waterway. **Appendix 14** contains a more detailed analysis of this area, and further assessment of its offset capacity. Further discussion on offsets is provided in Section 4.3.1.3.

    (b) The cut/fill engineering design provides a high degree of certainty in regard to tree retention and loss across most of the Site. Trees within the proposed

[14] Including survey of koala habitat trees.
[15] Trees are either well-within the development footprint or well-within conservation areas.
[16] e.g., should a batter slope be replaced with a retaining wall to allow tree retention in a particular area.

Multi-function spine are also (generally) identified for retention or removal. **AD** expressed concern in regard to two issues:

(i) **Figure 6** identifies yellow-shaded trees in the eastern end of the Multi-function spine as "*Potential to be Retained*", and orange-shaded trees as "*Likely to be Removed*". The Appellant has not progressed designs for this area, but I have made recommendations for tree retention in Section 5. The "trees removed" count will include these trees until there is certainty regarding their fate; and

(ii) The Multi-function spine contains three dams. The western-most dam will be filled to allow it and the surrounding areas to be used as park. The remaining dams will also be filled for safety and engineering reasons,[17] but the Appellant proposes that trees on the dam wall be retained. **AD** has expressed concern that the filling will affect the root zone of these trees and cause them to decline over time. I have engaged Independent Arboricultural Services (IAS) to prepare an arboricultural impact assessment and management plan to demonstrate how the trees will be retained (**Attachment 15**). In the time available to prepare this JER, I have not been able to extract the level of detail I had sought from the Arborists to demonstrate how the trees would be retained. However, I have coordinated very similar outcomes elsewhere, and am confident that with further design and assessment, tree retention can be achieved. I have made recommendations for approval conditions in Section 5.

4.0 Assessment of the Issues in Dispute

4.1 Relevant Ecological Issues

29. The Respondent's *Reasons for Refusal*[18] identify three issues that it says justify refusal of the development application:

[17] Because: (i) they present a drowning hazard and are not accepted in open space areas dedicated to the Respondent; and (ii) batters from adjoining roads extend into the dams. The batters cannot be constructed without at least partly filling the dams.

[18] As amended by the *Notice of Position of Respondent.*

(a) Failure to provide and rehabilitate adequate environmental corridors through the Site (Items 2-4 and 17);

(b) Inadequate demonstration that development protects, enhances, manages, and minimises impacts on the environmental values of the Site (Item 5); and

(c) Approving the proposed development would not advance the purpose of the Planning Act 2016 (Item 20).

4.2 Issue 1 – Environmental Corridors

4.2.1 Position of WM

30. The assertion regarding environmental corridors is made at a Site scale,[19] and more specifically in regard to the proposed multi-function spine.[20]

31. The hierarchy of environmental corridors described by the Redlands WCP is discussed in Section 2.4. As noted, the plan defines three corridors for the Site: one along the northern boundary; one along Moogurupum Creek; and one that passes through the western parts of the Site. These are discussed in turn below.

4.2.1.1 The Northern Enhancement Corridor

32. The Redlands WCP identifies the Northern Corridor, which is at present largely cleared (**Figure 2)** as part of the Double Jump Road to Sandy Creek Conservation Area (Priority) Enhancement Corridor. In the course of negotiation for development of the Urbex land to the Site's north, agreement was reached to dedicate a 40m strip on the southern boundary of that particular Site.

33. The Initial Proposal for the (Subject) Site offered a 30m dedication area, but this was increased to 40m in the Amended Proposal. The Amended Proposal also improved the integrity of the corridor by removing development from the northeastern corner of the Site (as sought by the Initial Proposal). I understand that the combined (Urbex-Sutgold) 80m corridor achieves the desired total corridor width (**Figure 4**). The integrity of the Northern Corridor will be further enhanced by dedication of the urban zoned land at the southern end of Lot 801 for conservation purposes.[21][22]

[19] Item 2 - The development fails to provide for east-west and north-south movement of fauna through the establishment of habitat corridors as part of a wider structure plan area.
[20] Item 4 – The proposed multi-function link is not adequate for the safe movement of koalas and other fauna….
[21] Refer discussion AD paragraph X

34. Close examination of aerial photography will reveal that one part of this corridor remains unresolved - the area in the south of 39 Brendan Way[23] where a rural shed sits within land that is a logical extension of the corridor. I have been advised by the Appellant's project manager (and verily believe) that the Respondent has had an opportunity to secure this land, but that the opportunity was not taken (**Appendix 16**). The land is not within the Appellant's control, and the Appellant cannot resolve this situation. However, I understand that there is future opportunity for Council to secure the land through a subdivision of 39 Brendan Way.

35. A road connection between the proposed development and Urbex development crosses the Northern Corridor. A fauna underpass and associated exclusion/directional fencing is required to ensure safe fauna passage along the corridor. Preliminary design by Lambert and Rehbein makes provision for two 2400mm X 3000mm culverts (**Appendix 17**).

36. I consider one culvert of this size sufficient if stormwater can be conveyed underneath the road in a separate pipe that is well removed from the culvert portals. Fauna furniture should be provided, and further design is required to detail the fauna fencing. This detailed design can be the subject of conditions. I provide recommendations for development conditions in Section 5. I understand that the costs for this infrastructure will be shared between the Appellant and Urbex.

37. The Northern Corridor is the first focal area for establishing offsets. The combined Urbex-Sutgold corridor will fill an existing ~500m gap between bushland in the Sutgold Precinct 1 conservation area and Moogurupum Creek Conservation Area. Offsets are discussed further in Section 4.3.1.3.

38. For the purpose of surveillance and establishing "*a connection to nature*" for the residents of the development, paths and breakout spaces will be established at the edge of the corridor. The Appellant's urban designer, Tract has provided a high level concept (**Appendix 18**).

39. The proposed tracks and small breakout areas will not significantly affect the ecological values of the corridor, and do not significantly reduce the space that is otherwise available for offsets.

40. There is a reasonable expectation that residents living beside bushland will want to walk within that bushland. Formal tracks can either be provided in a well-planned and

[22] Refer discussion in WM Paragraph 7
[23] Lot 2 on SP292896

executed manner as part of the proposed development (and at the Appellants expense) or informal, unmanaged tracks can arise over time.

41. Paths and breakout spaces in corridor land were also debated in the Ecology JER for the Sutgold Stage 1 appeal.[24] In Section 4.2.2.1 below, **AD** describes a preference for these features to be located outside of corridor land, but an acceptance for their provision within corridors if very limited and quantified before agreement. In Section 5.2, I have proposed development conditions for paths and breakout spaces that reflect those agreed to in the Sutgold Stage 1 appeal.

4.2.1.2 The Eastern (Moogurupum Creek) Enhancement Corridor

42. To the south of Double Jump Road, the Enhancement Corridor follows the eastern tributary of Moogurupum Creek. After crossing Double Jump Road, the alignment of the Enhancement Corridor deviates to the western tributary, and then follows the common alignment of the creek after confluence of the tributaries near the eastern boundary of the Site. The proposed development maintains a 45-55m buffer to the creek (Moogurupum Creek Conservation Area). The esplanade road provides a favorable management edge to the buffer.

43. Save for a small recreation area near the commercial centre and a path along its edge, the Appellant intends to fully rehabilitate the Moogurupum Creek Conservation Area. The proposed works will, in part, address the proposed development's offset obligation, but significant additional habitat restoration work will also be completed.

44. Stormwater infrastructure is located within the buffer, but as agreed in the JER for the Sutgold Stage 1 appeal, [25] revegetated biobasins can be established in corridors if they are naturalistic and achieve a similar form to the Water By Design Bioretention Technical Design Guidelines (**Appendix 19**).

45. The BAAM ecological advice submitted to date has not identified how the Appellant intends to address the potential for fauna strike at the Enhancement Corridor's crossing point on Double Jump Road. The proposed development will increase traffic movements on Double Jump Road, but this is only a component of the expected overall traffic increase that will occur in the coming years.[26] In this light, consideration needs to be given to whether the works discussed below are creditable trunk infrastructure. This is a matter for others in the appeal.

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[24] Appeal No. 3829 of 2019.
[25] Refer Paragraphs 127 and 114.
[26] Much of which arises from development further afield (e.g., Shoreline).

46. Banks of 3 X 1500mm diameter pipes convey both tributaries of Moogurupum Creek under Double Jump Road. **Plates 1-4** show the pipes and surrounding area of the western tributary. **Plates 4-9** show the pipes and surrounding area of the eastern tributary.

47. The Respondent has provided concept design drawings for the Double Jump Road upgrade from Bunker Road to Cleveland Redland Bay Road. An extract relevant to the Moogurupum Creek section of the road is provided in **Appendix 20**. It shows that a bank of culvert is to be established on the western tributary of Moogurupum Creek, while culverts and an underpass are to be provided on the eastern tributary.

48. My preference is for the fauna underpass to be established on the western tributary, because:

    (a) land on the northern side of the tributary's crossing point of Double Jump Road is under the care and control of the Appellant, and the underpass can be delivered in conjunction with the proposed development; and

    (b) houses are located close to the eastern tributary's crossing point of Double Jump Road (**Plates 8-9**). Clearing and edge effects associated with the houses could reduce the effectiveness of the corridor at this point. The need to maintain bushfire buffers may also limit the potential for habitat rehabilitation.

49. The Appellant's consulting engineer, Lambert and Rehbein, has prepared a concept design for the underpass which makes provision for a bank of three culverts (**Appendix 21**). The central culvert is for low-flow stormwater conveyance. Further design is required to properly establish flood immunity in the dry passage culvert, but it appears the Q2 flood immunity can be achieved. Fauna furniture and exclusion/directional fencing is also required. I make recommendations for development conditions in Section 5.

50. As shown by **Plates 4, 7** and **11**, an 11kv electricity line runs down the northern side of Double Jump Road. This restricts safe provision of other fauna movement infrastructure such as rope bridges and glider poles at this time.

4.2.1.3 The Western Enhancement Corridor

51. To the south of Double Jump Road, the Enhancement Corridor is aligned with the vegetated Lots 7 and 8 on RP79864 (**Appendix 13**). The corridor then crosses Double Jump Road diagonally to incorporate the hoop pine plantation and a small

number of koala habitat trees in the far southwestern corner of the Site, and from here traverses north to take in vegetation around the westernmost dam. However, its intended continuation into Lot 801 on SP261302[27] is blocked by an enclosed dressage arena on Lot 3 SP293881. The arena is shown on **Figure 4**, and at closer scale (with the approximate alignment of the Enhancement Corridor) by **Inset 3**. Habitat connectivity is further affected by an exclusion fence on the southern boundary of the Site on which the arena is located (**Plate 10**).

52. The development application for the arena (MCU17/0110) was made during the life of the Redland WCP. Despite this, there is no indication in the development application material that the Respondent was concerned with the Enhancement Corridor being severed by the arena. The development application was approved on 5 February 2018. Even if the WCP had not been adopted, it is common practice for authorities to consider draft strategies and policies such as this in decision making.

53. In Section 4.2.1.1, I discuss the small shed that is also causing a blockage in the Northern Enhancement Corridor. I note that the Respondent may have an opportunity to resolve this through a future subdivision of the land. That does not seem to be a near-term opportunity for the dressage arena. I also question whether the arena would be relinquished as conservation area in any further redevelopment of the land on which it sits. It would seem that the greater value lay in retention of an undercover (all-weather) dressage arena with stables for agistment, that is close to an urban area.[28] Ultimately, the extent to which the Respondent can be seen to have "given up" on retaining the Enhancement Corridor is a matter for the planners in the appeal.

[27] Land to be dedicated as conservation area as part of the Precinct 1 appeal.
[28] I provide this observation in context of my wife being an adjistee at a dressage arena in Chandler. An arena with stables close to home is valued, because the horse can be visited and ridden more frequently than if the facility is located further afield.

Inset 3 – Approximate Alignment of the Enhancement Corridor Pre and Post Construction of the Dressage Arena

54. The Appellant proposes to provide an alternate connection north in two ways:

    (a) By providing a strong connection to Lot 801 through the Eastern (Moogurupum Creek) Corridor, and then the Northern Corridor; and

    (b) Facilitating fauna movement through the multi-function spine (**Figure 4**).

55. The multi-function spine is intended to serve a number of functions, including stormwater conveyance, local park, and wildlife movement. It will play a secondary role to the major ecological corridors bounding the development to the east and north.

56. The Multi-function spine will provide habitat and movement opportunity for generally urban-adapted species but shouldn't be dismissed as providing habitat for only the most generic of species (possums, magpies, crows, and noisy miners). Implementing the recommendations I provide will see it serve a more diverse group of fauna, including conservation significant species such as koala and grey-headed flying fox. Some species such as Red-necked wallaby may not persist here, but they will remain in the more expansive Northern Corridor and Moogurupum Creek Conservation Area. **AD** has made suggestions for how this might be achieved (with which I agree), and I have recommended that a Macropod Management Plan be prepared (refer Section

5.4.3). The Multi-function spine will provide new or improved habitat for other species (e.g., nectarivorous birds), and improve local habitat connectivity.

57. The Multi-function spine will not provide the degree of habitat connectivity that would be offered by a wider, fully vegetated corridor such as that later proposed by **AD**, but its provision (as an alternate connection northwest) would seem to be acceptable in circumstances where the mapped Enhancement Corridor is already significantly compromised by the 2018 dressage arena approval. As noted above, the planners in the appeal will need to consider this issue further.

58. If the Multi-function spine is to be relied upon as a secondary habitat link, it is important to ensure that its fauna habitat and connectivity values are optimized by careful integration of the stormwater and recreation functions. I propose the following:

59. **Establishing a new (more direct) link north from Double Jump Road to the overland flow path on which the multi-function spine is centered**.

(a) the mapped Enhancement Corridor follows a dog leg path from Lot 7[29] through to the hoop pine plantation in the southwestern corner of the Site. The proposed development seeks to establish a more direct path. The position of the habitat link was chosen on the basis that it contained two large (sentinel) trees that were already likely to be stepping stones for the north-south movement of birds and bats (refer trees 4311 and 4252 on **Figure 5**) (**Plate 12**). The intent was to infill the ~115m gap between these trees with a 35m wide vegetated link (refer cross section C-C on Page 3 of the landscape package (**Appendix 22**), but designs will change in response to **AD's** following proposal.

(b) During the course of the JER, **AD** identified an alternate connection to the northwest that followed an 80 m path in the southwestern corner of the Site (**Appendix 23**). **AD** identified the advantages of his proposal as: (i) no road crossing of the corridor (an issue he takes with the Multi-function spine); (ii) greater opportunity for retention of koala habitat trees; and (iii) greater opportunity for offset planting. I recognised the value in AD's proposal to avoid a road crossing of the Multi-function spine, and so after receipt of the plan liaised with the Appellant's urban designer (Tract) to determine if the Amended Proposal could be reconfigured to achieve a similar outcome. I was

[29] South of Double Jump Road.

provided with the markup shown by **Inset 4**. I support this change. Re-design of adjoining development will be required, and

Inset 4 – Markup of the Amended Proposal showing how the access road and revegetated link can be "flipped" to avoid a road crossing through the part of the Multi-function spine that is most important for fauna movement (source: Tract).

(c) An issue faced by both designs is the potential for road kill at the Double Jump Road crossing point. I saw the link across Double Jump Road as a canopy connection for birds and bats. This appears to be reflected in the Respondent's design plans for the Double Jump Road upgrade, which makes provision for an aerial (rope bridge) connection but no fauna underpass.

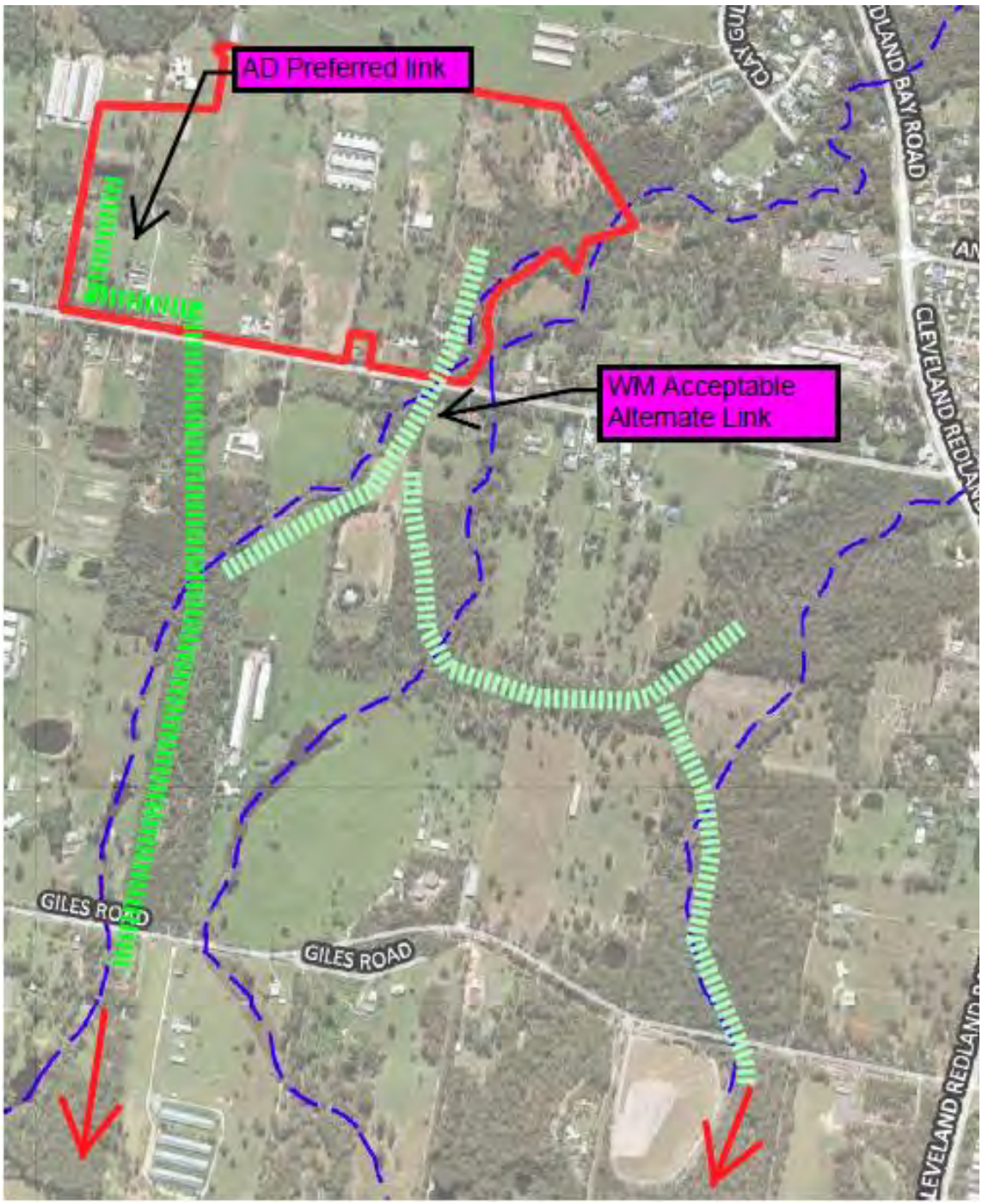
(d) Without an underpass, my concern is that the crossing point will become a focus point for road kill. The ecological consequences of that concern me, and there are reputational issues for the Appellant as well. My preference is for the southern end of the enhancement link to be secured with fauna fencing to restrict terrestrial fauna movement to the south. The Eastern Corridor and dedicated underpass on Moogurupum Creek provide a safe alternative pathway for north-south fauna movement

(e) **AD** identifies that his preferred western connection across Double Jump Road establishes a reasonably continuous link south to Bayview Reserve. That is true, but the Moogurupum Creek connection that I support as an alternative pathway south takes in several large bushland patches on its only slightly more circuitous route to the reserve (**Inset 5**).

(f) I don't seek to dismiss AD's preferred corridor, but rather point out that the Moogurupum Creek corridor provides a viable alternate pathway south that will include fauna movement infrastructure to mitigate terrestrial fauna road kill on Double Jump Road. The Respondent's conceptual design plans for the Double Jump Road upgrade make no provision for an underpass on the western corridor, and my own investigations with the Appellant's engineer, Lambert and Rehbein, indicate that establishing an underpass would be a very difficult exercise.[30] The Moogurupum Creek corridor establishes certainty.

(g) The aerial rope bridge proposed by the Double Jump Road upgrade concept design for this point cannot be delivered with resolving the conflict with the 11 KV powerline on the northern side of the road.

[30] Investigations I completed early in the appeal process.



Inset 5 – Corridors to the South

60. **Maintaining existing native vegetation**

(a) From the elbow of the enhancement link and Multi-function spine (now moved slightly west as per discussion above) the main connection requirement is to the northwest. **Figure 5** shows trees to be retained and removed from this area. Most of the trees to be removed fall within the fill batter of adjoining roads. It would seem feasible to retain most of these trees with refinements to the road alignment and use of retaining walls to avoid batters. If reliance is to be placed on the Multi-function spine for fauna movement, retention of these trees would seem desirable.

(b) AD has expressed concern that it may not be practical to retain trees shown for retention around the dams (which are to be partly filled). The proposal is to fill the westernmost dam to the waterline. I have suggested development conditions requiring more detailed investigation of this issue, and if necessary, amending the engineering design to achieve this outcome.

(c) Conceptually, I envisage that the western dam would still be filled to establish the local park, but it may be necessary to lower the level of filling to retain the trees. IAS provide guidance on tree management to overcome loss of standing water.

(d) In relation to the remaining dams, I propose that a section of the dam adjoining the retained trees is kept as a waterbody and replenished by including it as an online water feature in the overland flow path. Tree management requirements are in part provided by **Appendix 15**, but further design and assessment will be required.

61. **The Local Park, and Pathways through the Multi-function spine**

(a) The Respondent's concerns regarding park infrastructure in environmental corridors was clearly articulated in the Sutgold Stage 1 appeal and is accepted. However, as noted above, the multi-function spine is not an environmental corridor alone; it is an area intended to serve a number of functions (including wildlife movement).

(b) Habitat and corridor values in the multi-function spine can be maintained by retaining and enhancing existing vegetation, strategic positioning and design of new vegetation, and careful attention to landscape detail such as size and

position of retaining walls.[31] Discovery Park at the Brookhaven development, Bahrs Scrub usefully illustrates some of these points (**Plates 13-16**).

(c) Sections A-A and B-B on Page 2 of the landscape package show conceptual design for the local park (**Appendix 21**). I consider the local park an acceptable feature in a habitat link intended to convey urban adapted fauna and consider further refinement a matter for development conditions and detailed design.

(d) I disagree with the Respondent's assertion that the pathways proposed for the multi-function spine will detract from corridor function. The pathways will be low key features that provide for local off-street movement between (for example) the local park and shops, and for nature appreciation. The paths are not veloways or mountain bike trails. In context of the secondary fauna linkage proposed, they are acceptable features.

62. **Positioning stormwater infrastructure in unvegetated areas and designing the basins to allow for revegetation**

(a) In the JER for the Sutgold Stage 1 appeal, there was agreement that revegetated biobasins could be established in corridors if they were naturalistic and achieved a similar form to the Water By Design Bioretention Technical Design Guidelines (**Appendix 19**).[32] The same approach should be adopted in the multi-function spine.

(b) Batter grades should allow fauna to traverse (i.e., not too steep), and the batters should be covered with a sufficient depth of soil to allow for establishment of trees and shrubs characteristic of the pre-clear RE 12.9-10.4.

(c) The low flow path through the multi-function spine should be constructed in accordance with the Brisbane City Council Natural Channel Design Guidelines.[33] The design should ensure that watering points are maintained for fauna. I consider these to be matters for development conditions and detailed design.

63. **By retaining other trees of value**

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[31] Which, if not properly considered, can create barriers to movement to some terrestrial species.
[32] Refer Paragraphs 127 and 114.
[33] https://www.brisbane.qld.gov.au/sites/default/files/ncd_content_executive_summary.pdf

(a) While not contributing to the primary south-northwest linkage at the western end of the multi-function spine, there is a group of Scribbly gums at the eastern end of the spine that are worthy of retention (refer Inset on **Figure 5** and **Plate 17**).

4.2.2 Position of AD

4.2.2.1 The Northern (Priority) Enhancement Corridor

64. The acceptance of an 80m wide corridor is already a compromise on Council's stated desire for these corridors to be 100m[34] and cannot be described as 'desirable'. The 80m wide corridor is already narrower than desired and should be designed to function as a wildlife corridor. It is my opinion that "break out spaces and paths should be located outside of the wildlife corridor and buffer edge effects to these corridors. These impositions were very limited within Sutgold stage 1 and PPV and were quantified before agreement.

65. With the exception of ecology, the "reasonable expectations" of an emerging community designation is outside of my area of expertise. From within my area of expertise, I am of the opinion that wildlife corridors should not be significantly compromised by recreational activities and the impost of these tracks, break out spaces and other passive recreational activities should not be left to the detailed design within the operational works stage where control of such impacts is less certain. Notwithstanding my objection to the conflation of ecological and recreational activities, I think that any proposed impacts to the designated wildlife corridors should be accompanied either by detailed design or quantifiable controls on the degree of impacts (path widths, numbers, location with respect to corridor etc). Without this level of detail, the ability of this application to meet the required benchmarks cannot be adequately assessed. I do not view the sketch provided in Appendix 18 as being adequate.

66. With regard to the acceptance of breakout spaces in Sutgold 1, I note that these were conceded on the basis that the corridor at this point was very wide indeed including large expanses of land west of the creek land that possessed significant development constraints. This is not the case with the northern corridor which is bordered on both sides by roads and houses.

67. There appears to be adequate room for the installation of a functional fauna underpass at the desired location within the northern corridor of the development. I

[34] Environmental Significance Overlay Cide AO 14.1

agree that the final design can be a matter for appropriately worded conditions subject to approval by Council. The room required for this device will impact upon the available space for Koala offsets and needs to be taken into account within the offset calculations.

4.2.2.2 The Eastern Corridor

68. The proposed rehabilitation and supplementary native tree plantings within the eastern corridor do provide some net ecological benefit however it is noted that this area is mostly already protected by State and local government overlays and compensation for the loss of habitat by area is marginal at best.

69. Whilst the location of "naturalistic" Bio-retention basins was accepted in Sutgold Stage 1, the size and location of these basins were presented. It appears that there is disagreement between the stormwater experts as to the final design of the stormwater retention and remediation system and it is of concern in this instance because the size and location of this infrastructure has the potential to significantly impact upon wildlife corridor function. It is not possible to assess whether the proposal can meet the required ecological benchmarks for the retention and rehabilitation of functional wildlife corridors without an adequate level of detail.

70. There is an identified need for an underpass across Double Jump Road at the southern end of the eastern wildlife corridor. It appears that there is adequate room for the construction of a functional underpass within this location. The location and detailed design of this structure should be the subject of conditions and ultimate approval by Council.

71. Again, recreation infrastructure within the wildlife corridors should be limited and the degree of impact established at this stage of approval and not left to the operational works stage with the size, use and location paths and break out spaces and other associated infrastructure quantified. The area taken up by recreation infrastructure should be subtracted from the available space for the accommodation of offsets.

4.2.2.3 The Western Corridor

72. The western corridor is shown with the Redlands WCP[35] as part of the *Eprapah Creek Corridor to Kindilan/Days Road - Enhancement Corridor in Known Development Area*. It is a stated priority outcome of that this corridor "*Provide input*

[35] Redlands WCP page 82

into planning for Emerging Urban Community zoned land north of Double Jump Road"[36].

73. This section of corridor links large patches of habitat in the north of the structure plan area to native vegetation communities immediately south of Double Jump Road that in turn provide an extant functional link to very large natural bushland areas within the Bayview Conservation Park. This linkage is a separate wildlife corridor to that identified in eastern part of the site, which is described as *Eprapah Creek Corridor to Giles Road Conservation Area – Enhancement Corridor in Known Development Area*[37]. I note that proponent driven VPESCP that presents the alternative multi-function spine was not adopted by Council, whilst Council's local structure plan adopts the Redland WCP corridors containing the enhancement corridor running along the western border of the site.

74. With regards to the approval of the dressage arena within the enhancement corridor, it is noted that the WCP was not adopted until late 2017, the Plan starting in 2018. The arena was approved in February 2018. The Council did not resolve to commence a major amendment to City Plan to reflect the principles of the WCP until 10 October 2018. I defer to the planners with regards to likely longevity of this arena within an urbanizing environment.

75. Notwithstanding the imputation of the dressage arena approval on Council's resolve to provide appropriate wildlife corridors I note that the western corridor is now directed to the south of the dressage arena as shown in Figure 3 and links to the corridor presented in Sutgold's Precinct 3 application. Properly rehabilitated and of appropriate width, this corridor would provide the functionality envisaged within the Redland WCP and required through the Strategic plan, zone and overlay codes.

76. The multi-function spine does not provide for a functional wildlife linkage, the inclusion of large areas of open space, Bio-retention basins and tracks significantly compromising functionality. Native species that will persist and move through this environment are not species under threat from urbanization. It is my opinion that the western corridor as presented within the WCP, the South West Victoria Point Local Area Plan and can be established over extant vegetation in the west of the site, where it is mapped. This location would provide a functional link through Sutgold precinct 3, where it is provided for, to large patches of natural bushland in the north of the structure plan area and south to the Bayview Conservation Park. It is my view

[36] Redlands WCP page 82 last line.
[37] Redlands WCP page 85

that the establishment of this corridor is required within Strategic Plan, and Emerging Community and RoL codes within City Plan.

77. **Establishing a new (more direct) link north from Double Jump Road to the overland flow path on which the multi-function spine is centered.** I agree that there is a need to establish a direct link that connects the western corridor to mapped Koala habitat area (KHA) immediately south of Double Jump Road. The current proposal however severely restricts the functionality of this linkage as it is crossed by the Boulevard Rd. The traffic experts have predicted around 2,000 traffic movements through the Boulevard entrance each day, presenting a very real threat to wildlife. The provision of a dedicated wildlife corridor that links the western corridor to the KHA south of Double Jump Road but that does not cross the boulevard entrance would significantly increase the corridors functionality. This 'direct' link could then link to the western section of the current proposed alignment without interruption by a major access road. It is noted that the corridor is shown in the Redlands WCP as skirting the western border of the site through existing native vegetation mapped as MLES in the City Plan.

78. If the corridor were to be located to the west of the Boulevard entrance road, the multi-function spine to the east of this road would then not be required to act as a functional wildlife corridor and could contain all parks, bio-retention basins, open spaces and walking paths necessary.

79. The proposed 35m width of this 'direct' connection is manifestly below the 100m wide corridor proposed within the Redlands WCP and the South West Victoria Point Local Area Plan and falls well short of providing a functional connection. This corridor is also crossed by two roads over a distance of around 50m making the length and width of this connection approximately 35m x 35m. Edge effects that negatively impact on habitat quality will dictate that this is a highly managed parcel of vegetation. Many native fauna species of conservation significance avoid habitat edges and in my opinion this link provides very little effective connectivity or habitat.

80. I have provided a sketched plan that provides an 80m wide corridor that roughly corresponds to the location of enhancement corridor within the WCP (see also inset 1), This corridor links to the Koala Habitat Area south of Double Jump Road and maintains the current proposed linkage west (Appendix 23 & inset 2). Provision of the corridor in this position would avoid the need for the busy Boulevard entrance road to cross the corridor. It would also avoid clearing of mapped MLES, retain more NJKH trees as required under the SPRP and would provide more space for the

accommodation of NJKH tree offset plantings. I make no representations regarding the efficacy of this layout with regard to any other discipline.

81. Tract's proposal to simply switch the road and link does not meet benchmarks that require that the removal of NJKH trees and MLES is firstly avoided and no compelling reason has been provided for this design decision.

82. I agree that death of wildlife crossing Double Jump Road at this point is an unresolved issue. The lack of resolution of this issue is not in my opinion a reason to disregard the provision of a corridor at this point. It is possible for the issue to be resolved in the future. I agree with WM that until a solution is provided the corridor should be fenced to prevent fauna that are vulnerable to vehicle strike from crossing at this point. The corridor will still function for more mobile species such as birds and bats.

83. **Maintaining existing native vegetation -** I am skeptical of the shown retention of a large group of trees that currently fringe the Dam on the western extremity of the Spine (**Figure 5**). The filling of dams often leads to the death of surrounding trees and more detail is required regarding the ability to retain these trees. I was not provided with the IAS report in a timely manner and have had no opportunity to seek the expert opinion of an arborist or review this document in detail. In my opinion this matter remains unresolved until Council can review the IAS report. These trees are nearly all NJKH trees and their future needs to be known so that the quantum of offset can be accurately calculated. I do not think that these are matters for development conditions because the proponent needs to demonstrate that it can meet the direct offsets required for koala habitat under the State Offsets Policy[38], noting that this application already proposes to remove mapped koala bushland (now Koala Habitat Area[39]) within a PKADA (now Koala Protection Area) an action not contemplated under the contemporary and current Planning Regulation 2017, Schedule 11.

84. **Impact of the Boulevard Road** – The traffic experts have estimated that there will be an average of 2,000 daily traffic movements along the Boulevard Rd. This number of traffic movements has the potential to significantly impact the corridors functionality and location of the corridor or road so that they do not cross would provide a solution that is more likely to be able to meet the required benchmarks within the Strategic framework, zone and overlay codes.

[38] Queensland Environmental Offsets Policy (Version 1.4) at the time of application
[39] Nature Conservation and Other Legislation (Koala Protection) Amendment Regulation 2020

85. **Design of the Local Park and Pathways through the Multi-function Spine** - The local park in Sutgold Stage 1 is marginally located to provide a sympathetic buffer to the corridor which runs in an east-west direction, immediately north of the park and relies on land on the "Paige development application area" (Lot 23 on RP86773)[40] to provide for wildlife movement. If the western corridor were to be established as a functional wildlife corridor to the west of the Boulevard Road the park could be constructed within the balance of the multi-function spine to the east without having to compromise corridor functionality. The location of the local park within an identified wildlife corridor will significantly impact the functionality of the corridor and in my opinion does not meet the benchmark requirements to provide for functional wildlife corridors.

86. I disagree with **WM** that habitat and corridor values in the multi-function spine can be created/maintained by the current application but this disagreement may arise through a different view on the required function of this corridor. It may be possible to convey urban adapted fauna through parks and across paths but in my view these species are not the focus of these corridors. It is my view that this corridor is required to convey species that do not readily move through such spaces.

87. **Positioning stormwater infrastructure in unvegetated areas and designing the basins to allow for revegetation** – The size and position of the stormwater detention basins needs to be established before their impact on the wildlife corridors can be assessed. Without this information it cannot be established if the required benchmarks can be met. It may not be possible to condition their construction in a manner that allows these benchmarks to be met, leaving council with a more meagre set of controls at the operational works stage. I note that the size, number and location of storm detention and amelioration infrastructure were provided within the Sutgold Stage 1 application before agreement was reached.

4.3 Issue 2 – Adequate Protection and Management of Ecological Values

4.3.1 Position of WM

88. The assertion is that the Appellant has not demonstrated that the proposed development adequately protects, enhances, manages, and minimises impacts on the environmental values of the Site. The discussion below describes the steps the

[40] Paige Pty Ltd v Redland City Council (Planning and environment Court Appeal) 2893/2020

Appellant has taken to sequentially **avoid impacts**, then **mitigate impacts**, before finally proposing **offsets** to address **residual impacts**.

4.3.1.1 How Impacts have been Avoided

89. Historically, the development footprint supported scribbly gum woodland. That vegetation type has been almost completely cleared, and the Site now supports (generally) scattered trees over pasture. **Figures 3a-3b** show the occurrence of sclerophyll trees. Vegetation adjoining Moogurupum Creek in the Site's east is more contiguous but is generally young regrowth with few trees of any significant stature (further discussion is provided in **Appendix 14**)

90. The environmental significance overlay map assigns areas adjoining Moogurupum Creek to the MSES designation (**Appendix 10**). The Amended Proposal will maintain most of this vegetation and then consolidate it through offset planting and rehabilitation (**Figure 6b** and **Appendix 14**).

91. An area of MSES projecting northwest from Moogurupum Creek falls within the development footprint. The Appellant's Initial Proposal retained much of this vegetation in Open Space separating two development precincts. However, I considered consolidation of development and conservation precincts a better overall outcome, and the Appellant made this change in the Amended Proposal (**Inset 3**). I understood that the Respondent supported this change. If impact on this area is a concern, then consideration could be given to reverting to the Initial Proposal.

92.

Inset 3 – Impact on MSES designation in the Site's northeast

93. The development footprint supports more scattered vegetation that is assigned to the MLES designation on the environmental significance overlay map (**Appendix 10**). The mapping overstates ecological values in some areas and understates it in others. The site-based tree survey provides a more accurate representation of ecological values.

4.3.1.2 How Impacts will be Mitigated

94. To this point, impact mitigation has been discussed in regard to the Site's environmental corridors (i.e., increasing corridor functionality and reducing threats to movement along the corridors - refer discussion in Section 4.2, and recommendations for conditions in Section 5).

95. Restricting clearing to only areas in which development is imminent (rather than clearing the Site in one event) will allow a more measured spatial reorientation of displaced fauna. Progressing development across the Site in a development front rather than allowing fragmented development parcels that isolate habitat between construction areas is also beneficial. These are issues that can be considered and resolved at the operational works stage.

96. It is standard practice for a fauna spotter-catcher to oversee clearing of development sites. This requirement should be imposed as a condition of development consent.

4.3.1.3 Addressing the Residual Impact through Offsets

97. Based on the current level of design and detail, the proposed development will result in loss of 825 non-juvenile koala habitat trees. At the mandated 3:1 offset ratio this establishes an offset obligation of 2,475 koala habitat trees.

98. Offset planting density has been a matter of debate in this JER. **AD's** preference is for koala habitat tree planting density to be based on the combined occurrence of koala habitat trees in the emergent, canopy and sub-canopy layers of the pre-clear regional ecosystem underlying the planting area (**RE planting model**). For the Site's three regional ecosystems, planting density would be: (i) 483 trees / hectare for RE 12.9-10.4; (ii) 1,336 trees / hectare for RE 12.3.6; and (iii) 1,547 trees / hectare for RE 12.12.14.

99. My preference is for a more consistent koala habitat tree planting density of 625 trees / hectare over all regional ecosystem types (**4m spacing model**). This is because: (i) the Respondent has accepted this planting density in relation to koala habitat offsets elsewhere;[41] and (ii) it does not establish high density *cheek-by-jowl* planting that will substantially thin as the planting area matures, thereby causing loss of offset trees.

[41] Appeal No. 2171 of 2018 (Wigan v Redland City Council), in which offsets for RE 12.9-10.4 were required.

The fairness of my 4m spacing model is represented by the offset capacity numbers provided in the following discussion, which as shown, seek to accommodate 1,213 less offset stems in the available planting area than could be achieved by the RE planting model.

100. Under the 4m spacing model: (i) **Figure 6a** shows that the Northern Corridor will support 1,413 offset trees; and (ii) **Figure 6b** shows that the Moogurupum Creek Conservation Area can support a further 1108 offset trees. The total offset capacity (2521 trees) exceeds the koala habitat tree offset requirement (2,475 trees). This calculation takes into account the Stage 1 offset planting area already proposed for establishment in the Moogurupum Creek Conservation Area.

101. **AD** contends that areas mapped as Medium Value Bushland Habitat (for Koala) in the Moogurupum Creek Conservation Area might not be suitable for offsets. However, analysis provided in **Appendix 14** demonstrates that at least part of the mapped bushland habitat area could have been amended to rehabilitation habitat through the map amendment process. These areas either lack any native vegetation or are dominated by native vegetation that contain no or only very few koala habitat trees. Secondly, the Offsets Policy (version 1.4) does not exclude offsets being established in bushland habitat areas if the offsets enhance the quality of the bushland within the local government area. My assessment adopts a conservative position on offset planting capacity

102. While other land could be sought to accommodate the offset planting, it seems illogical to do so when there is capacity to benefit the koala population directly affected by the proposed development by focusing offset efforts within the development site on Moogurupum Creek.

103. **AD** expresses concern that the final offset obligation is being deferred to the Operational Works stage. This is correct to some degree, as it is for all development at this stage of planning. It is only at the Operational Works stage when all engineering design has been resolved that there is certainty on tree retention and loss. Even then, my experience is that some changes will occur. Overall, this is a reasonably well-resolved design, and I would not expect significant additional loss of koala habitat trees beyond that identified by **Figure 5**.

104. There will be some minor loss of offset capacity in conservation areas and corridors due to pathways and other minor infrastructure, but I have also adopted a conservative position on the offset capacity of these areas.

105. Otherwise, issues regarding impacts to koala and compliance with applicable koala provisions are matters for the koala experts in this appeal.

106. PO18 of the Environmental Significance Overlay Code requires offsets to be provided for a Significant Residual Impact (**SRI**) on MLES. Planning Scheme Policy 1 (**PSP1**) provides relevant guidance.

107. Section 1.6.1(6) of PSP1 identifies that "*generally, MLES can be described as habitat for particular species (refer to 'locally significant species in Appendix 1)*". The vegetation mapped as MLES at the Site either: (i) does not support the identified flora MLES; or (ii) does not provide habitat for the identified fauna MLES. Therefore, loss of these MLES areas would not cause an SRI for the identified locally significant species.

108. Section 1.6.1(8) of PSP1 identifies that "*some areas mapped as MLES in the overlay map may be found to have the attributes of MSES following more detailed investigation*." This would seem to apply to the Site's non-juvenile koala habitat trees, establishing an offset obligation for their loss. However, the *Environmental Offsets Act 2014* prohibits an offset condition being imposed where an offset has already been imposed for the same impact on the same environmental matter.[42] This establishes that no further offset obligation applies for impacts to mapped MLES.

109. While there may not be a formal offset requirement for MLES, it is clear that consolidation of (currently disaggregated) MLES areas, and other mitigation measures associated with the proposed development, will deliver benefits for MLES species. The benefits arise through: (i) habitat consolidation, which minimises the impact of habitat fragmentation and edge effects; (ii) improved habitat connectivity through rehabilitation and establishment of new vegetation, and mitigating other threats to movement (e.g., road kill); and (iii) long term protection in Council conservation estate.

4.3.2 Position of AD

4.3.2.1 How Impacts have been Avoided

110. Whilst WM asserts that the development will maintain the 'great majority' of the Moogurupum Creek corridor it is notable that a large area of mapped MSES, also mapped Koala Bushland under the SPRP and KHA under the current Koala plan is proposed to be removed from the corridor (**Figure 2 of Appendix 14**).

[42] s14(2).

111. It is relevant that at the time of application (09/10/2018) Schedule 11, Section 6, Part 3 (a) did not allow for the clearing of NJKH trees within a koala bushland habitat area and directed that clearing of NJKH trees was avoided within a rehabilitation area. In my opinion this is a strongly stated and high benchmark, and it is important that these impacts are correctly addressed through the overall assessment of this application's impact on koalas and wildlife habitat more broadly. I defer to the Koala experts on the impacts to koala ecology.

112. It is my view that impacts to NJKH trees and mapped MLES within the western margin of the site have not been avoided and justification for removal of these values has not been provided. The alignment of the multi-function spine appears to be the result of convenient engineering rather than a sound ecological decision-making process.

113. With regards to assessing the impacts on koala habitat and NJKH trees, there is too much ambiguity regarding tree retention over the site, WM leaves the retention of trees around the western dam to be determined by an arborist, a report which I have not had the opportunity to review adequately. It is important that these numbers are firmly established as offsets for these trees should be acquitted through direct planting off dedicated offset areas, preferably within the site. I discuss the acquittal of appropriate offsets in **Section 4.3.2.3**.

114. The treatment of the western corridor, quantification of space taken up by paths, break out spaces, the number, size and location of Stormwater infrastructure does not provide adequate assurance that benchmarks for the provision and enhancement of functional wildlife corridors can be met.

4.3.2.2 How Impacts will be Mitigated

115. In my view the mitigation of impacts through the provision of functioning wildlife corridors has not been sufficiently demonstrated considering the required benchmarks and local wildlife corridor planning presented. The proposed increase in corridor functionality and reduction of threats to movement along the corridors is insufficient and compromised by the conflation of stormwater detention and amelioration infrastructure, recreational parks and paths and major road crossings.

4.3.2.3 Addressing the Residual Impact through Offsets

116. The offsetting of NJKH trees is a State level benchmark and it is my opinion that 4m spacings are not acceptable. The State generally planting densities to reflect the Tree 1 and 2 densities within the Herbarium's technical description for the relevant regional ecosystem. In this instance, the combined average density of T1 and T2 for

RE 12.9-10.4 is 483 trees/ha. Whilst higher density plantings may be judicious for encouraging early canopy closure and therefore lower maintenance, they cannot be relied on to acquit the offset liability for a State significant residual impact.

117. The use of mapped koala bushland to accommodate offset plantings, whilst allowed under version 1.4 of the State's offset Policy, is only permitted in cases where no other suitable rehabilitation areas are available. With respect to this application, there is an abundance of land mapped as medium value rehabilitation and every effort should be made to accommodate the full quantum of offsets required outside of areas already protected by the environmental significance overlay.

118. It is also noted that not all of the area within the Moogoorumpum Creek corridor is mapped as a Koala Habitat Restoration area and areas outside of this mapping should not be included within the calculations of available area for offset plantings.

119. I am also of the opinion that avoidance of impacts to NJKH trees has not been adequately demonstrated. If located where it is mapped in the WCP and suggested in inset 2 the western corridor would protect a number of extant NJKH trees and if provided at the appropriate 80m width would also provide NJKH tree planting space, outside of already mapped MSES areas. These plantings would both offset the loss of NJKH trees elsewhere on the site and provide for a meaningful ecological corridor where one is intended.

120. It is my opinion that the full quantum of NJKH trees to be removed by this application has not been quantified and that the final offset obligation should be deferred to the operational works stage. It is, in my view, incumbent upon the appellant to demonstrate that it can acquit it's offset obligation in order to demonstrate that it can meet the required ecological benchmarks. This is particularly important with regards to koala offset within SEQ because Section 2.3.1.6 of the offsets policy does not allow for financial offsets and prioritizes local offsets.

121. With regards to impacts and offsets to mapped MLES I disagree that this is substantially the same matter as offsets for Koala. The Koala is not listed in Appendix 1 of the PSP and therefore it is not a MLES. This proposition is further supported by the fact that the PSP describes koala habitat as areas of remnant and regrowth vegetation and maps all as MSES. It is my opinion that offsets for loss of MLES should be provided on an area basis and not by other indirect benefits.

122. It is my opinion that offsets for the removal of MLES are in addition to offsets for Koala. I do not agree that mapped areas of MLES can be dismissed as not being

habitat for locally significant species and therefore not offset. The mapped areas of MLES contain native vegetation and should in my view be offset at 3:1 in addition to the Koala offsets.

123. My misgivings regarding the total quantum of trees to be removed, lack of avoidance of impacts to NJKH trees and the use of areas already 'protected' to accommodate offsets aside I have had the opportunity to review the Moogurupum Creek offsets document presented in **Appendix 14** and find that management recommendations and assumptions regarding planting densities are acceptable. It does not however allow for areas needed to accommodate the fauna underpasses, paths, break out spaces and areas outside of the koala habitat restoration areas mapping.

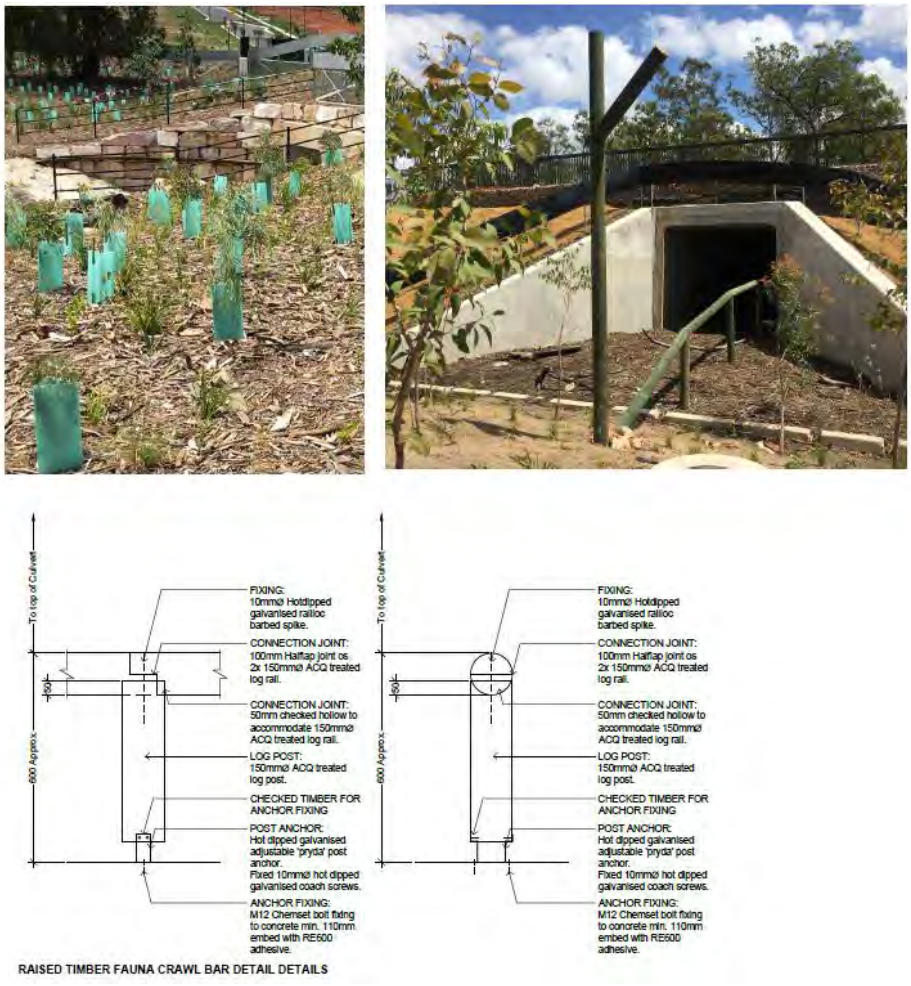
5.0 Recommendations for Approval Conditions (WM)

124. If the Court decides to approve the proposed development, conditions could be imposed that reflect the following recommendations.

5.1 Regarding Fauna Movement Infrastructure

5.1.1 Northern Corridor

125. The road connection between the proposed development and Urbex development crosses the Northern Corridor. Preliminary design by Lambert and Rehbein makes provision for two 2400mm X 3000mm fauna underpass culverts (**Appendix 17**). One culvert of this size is sufficient to provide fauna passage if stormwater is conveyed via a separate (well-separated) pipe. It is important that the design ensures that the approaches to the underpass do not become boggy land. The culvert is to contain "fauna furniture" (**Inset 4**).



Inset 4 – Fauna furniture for underpasses

126. Fauna exclusion / directional fencing must be provided to direct fauna to the underpass. An indicative location is shown on **Appendix 17**; and

127. Cost sharing is to be determined between the Appellant and Urbex.

5.1.2 Eastern Corridor

128. A dedicated fauna underpass is required for Double Jump Road. The Appellant has prepared a concept design for an underpass on the western branch of Moogurupum Creek (**Appendix 21**). The design includes a low flow channel and Q2 flood immunity for one of the dedicated dry passage culverts. Both dry passage culverts should achieve this minimum immunity. Further detail is required to demonstrate how the culvert approaches utilise high ground adjoining the waterway rather than swampy land associated with the waterway. Further detail is also required on revegetation around the approaches. Fauna furniture should reflect the design shown by **Inset 4**;

129. Fauna exclusion / directional fencing must be provided to direct fauna to the underpass. Its location is to be resolved at the Operational Works stage; and

130. The existing set of pipes create a significant “drop-structure” on the downstream side of the crossing, restricting fish passage along the creek (**Plate 2**). As this branch of the creek is identified as a Qld waterway for waterway barrier works, the design will need to align with the *Accepted development requirements for raising or constructing waterway barrier works*. Alternate designs may require approval from the Department of Agriculture and Fisheries. The works offer an opportunity to resolve this barrier to fish passage.

5.1.3 Western Enhancement Link

131. As discussed in Section 4.2.1.3, my preference is that the southern end of the enhancement link connecting to Double Jump Road is fenced to exclude terrestrial fauna from the road corridor. I recognise that this limits north-south movement of terrestrial species through this area, but opportunities for this movement will be provided at Moogurupum Creek.

5.2 Regarding Recreation and Stormwater Infrastructure in Corridors

132. A high-level design plan has been prepared to show proposed paths and breakout spaces on the edge of the Northern and Eastern corridors, and in the Multi-function spine (**Appendix 18**). In order to provide the certainty sought by **AD**, I propose that:

(a) Paths in the Northern and Eastern Corridors be limited to a single 3m wide formed path within an overall footprint no greater than 4m wide. The 0.5m either side of the path is a step off zone where pedestrians can move if encountering bikes.

(b) Breakout spaces in the Northern and Eastern Corridors should not exceed the number shown by the conceptual design. They must be located in cleared areas, but those in the Northern Corridor can be located in the shade of existing trees if tree protection zones are not affected. Features contained in the breakout spaces must be naturalistic and compatible with corridor functionality. To assist **AD** to understand the potential quantum of impact, I have nominated the breakout spaces as 20m^2 in area. However, given the desire to establish forage habitat for Red-necked wallaby at the edge of the corridors, it may be that this area increases. Further discussion is provided in Section 5.4.3.

(c) In the Eastern Corridor, an outlook point is to be established to the north of the southern detention basin. It is intended to be a sensitively positioned, naturalistic feature accessed from the commercial centre. The feature must be located in existing cleared land, and as close to the edge of the road as possible (but recognising that some incursion will be required to achieve the desired environmental "feel"). The overall incursion should be no more than 10m.

133. Stormwater biobasins will be located near the esplanade road in the Eastern Corridor. As agreed in the JER for the Sutgold Stage 1 appeal, revegetated biobasins can be established in corridors if they are naturalistic and achieve a similar form to the Water By Design Bioretention Technical Design Guidelines (i.e. fully revegetated) (**Appendix 19**). Stormwater biobasins should be designed to allow free fauna movement across the basin footprint. I disagree with **AD's** assessment of the stormwater basins as providing potential boggy habitat. The floor of the basins contains a sandy filter media that allows water to drain quickly, leaving a reasonably dry area that I would not regard as boggy.

5.3 Regarding the Multi-function spine

134. The “flipped” entry road / enhancement link design depicted by **Inset 2** should be adopted.

135. Engineering design should be refined to allow considerably greater retention of trees at the edge of the Multi-function spine that fall within road batters;

136. More detailed design is required in regard to the filling of dams. Changes to the engineering design may be required to achieve this outcome. Conceptually, the western dam can still be filled to establish the local park, but the level of fill must ensure that trees are retained. IAS recommendations is regard to a watering program must be adopted. For the remaining dams, a component of the dam should be retained as a waterbody replenished by the proposed overland flow path.

137. Stormwater biobasins should be fully revegetated (refer Water By Design Bioretention Technical Design Guidelines (i.e. fully revegetated) (**Appendix 19**), and designed to allow free fauna movement across the basin footprint.

138. The group of Scribbly gums identified in **Figure 5** and **Plate 17** should be incorporated into the park design for this component of the Multi-function spine.

139. As detailed design progresses, a strong commitment to retention of existing vegetation must be shown, and opportunities for new planting (e.g., along the natural channel) maximized. The Appellant has achieved good natural channel design revegetation outcomes on similar scale at nearby Gordon Road, Redland Bay (**Plates 18-20**).

5.4 Regarding Detailed Management Plans

5.4.1 Vegetation Management Plan

140. The Appellant should prepare a vegetation management plan that ensures engineering design is coordinated with vegetation retention requirements. Opportunities for additional vegetation retention should be identified wherever possible.

5.4.2 Fauna Management Plan

141. Clearing on a stage-by-stage basis should be investigated. This will allow a slower spatial reorganization of displaced fauna. Other novel means that achieve a similar outcome could also be considered.

142. The Appellant should prepare a fauna management plan to be implemented by the fauna spotter-catcher. The management plan must ensure that clearing requirements of the *Nature Conservation (Koala) Conservation Plan 2017* are implemented.

143. As is standard practice, a spotter catcher should oversee any clearing.

5.4.3 Macropod Management Plan

144. Red-necked wallaby uses the Site's densely vegetated areas for cover and moves out into open grassed areas to forage. The proposed development will increase cover habitat but reduce forage habitat. During the course of this JER, **AD** has identified the need to prepare a Macropod Management Plan to identify:

(a) the need for exclusion fencing between cover habitat and roads; and

(b) how forage habitat could be incorporated into the open space corridors. The provision of open grassy (forage) areas will come at the expense of koala habitat planting, but there is capacity within the planting model to absorb this loss. Further, small, grassed areas near the edge of the corridors compliments the Appellant's desire to establish paths and small breakout spaces in these areas. There is a balance to be achieved between the primary conservation outcome for the corridors and provision of the paths and breakout spaces. This negotiation can proceed as is presently occurring for the Stage 1 Operational Works application.

(c) small gaps at the edge of conservation areas will not (if well-planned) create an impediment for koala or other species.

5.4.4 Offset Management Plan

145. An offset management plan should be prepared in general accordance with the analysis provided in Section 4.3.1.3 of this JER.

5.5 Position of AD

146. In general, I agree with WM with respect to the basic design parameters of both underpasses. The conditions should reflect that the approval of the final design rests with Council.

147. I agree that the western corridor should be fenced at its juncture with Double Jump Road until safe wildlife crossing can be facilitated.

148. I note that the provision of 4m wide paths on the edge of wildlife corridors reduces their width and they cannot be described as 80m wide. The further provision of breakout spaces would reduce the functionality of these corridors even further. I do have a philosophical objection to depicting these corridors as being of a certain width when they are quite clearly not. The size and location of paths/bikeways and the accommodation of breakout spaces should be entirely at the discretion of council. In my view an approval should not be given that implies that there is a "right" to their inclusion should Council deem that they unacceptably impact of wildlife corridor functions.

149. I caution against the inclusion of an ill-defined outlook point that intrudes into the corridor 10m. Again, this is park infrastructure. It is located next to a bioretention basin, within a narrow section of the corridor, close to the creek line. This combination will create a constriction in functional corridor width that appears unnecessary. The approval of any such space should be entirely at Council's discretion and the area removed from available offset area calculations.

150. The inclusion of bioretention basins within the wildlife corridor require more detail before assessment of their inclusion can be made. These structures have the potential to impact on the provision of fauna habitat and corridor functionality and more detail on their size, location and operation is needed before their impacts can be assessed. I do not view this as a matter that can just be conditioned.

151. I agree that there is a need for more detail regarding the treatment of dams and the likelihood of NJKH tree loss. Approval of this work should occur at this stage in the process so that it can be established that benchmarks to avoid the loss and appropriately offset the impact to NJKH trees can be assessed.

152. I agree with the recommendation for the inclusion of a Macropod management plan and the conclusion that some low level recreational spaces may be accommodated that also facilitate the primary conservation outcome by providing forage areas for

Red-necked Wallabies and to a lesser extent Swamp wallabies. Long-term management of these areas (Frequency and height of slashing and watering regimes) will need to be established to maintain feeding resources. Approval of the Macropod Management Plan, including it's impacts on corridor design should rest with Council.

6.0 Areas of Agreement and Disagreement

6.1 Areas of Agreement

153. Adequate ecological survey has been completed to understand the ecological values of the Site, and to determine that residential development of the form *generally* proposed is acceptable. AD reservations are articulated in Section 6.2.

154. The mitigation measures proposed by **WM** are in part acceptable to **AD**. **AD** notes the shortcomings in Section 6.2

155. The Northern Corridor and Moogurupum Creek Conservation Area are appropriate areas to establish offset planting. AD's reservations regarding offset planting are articulated in Section 6.2.

6.2 Areas of Disagreement

156. In regard to the form of the proposed development:

(a) **AD** contends that an 80m wide western corridor should be provided to link vegetation south of Double Jump Road to the westernmost dam. **WM** contends that it is difficult to establish the western corridor as a fully functioning corridor, because the crossing point on Double Jump Road remains unresolved (and does not appear to be readily resolvable). **WM** proposes that the multi-function spine and enhancement link south to Double Jump Road will provide a secondary connection south for birds and bats. **WM** proposes that the primary movement pathway south for all species is the Moogurupum Creek corridor, which resolves the threat of fauna strike on Double Jump Road by providing a double-sided underpass beneath the road. **AD** contends that the unresolved issue regarding a fauna underpass for the western corridor is no reason not to provide this wildlife linkage, a resolution is likely in the future. Both the western and eastern wildlife corridors are necessary and achievable.

(b) **AD** expresses concern at the lack of corridor functionality that can be attributed to the Multi-function Spine. **WM** agrees that the Multi-function spine does not provide the corridor function that a wider fully vegetated corridor would, but notes that it will provide value for more than the most generic of species (possums, noisy miners etc). With considered design, it will improve values over what currently occur, and provide local value habitat for a number of conservation significant species. AD disagrees that the Multi-function spine will provide meaningful habitat for conservation significant species and is of the opinion that possums and noisy miners do not need wildlife corridors to persist in the urbanising environment proposed.

(c) **AD** highlights the loss of land mapped as MSES in the northeastern corner of the Site as an area of concern. **WM** notes that this area was included in an open space conservation corridor under the Initial Proposal, but fell into the development area after a change was made to consolidate conservation areas in the northeastern corner of the Site with other ecologically sensitive land. The affected area of MSES is largely comprised of very young koala habitat trees. Despite this impact, **WM** says that the Amended Proposal strikes the better balance. However, the Appellant could choose a return to the Initial Proposal, which still achieves an acceptable outcome. AD contends that changes from an originally unacceptable proposal should not be used as support for the amended proposal. The possibility of the retention of both the mapped MSES area earmarked for removal and rehabilitation of the cleared area that bifurcates the corridor has not been considered. The fact that the area is largely comprised of young koala habitat trees confirms that it is appropriately mapped.

157. In regard to offset area capacity and suitability

(a) We have approached the offset capacity of the Site's offset areas in different ways. **AD** utilises a method that combines the density of koala habitat trees occurring in the emergent, canopy and sub-canopy layers of the pre-clear regional ecosystem for the land on which the offset planting is to occur (RE planting model). **WM's** preference is to establish offset planting at a consistent 625 trees/hectare (4m spacing model).

(b) While **WM** recognises that **AD** approach is commonly used, here it establishes quite a significant difference in the planting density of adjacent offset units. For example, offset areas planted at the RE 12.9-10.4 density of 483 trees/hectare would be established next to areas planted at 1,547 trees/hectare (the RE

12.12.14 density). The high-density *cheek by jowl* planting of the latter areas would, in WM's view, lead to loss of a significant number of offset trees as the planting area matures.

(c) **WM** - my (4m spacing) proposal adopts a planting density that is generally accepted by Councils in South East Queensland, including the Respondent for a nearby planting area. The fairness of my proposal is reflected in the offset capacity calculations derived for the Moogurupum Creek Conservation Area, which show that 1,213 fewer trees would be established in the available planting areas than under the RE density model (i.e., I seek to avoid cheek by jowl planting that would lead to future offset tree loss through competition).

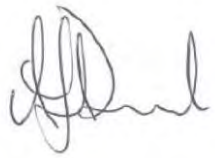
(d) **AD** contends that areas mapped as bushland habitat for koala in the Moogurupum Creek Conservation Area should not be used for offsets. **WM** notes that the applicable offsets policy does not prohibit this outcome, but recognises that it is an issue that needs to be approached with common sense and with the principle of "additionality" in mind.

(e) **WM** notes that his assessment of the Moogurupum Creek Conservation Area found that significant components of the mapped bushland lacked koala habitat trees, or supported only low densities of such trees, and were otherwise degraded. Removing weeds and providing infill planting of koala habitat will clearly provide a very strong uplift in value for koala and other native species. Areas in which there was strong regeneration of koala habitat trees, or where only minor works would be required to achieve such regeneration, were deemed unsuitable for offsets by **WM**. **WM** has adopted a conservative position regarding the offset capacity of the Moogurupum Creek Conservation Area.

(f) **AD** contends that whilst rehabilitation and planting within the eastern corridor may be achievable it does not meet the primary benchmark that impacts to NJKH trees are firstly avoided and that rehabilitation within mapped koala bushland should be the last resort when offsetting these impacts. The removal of Koala bushland within a PKADA was not contemplated at the time of application and it is my opinion that it's removal is a large concession that shouldn't be balanced by improvements made to an already protected area. Furthermore, it is notable that this eastern corridor is to contain offsets for impacts to Sutgold stage 1 – further reducing the direct benefits accommodated within this application.

(g) **AD** suggests that the retention of NJKH trees within my proposed western corridor and planting of clear areas mapped as medium value rehabilitation for

koala would go some way toward achieving the balance between impacts and offset. The provision of this western corridor as a functional wildlife corridor that provides movement opportunities and habitat for conservation significant species would assisting City Plan benchmarks.

	
Dr Andrew Daniel	Wayne Moffitt

Date: 18 September 2021

Figures, Plates, and Appendixes

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Figure 2 – Site Context
Figure 3 – General Vegetation Survey (excluding Development Interface)
Figure 4 – Vegetation Survey (Development Interface)
Figure 5 – Habitat Connectivity
Figure 6(a) - NJKHT Offset Planting
Figure 6(b) – Offset Planting Moogurupum Creek Conservation Area

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Appendix 1 – CV's
Appendix 2 – Initial Proposal
Appendix 3 – Amended Proposal
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Appendix 6 – Appellant's Reasons
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Appendix 8 – Regulated Vegetation Mapping
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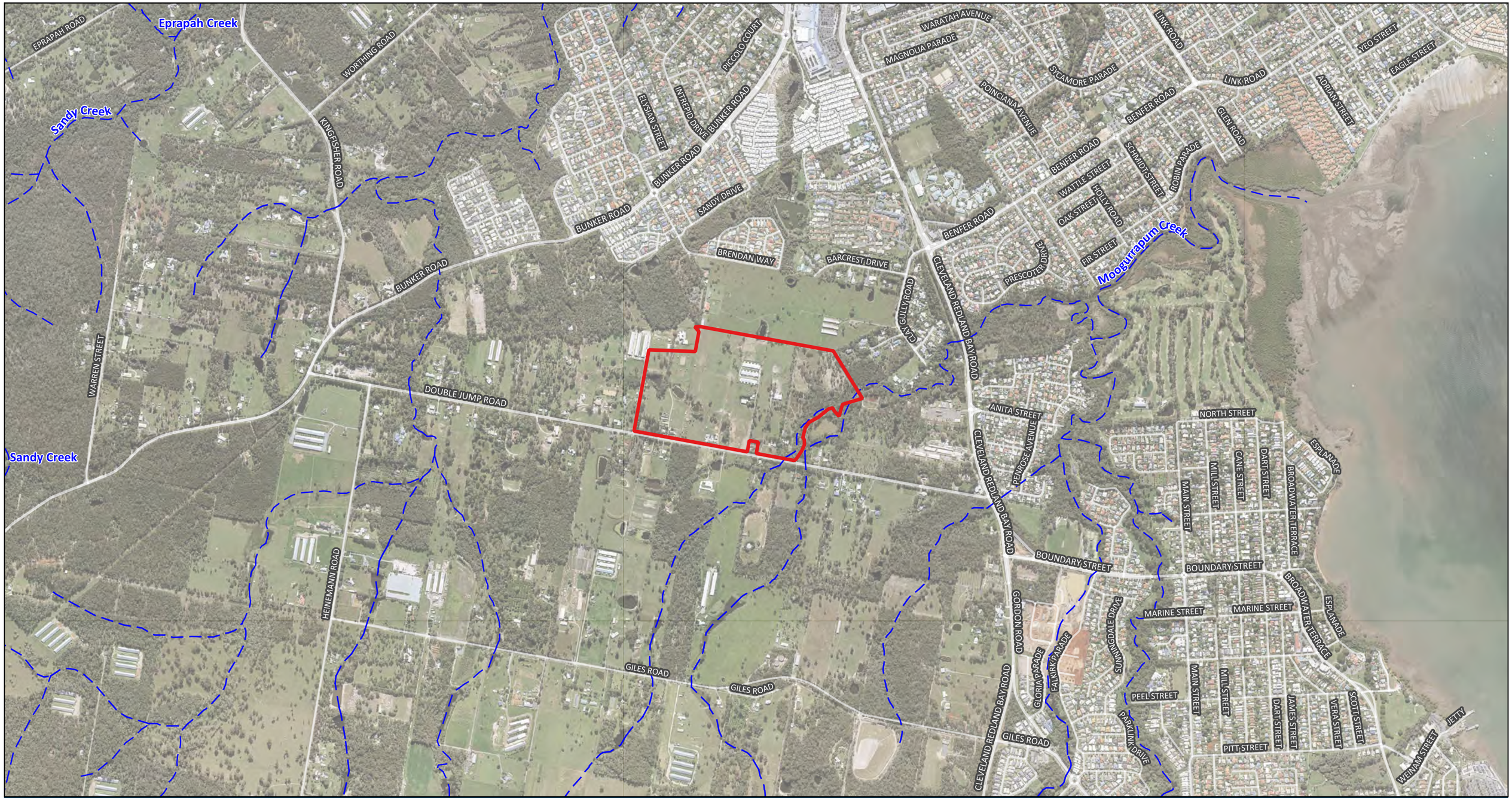
Appendix 11 – Waterways and Wetlands Overlay Map
Appendix 12 – Redlands Wildlife Connections Plan Corridors
Appendix 13 – Redlands WCP Enhancement Corridors in Relation to the Site
Appendix 14 – Moogurupum Creek Offset Planting Capacity
Appendix 15 – IAS Report
Appendix 16 – Shed in Corridor on 39 Brendan Way
Appendix 17 – Northern Corridor Underpass
Appendix 18 – Conceptual Path Network
Appendix 19 – Biobasins Revegetation
Appendix 20 - Double Jump Road Upgrade Concept Engineering Design Extract
Appendix 21 – Double Jump Road Underpass Concept Design
Appendix 22 – Landscape Design for the Multi-function spine
Appendix 23 – AD Western Corridor Alignment



Precinct 2 - Victoria Point (Sutgold Pty Ltd) **Legend**

Figure 1 - Locality

28 South Project Ref: 2019-100(b)

Data Sources: Qld Globe (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2021); Roads (DNRME, 2020); Watercourse (DNRME, 2020); Contours (DNRME 2016).

28ºS ENVIRONMENTAL

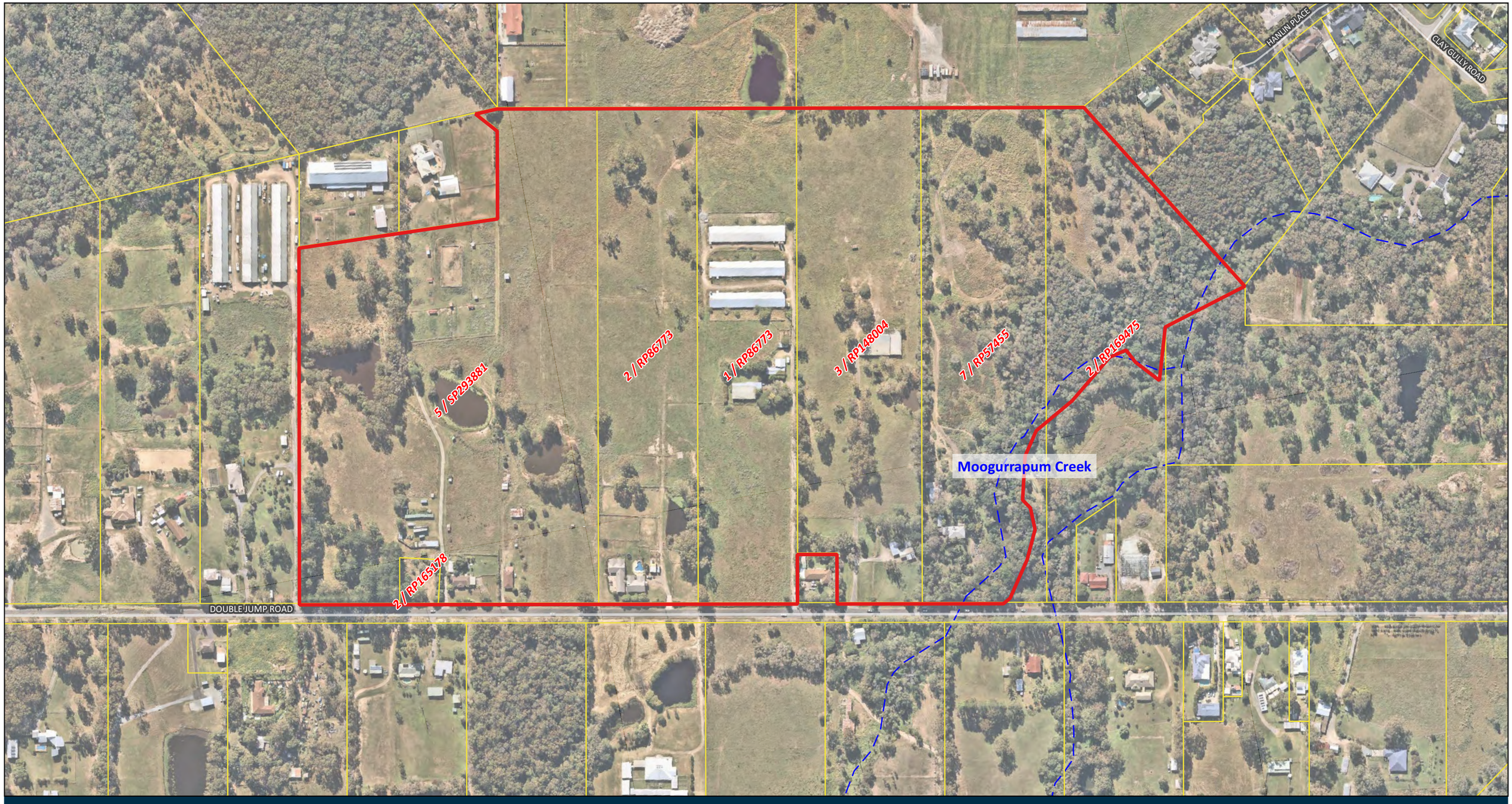
- Precinct 2 Boundary
- Watercourse

Issue Date	Dwg No.	Author
15 Sept. 2021	2019-100(b)-1	CT/RF
Approved	**Revision Note**	
WM		

(A3) GDA 94 MGA 56

0 500 1,000 m

N



Precinct 2 - Victoria Point (Sutgold Pty Ltd) **Legend**

Figure 2 - Precinct 2 Site Context

28 South Project Ref: 2019-100(b)

Data Sources: Qld Globe (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2021); Roads (DNRME, 2020); Watercourse (DNRME, 2020); Contours (DNRME 2016).

28ºS ENVIRONMENTAL

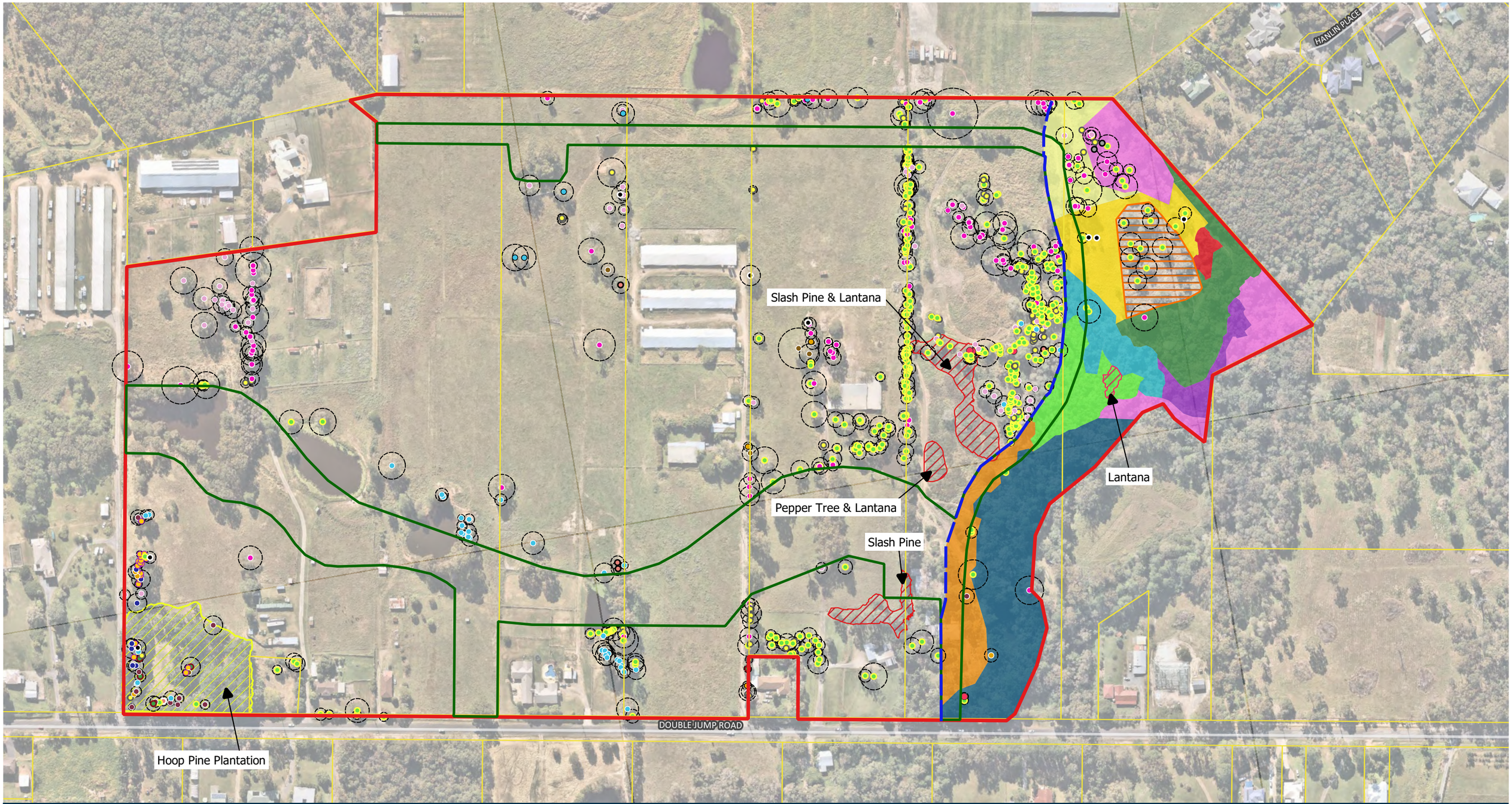
- Property Boundaries
- Precinct 2 Boundary
- Watercourse

Issue Date	Dwg No.	Author
15 Sept. 2021	2019-100(b)-2	CT/RF
Approved	**Revision Note**	
WM		

(A3) GDA 94 MGA 56

0 50 100 150 200 m

N



Precinct 2 - Victoria Point (Sutgold Pty Ltd) Legend

Figure 3(a) – General Vegetation Survey (Excluding Development Interface Areas)

28 South Project Ref: 2019-100(b)

Data Sources: QLD Globe Aerial Imagery (Queensland Globe 2020); Digital Cadastre Database (Dept. Natural Resources and Mines, 2019); Roads (DNRME, 2018).

28ºS ENVIRONMENTAL

- Property Boundaries
- Precinct 2 Boundary
- Detailed Survey Area
- Conservation Area Boundary
- Stage 1 Offset Area Within Precinct 2
- Tree Protection Zones

Vegetation Communities

- 1a. Black sheoak regrowth with regenerating koala habitat trees mainly > NJKHT status.
- 1b. Black sheoak regrowth generally without koala habitat trees.
- 2. Scribbly gum forest with NJKHTs through the strata.
- 3. Regenerating sclerophyll forest comprised of NJKHTs.
- 4. Mixed Paperbark / Scribbly gum forest with NJKHT through the strata.
- 5a. Scattered mature paperbark over a dense groundcover of Lantana.
- 5b. Remnant +/- scattered paperbark over a highly degraded midstorey/groundcover layer.
- 6. Open grassland and landscape plantings (pre-clear RE12.3.6).
- 7. Open grassland (preclear - RE12.12.14).
- 8. Open grassland (preclear RE 12.9-10.4).

Surveyed NJKHTs (Outside Detailed Survey Area)

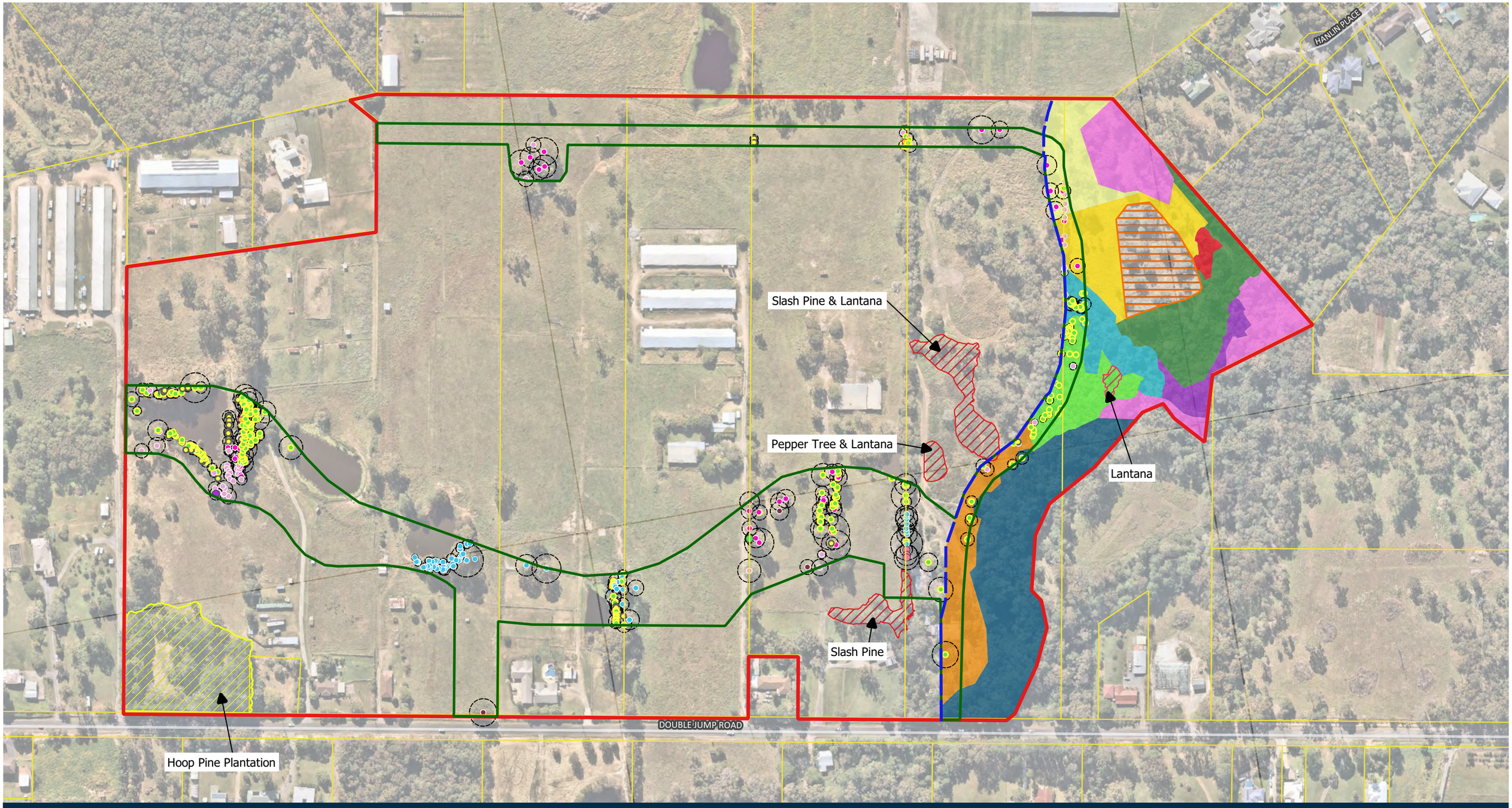
- Angophora woodsiana
- Corymbia citriodora subsp. variegata
- Corymbia intermedia
- Corymbia species
- Corymbia trachyphloia
- Eucalyptus carnea
- Eucalyptus microcorys
- Eucalyptus propinqua
- Eucalyptus racemosa
- Eucalyptus resinifera
- Eucalyptus robusta
- Eucalyptus saligna
- Eucalyptus seeana
- Eucalyptus species
- Eucalyptus tereticornis
- Lophostemon confertus
- Lophostemon suaveolens
- Melaleuca bracteata
- Melaleuca leucadendra
- Melaleuca linariifolia
- Melaleuca quinquenervia
- Melaleuca salicina
- Melaleuca viminalis
- Melaleuca viridifloia
- Eucalyptus resinifera
- Melaleuca sp.

Issue Date	Dwg No.	Author
16 Sept. 2021	2019-100(b)-3(a)	CT
Approved	**Revision Note**	
WM		

(A3) GDA 2020 MGA

0 20 40 60 80 100 m

N



Precinct 2 - Victoria Point (Sutgold Pty Ltd) Legend

Figure 3(b) - Vegetation Survey (Development Interface)

28 South Project Ref: 2019-100(b)

Data Sources: QLD Globe Aerial Imagery (Queensland Globe 2020); Digital Cadastre Database (Dept. Natural Resources and Mines, 2019); Roads (DNRME, 2018).

28ºS ENVIRONMENTAL

- Property Boundaries
- Precinct 2 Boundary
- Detailed Survey Area
- Conservation Area Boundary
- Stage 1 Offset Area Within Precinct 2
- Tree Protection Zones

Vegetation Communities

- 1a. Black sheoak regrowth with regenerating koala habitat trees mainly > NJKHT status.
- 1b. Black sheoak regrowth generally without koala habitat trees.
- 2. Scribbly gum forest with NJKHTs through the strata.
- 3. Regenerating sclerophyll forest comprised of NJKHTs.
- 4. Mixed Paperbark / Scribbly gum forest with NJKHT through the strata.
- 5a. Scattered mature paperbark over a dense groundcover of Lantana.
- 5b. Remnant +/- scattered paperbark over a highly degraded midstorey/groundcover layer.
- 6. Open grassland and landscape plantings (pre-clear RE12.3.6).
- 7. Open grassland (preclear - RE12.12.14).
- 8. Open grassland (preclear RE 12.9-10.4).

Surveyed NJKHTs (Inside Detailed Survey Area)

- Angophora woodsiana
- Corymbia citriodora subsp. variegata
- Corymbia intermedia
- Corymbia species
- Corymbia trachyphloia
- Eucalyptus carnea
- Eucalyptus microcorys
- Eucalyptus propinqua
- Eucalyptus racemosa
- Eucalyptus resinifera
- Eucalyptus robusta
- Eucalyptus saligna
- Eucalyptus seeana
- Eucalyptus species
- Eucalyptus tereticornis
- Lophostemon confertus
- Lophostemon suaveolens
- Melaleuca bracteata
- Melaleuca leucadendra
- Melaleuca linariifolia
- Melaleuca quinquenervia
- Melaleuca salicina
- Melaleuca viminalis
- Melaleuca viridifloia
- Eucalyptus resinifera
- Melaleuca sp.
- Melaleuca sp.
- Angophora sp.
- Corymbia citriodora
- Eucalyptus pilularis

Issue Date	Dwg No.	Author
16 Sept. 2021	2019-100(b)-3(b)	CT
Approved	**Revision Note**	
WM		

(A3) GDA 2020 MGA

0 20 40 60 80 100 m

N

Precinct 2 - Victoria Point (Sutgold Pty Ltd) **Legend**

Figure 4 - Habitat Connectivity

28 South Project Ref: 2019-100(b)

Data Sources: Qld Globe (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2021); Roads (DNRME, 2020); Watercourse (DNRME, 2020); Contours (DNRME 2016).

28ºS ENVIRONMENTAL

- Precinct 2 Boundary
- Precinct 1 Boundary
- Primarily Urban Use
- Primarily Conservation Use
- Recreation area / detention basins that facilitate fauna movement or that is fauna-permeable
- Core Koala Habitat Area
- Primary Connections
- Secondary Linkages
- Maintain Fauna Movement Opportunities
- Watercourse
- Other Precinct / Stage Boundaries
- New Road

Issue Date	Dwg No.	Author
15 Sept. 2021	2019-100(b)-4	CT/RF
Approved	**Revision Note**	
WM		

(A3) GDA 94 MGA 56

0 100 200 300 400 m

N

Tree No. 4155
Tree No. 4156
Tree No. 4157
Tree No. 4139
Tree No. 4138
Tree No. 4158
Tree No. 4146
Tree No. 4145
Tree No. 4144
Tree No. 4141 & 4142
INSET
Sentinel Tree No. 4252
Sentinel Tree No. 4311

Precinct 2 - Victoria Point (Sutgold Pty Ltd)

Figure 5 - Vegetation Impacts

28 South Project Ref: 2019-100(b)

Data Sources: QLD Globe Aerial Imagery (Queensland Globe 2020); Digital Cadastre Database (Dept. Natural Resources and Mines, 2019); Roads (DNRME, 2018).

28ºS ENVIRONMENTAL

Legend

- Property Boundaries
- Precinct 2 Boundary
- Stage 1 Offset Area Within Precinct 2
- Earthworks Batter
- Proposed Bio-retention Basin (Indicative Only)

Surveyed NJKHTs (1,200)

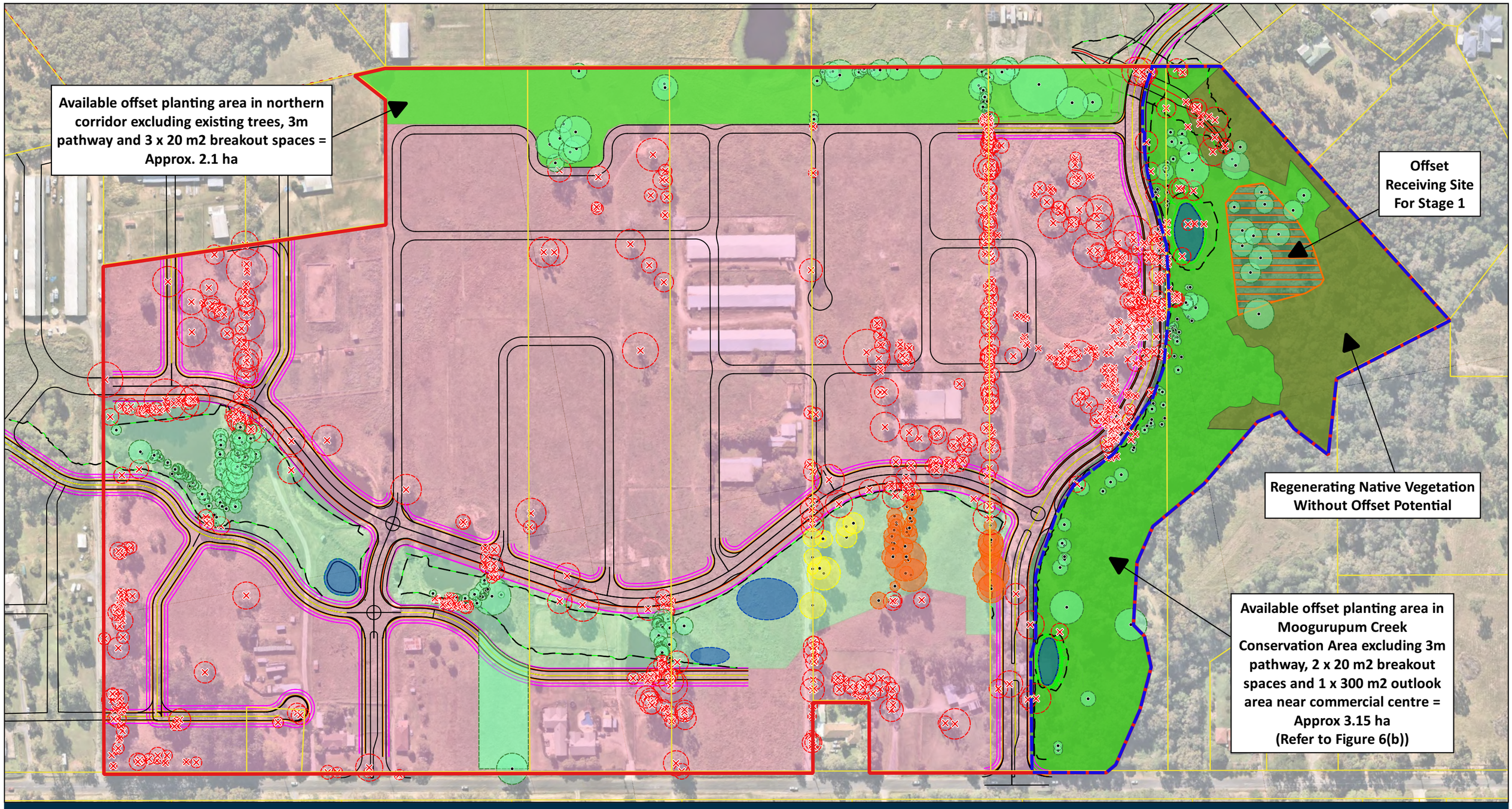
- To Be Removed (825)
- To Be Retained (315)
- Preferentially Retained (11)
- Likely To Be Removed (49)

Issue Date	Dwg No.	Author
15 Sept. 2021	2019-100(b)-5	CT
Approved	**Revision Note**	
WM		

(A3) GDA 2020 MGA

0 20 40 60 80 100 m

N



Precinct 2 - Victoria Point (Sutgold Pty Ltd) **Legend**

Figure 6(a) - Non-Juvenile Koala Habitat Tree (NJKHT) Offset Planting

28 South Project Ref: 2019-100(b)

Data Sources: QLD Globe Aerial Imagery (Queensland Globe 2020); Digital Cadastre Database (Dept. Natural Resources and Mines, 2019); Roads (DNRME, 2018).

28ºS ENVIRONMENTAL

- Property Boundaries
- Precinct 2 Boundary
- Conservation Area Boundary
- Stage 1 Offset Area Within Precinct 2
- Earthworks Batter
- Proposed Bio-retention Basin (Indicative Only)

Surveyed NJKHTs (1,200)

- To Be Removed (825)
- To Be Retained (315)
- Preferentially Retained (11)
- Likely To Be Removed (49)

Total Number of NJKHTs Impacted: 885

Issue Date	Dwg No.	Author
17 Sept. 2021	2019-100(b)-6(a)	CT
Approved	**Revision Note**	
WM		

(A3) GDA 2020 MGA

0 20 40 60 80 100 m

N

Weed and supplementary planting at
100% of pre-clear RE stem/ha rate
Area: 0.38 ha
Pre-clear RE 12.9-10.4: 483 stems/ha
Number of stems to be planted =
(i) 184 stems at RE density; or
(ii) 238 stems at 4m spacing density.

Weed and / or thin black sheoak, no planting
Area: 0.35 ha
Pre-clear RE 12.9-10.4: 483 stems/ha
Number of stems to be planted: 0

Weed and supplementary planting at
100% of pre-clear RE stem/ha rate
Area: 0.46 ha
Pre-clear RE 12.12.14: 1547 stems/ha
Number of stems to be planted =
(i) 712 stems at RE density; or
(ii) 288 stems at 4m spacing density.

Weed and / or thin black sheoak, no planting
Area: 0.15 ha
Pre-clear RE 12.12.14: 1547 stems/ha
Number of stems to be planted: 0

Proposed Bioretention Basin

Weed and supplementary planting at
75% of pre-clear stem/ha rate
Area: 0.19 ha
Pre-clear RE 12.12.14: 1547 stems/ha
Number of stems to be planted =
(i) 220 stems at RE density; or
(ii) 89 stems at 4m spacing density.

Weed and supplementary planting at
50% of pre-clear stem/ha rate
Area: 0.09 ha
Pre-clear RE 12.12.14: 1547 stems/ha
Number of stems to be planted =
(i) 70 stems at RE density; or
(ii) 28 stems at 4m spacing density

Weed and / or thin black sheoak in areas of excessive black sheoak regrowth, no planting
Area: 1.07 ha
Pre-clear RE 12.3.6: 1336 stems/ha
Number of stems to be planted: 0

Weed and supplementary planting at
100% of pre-clear RE stem/ha rate
Area: 0.53 ha
Pre-clear RE 12.3.6: 1336 stems/ha
Number of stems to be planted =
(i) 706 stems at RE density; or
(ii) 332 stems at 4m spacing density.

Weed and supplementary planting at
50% of pre-clear stem/ha rate
Area: 0.3 ha
Pre-clear RE 12.3.6: 1336 stems/ha
Number of stems to be planted =
(i) 197 stems at RE density; or
(ii) 94 stems at 4m spacing density

Weed and supplementary planting at
75% of pre-clear stem/ha rate
Area: 0.12 ha
Pre-clear RE 12.3.6: 1336 stems/ha
Number of stems to be planted =
(i) 120 stems at RE density; or
(ii) 56 stems at 4m spacing density

Proposed Bioretention Basin

Weed and supplementary planting at
10% of pre-clear stem/ha rate
Area: 1.26 ha
Pre-clear RE 12.3.6: 1336 stems/ha
Number of stems to be planted =
(i) 168 stems at RE density; or
(ii) 79 stems at 4m spacing density

HANLIN PLACE

DOUBLE JUMP ROAD

Management Units	Description
1	Remnant or regrowth vegetation with no additional offset capacity
2	Offset Area 1 (Fragmented remnant vegetation with highly degraded lower strata – 10% offset capacity)
3	Offset Area 2 (Senescing Black sheoak with no koala habitat tree regeneration – 50% offset capacity)
4	Offset Area 3 (Scattered paperbark over Lantana – 75% offset capacity)
5	Offset Area 4 (Pasture and Landscape Planting, pre-clear RE 12.3.6 – 100% offset capacity)
6	Offset Area 5 (Pasture, pre-clear RE 12.12.14 – 100% offset capacity)
7	Offset Area 6 (Pasture, pre-clear RE 12.9-10.4 – 100% offset capacity)

Precinct 2 - Victoria Point (Sutgold Pty Ltd)

Figure 6(b) - Offset Planting Area (Conservation Area)

28 South Project Ref: 2019-100(b)

Data Sources: QLd Globe Imagery (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2020); Baseline Roads (DNRME 2020); Waterways (DNRME 2019).

28°S ENVIRONMENTAL

Legend

- Property Boundaries
- Precinct 2 Boundary
- Conservation Area Boundary
- Fauna underpass
- Stage 1 Offset Area Within Precinct 2
- Preclear RE Boundaries

Surveyed NJKHTs (With Tree Protection Zones Within the Conservation Area)

- To Be Removed
- To Be Retained

Issue Date	Dwg No.	Author
15 Sept. 2021	2019-100(b)-6(b)	CT
Approved	**Revision Note**	
WM/AD		

(A3) GDA 94 MGA 56

0 25 50 75 100 m

N

Plate 1 – 3 X 1500mm pipes convey the western tributary of Moogurupum Creek under Double Jump Road

Plate 2 – The concrete apron on the downstream side of the pipes establishes a significant "drop structure"

Plate 3 – Water ponds on the upstream side of the road, restricting fauna movement through the pipes

Plate 4 – Large scribbly gums either side of Double Jump Road provide a potential canopy connection

Plate 5 - 3 X 1500mm pipes convey the eastern tributary of Moogurupum Creek under Double Jump Road

Plate 6 – The concrete apron on the downstream side of the pipes establishes a significant "drop structure"

Plate 7 – Large scribbly gums either side of Double Jump Road provide a potential canopy connection

Plate 8 – View from centre of corridor to adjoining house north of Double Jump Road

Plate 9 – View from centre of corridor to adjoining house south of Double Jump Road

Plate 10 – Exclusion fence on the southern boundary of Lot 3 on SP293881

Plate 11 – View west along Double Jump Road showing the location of the Enhancement Link

Plate 12 – View along the Enhancement Link from Tree 4311 to Tree 4252 (areas between to be revegetated

Plate 13 – Discovery Park, Bahrs Scrub – revegetated riparian corridor in the right of view

Plate 14 – Discovery Park, Bahrs Scrub – Active use areas between retained trees permit fauna movement

Plate 15 – Discovery Park, Bahrs Scrub – natural grades around trees are maintained

Plate 16 – Discovery Park, Bahrs Scrub - active use areas don't necessarily restrict fauna movement

Plate 17 – Group of Scribbly gums at the eastern end of the multi-function spine worthy of retention

Plate 18 – Successful plant out of multi-use corridor, Gordon Road, Redlands (4-years of growth)

Plate 19 – Successful plant out of multi-use corridor, Gordon Road, Redlands (4-years of growth)

Plate 20 – Successful plant out of multi-use corridor, Gordon Road, Redlands (4-years of growth)

Appendix 1 – CV's

Curriculum Vitæ

ANDREW DANIEL – MANAGING DIRECTOR & PRINCIPAL ECOLOGIST

Andrew has over 20 years' experience in ecological research and management with environmental consultancies and State and local government agencies. After completing his doctoral studies into nutrient cycling within paperbark swamps, Andrew trained as a botanist at the Queensland Herbarium, where he undertook numerous botanical assessments, mapping and monitoring projects for the Wildlife Ecology Section.

Since 2004, Andrew has primarily undertaken specialist consultancy work for local and state governments and private organisations associated with ecological investigations, ecological management planning and offsetting of impacts. This work encompasses all aspects of natural environment management from constraints analysis, through impact assessment and approvals stages to construction, implementation and monitoring. Andrew has extensive experience throughout Queensland with experience in WA, NT and NSW. Andrew has also authored or co-authored several scientific papers and appeared as an expert witness in the Queensland P&E Court on several matters.

EXPERTISE

Botanical surveys and vegetation mapping, preclearance surveys, habitat mapping and assessment, ecological assessment reporting, due diligence investigations, BioCondition assessment, vegetation rehabilitation, threatened species surveys management and monitoring plans, ecological offset development, and wildlife management. Andrew has acted as an expert witness on numerous Queensland P&E and Land Court cases, is a Certified Environmental Practitioner and a member of the Ecological Society of Australia, and Environmental Institute of Australia and New Zealand and Queensland Environmental Law Association.

QUALIFICATIONS

- PhD Environmental Engineering (Griffith University, 2000)
- Bachelor of Science, Honours IIA (Biological Sciences) (University of Exeter, 1990)

RELEVANT WORK HISTORY

2011 – present	Principal Ecologist, Terrestria Pty Ltd
2010 – 2011	Principal Ecologist, Ecological Landscape Management Pty Ltd
2008 – 2010	Principal Ecologist, Biodiversity Assessment and Management Pty Ltd
2005 – 2008	Senior Ecologist, Chenoweth EPLA Pty Ltd
2004 – 2005	Senior Ecologist, AustralAsian Resource Consultants (AARC)
2002 – 2003	Research Scientist, Department of Natural Resources (Alan Fletcher Research Station)
2000 – 2002	Senior Technician, Queensland Herbarium (Queensland Government)

COURT EXPERIENCE

2018	Planning and Environment Court Appeal No. 1638 of 2018. Moreton Bay Regional Council v Trask Land Development Corporation No. 2 Pty Ltd. Engaged on behalf of MBRC to provide expert advice on vegetation clearing at New Settlement Road.
2018	Planning and Environment Court Appeal No. 93 of 2018. Moreton Bay Regional Council v Trask Land Development Corporation No. 2 Pty Ltd. Engaged on behalf of MBRC to provide expert advice on RoL Ecological Conditions at New Settlement Road.
2018	Planning and Environment Court Appeal No. (No. 1639 of 2018) of 2018. Moreton Bay Regional Council v Traspunt No. 14 Pty Ltd. Engaged on behalf of MBRC to provide expert advice of vegetation clearing at Burbury Road.
2018	Planning and Environment Court Appeal No. 627 of 2018. Moreton Bay Regional Council v Trask Development Corporation No. 15 Pty Ltd. Engaged on behalf of MBRC to provide expert advice of vegetation and ecological values for Trask development applications within the Morayfield South Growth Area.
2018	Planning and Environment Court Appeal No. 1350 of 2018. Moreton Bay Regional Council v Traspunt No. 13 Pty Ltd. Engaged on behalf of MBRC to provide expert advice of vegetation clearing.at Youngs Crossing Road.
2016	Supreme Court Appeal SC 932/16, Foxleigh Land Pty Ltd v Kevin Kenny & Ors. Engaged on behalf of Foxleigh Land Pty Ltd to provide expert advice to the Court on impacts to biodiversity offset areas.
2015 – 2016	Land Court Appeal EPA495-15, MRA496-15, MRA497-15. New Acland Coal Pty Ltd ACN 081 022 380 V Frank Ashman & Ors. and Chief Executive, Department of Environment and Heritage Protection Engaged on behalf of New Acland Coal Pty Ltd to provide expert advice to the Court on botanical and ecological issues relating to New Acland Coal Mine Stage 3 Expansion project.
2014 – 2016	Land Court Appeal AQL021-14 Philip Usher Constructions V Brisbane City Council; 3063 Ipswich Rd Darra. Engaged on behalf of Philip Usher Constructions to provide expert advice to the Court on botanical and ecological issues relating to the matter potential developable area.
2014 – 2015	P&E Appeal 1648 of 2014, Northbrook Corporation Pty Ltd V Noosa Shire Council and Other's: Engaged on behalf of Northbrook Corporation Pty Ltd to provide expert advice to the Court on botanical and ecological issues relating to the matter of an application for a preliminary approval for an MCU to vary the effect of the Maroochy Plan 2000 and the Noosa Plan planning schemes for the mixed use community title development Noosa on Weyba.
2014	Land Court Appeal LVA051 – 14 (616-632 West Mont Cotton Road, Sheldon), Karreman Resources Pty Ltd v Valuer-General. Engaged on behalf of Department of Resources and Mines to provide expert advice to the Court on ecological issues relating to the Valuer General's Descision on Objection – Lot 100 on SP234173.
2014	R v Baden-Clay (SC467/2013). Investigations into foresnic botany evidence presented. Undertaken for Peter Sheilds Lawyers.
2010 – 2013	P&E Appeal 2763 of 2009, Rainbow Shores Pty Ltd v Gympie regional Council and ORS. Engaged on behalf of the Queensland Department of Environment and Resource Management to provide expert advice to the Court on botanical and ecological issues relating to the matter of an application for a development permit for a master planned community at Rainbow Shores, Queensland.

2013	P&E Appeal No 2900 of 2012 Onyx Alliance Pty Ltd v Brisbane City Council and DEHP. Engaged on behalf of Onyx Pty Ltd to provide expert ecological advice on issues relating to the matter or a waste recycling centre to be located at 65 Telford Street, Virginia, Qld.
2009 – 2010	P&E Appeal 953 of 2008, Sailmist Pty Ltd V Sunshine Coast Regional Council. Engaged by Sunshine Coast Regional Council to provide expert advice to the Court on botanical issues relating to the matter of an application for a development permit for a master planned rural residential community at Eudlo Flats Road, Diddillibah, Queensland.
2009 – 2010	P&E Appeal 3566 of 2009, Casagrande Investments Pty Ltd V Redland City Council & ORS. Engaged on behalf of Casagrande Investments to provide expert advice to the Court on botanical issues relating to the matter of an application for a development permit for a material change of use for multiple dwelling with respect to land situated at 537-547 Redland Bay Road, Victoria Point, Queensland.
2010	P&E Appeal 3612 of 2009Surfing world Sunshine Coast Pty Ltd V Sunshine Coast Regional Council and Orrs. Engaged on behalf of the Queensland Department of Environment and Resource Management to provide expert advice to the Court on botanical and ecological issues relating to the matter of an application for a development permit for a shopping centre.
2010	P&E Appeal 132 of 2010 – Galtee Developments Pty Ltd V Sunshine Coast Regional Council. Engaged by Sunshine Coast Regional Council (Solicitors Wakefield Sykes). Provision of expert advice to the court on botanical issues relating to the matter of an application for a Development Permit for a reconfiguration of a lot for land at 556-578 Diddillibah Road, Diddillibah, Maroochy Shire, Queensland.

SELECTED PROJECT EXPERIENCE

- Large scale Regional Ecosystem mapping for multiple Gas Tenements in southern Queensland. Prepared for Santos GLNG
- Development and certification of Santos GLNG pre-clearance ecological and wetland survey methodology. Prepared for Santos GLNG.
- Regional ecosystem, BioCondition and plant Identification training for Arrow energy field ecologists at Moranbah and Chinchilla offices
- Advice on negotiated changes to EA conditions for the Fairview Dawson River release. Design and implementation of baseline for receiving environment monitoring program for frogs and birds. Prepared for Santos
- Developed rehabilitation program for the Santos Gladstone Liquid Natural Gas (GLNG), Gas Transmission Pipeline (GTP) project to address State and federal EA conditions. Included the development of rehabilitation targets for all land use types along the GTP Right of Way. Our field team also provided the field survey of reference and disturbance bio-condition sites along entire RoW. Prepared for ERM
- Principal Ecologist/Botanist for the terrestrial ecology and impact assessment for the gas fields component of the Ironbark Project EIS. Prepared for BAAM on behalf of Australia pacific LNG.
- Weed assessment and management plans for RO plants and associated gas infrastructure. Included assessment and mapping of weed plant distributions on Origin's tenements in the southern Brigalow belt. Prepared for Laing O'Rourke Construction Australia
- Preparation of baseline flora assessment for the EIS for Solar Dawn Project, Kogan, Queensland. Prepared for ERM Pty Ltd.

- Pre-clearing assessment of gas wells, linear and static infrastructure. Confirmation and assessment of RE mapping, vegetation structure, floristics listed species, habitat and landscape features watercourses and wetlands across southern Queensland. Prepared on behalf of QGC
- Principal Ecologist/Botanist for the terrestrial ecology and impact assessment for the gas fields component of the APLNG Project EIS. Prepared for Worley Parson Pty Ltd.
- Desktop Review of potential rehabilitation strategies for Oakey Creek Mine. Prepared for Austecology Pty Ltd.
- Flora and Vegetation community technical chapter for the Hillalong mine EIS. Prepared for CDM Smith Pty Ltd.
- Flora and Vegetation assessment for the Carmichael Coal water pipeline. Prepared for CDM Smith Pty Ltd.
- Flora assessment and vegetation mapping for the Carmichael Coal thermal power station DA. Prepared for CDM Smith Pty Ltd.

PUBLICATIONS

- G.T. Hastwell, A.J. Daniel. G Vivian-Smith (2008). Predicting invasive species: do subtropical native and invasive aquatic plants differ in their growth response to macronutrients? Diversity and Distributions 14(2): 243-251.
- A.J Daniel and M. Greenway (1995). Nutrient dynamics in two urban melaleuca wetlands. In: Wetlands for Water Quality Control Conference Papers, James Cook University, Townsville, 25-29 September 1995.
- M. Greenway and A.J. Daniel (1995). Melaleuca wetlands for water storage and nutrient removal. In Proceedings of the Conference on Downstream Effects of Land Use, April 1995, Rockhampton.
- A.J. Daniel, D. Small and P.G. Saffigna (1994). Comparison of microbial biomass levels on irrigated dairy farms as influenced by biodynamic and conventional farming systems. In Proceedings of International Symposium on Environmental Agriculture, Towards 2000, Gold Coast, Queensland, 5-8 June 1994.

CONTACT
0417 672 227
wayne@28south.com.au

Wayne Moffitt

DIRECTOR AND PRINCIPAL ECOLOGIST

With twenty-seven years of experience as an environmental manager and ecologist in Queensland, New South Wales and Victoria, Wayne Moffitt has an in depth understanding of the unique qualities of these regions, their complex land management issues and the regulatory framework that affords them protection.

Wayne has led assessment in a wide range of environments and development settings and has advised clients in both the public and private sector on matters including: ecological assessment and management; threatened species management; vegetation and rehabilitation management plans; ecological monitoring; sensitive area development; and statutory compliance. He is very familiar with the statutory approval processes for urban, tourism, infrastructure, rural, and resource development; and has coordinated approvals for many high-profile projects.

Wayne is regularly called upon to provide expert evidence on ecology and environmental planning issues in merits appeals, land clearing prosecution matters, and *highest and best use* valuation and compensation claims. He has appeared in the Queensland Planning and Environment Court, the Queensland Land Court and the New South Wales Land and Environment Court and has significant experience in delivery of documentary and oral evidence. Wayne is familiar with the rigors of the expert process, including the applicable court rules and procedures.

This CV outlines Wayne's legal experience.

QUEENSLAND

Ongoing Matters

LAND COURT OF QUEENSLAND MATTER MER708-19
Denis Campbell Conway & Ors v Australia Pacific LNG CSG Transmissions Pty Ltd: Ecological Advice in Relation to Constraint Mapping of land, Tecoma: Instructing Solicitor, Alroe Somers & O'Sullivan Solicitors

POTENTIAL LAND COURT OF QUEENSLAND MATTER
Ambertone Pty Ltd v Brisbane City Council: Ecological Advice in Relation to Resumption of land, Kholo: Instructing Solicitor, Ruddy Legal Pty Ltd

LAND COURT OF QUEENSLAND MATTER AQL 012-19
Colin Mellish v Redland City Council: Ecological Advice in Relation to Resumption of land, Thornlands: Instructing Solicitor, Redland City Council

PLANNING AND ENVIRONMENT COURT APPEAL 3720 OF 2019
Sandstom & Ors v Sunshine Coast Council and Anor. Proposed Surfrider Clubhouse, Currimundi: Instructing Solicitor, McCarthy Durie Lawyers

PLANNING AND ENVIRONMENT COURT APPEAL 3829 OF 2019
Sutgold Pty Ltd. V Redland City Council. Proposed Residential Development, Thornlands: Instructing Solicitor, Anderssen Lawyers

PLANNING AND ENVIRONMENT COURT MATTER 1409 OF 2019
YQ Property Pty Ltd v Brisbane City Council: Proposed Townhouse Development, Holland Park: Instructing Solicitor, MacDonnells Law

PLANNING AND ENVIRONMENT COURT APPEAL 771 of 2019
Laurence Lancini v Sunshine Coast Regional Council. Proposed establishment of a rural dam: Instructing Solicitor, Keir Steele Waldron Lawyers

PLANNING AND ENVIRONMENT COURT MATTER 239 OF 2019
Paul Boudar v Moreton Bay Regional Council: Conditions Appeal Proposed Storage Facility and Transport Depot, Deception Bay: Instructing Solicitor, Moreton Bay Regional Council.

PLANNING AND ENVIRONMENT COURT MATTER 4526 of 2018
GTH Resorts No 5 Pty. Ltd v Gold Coast City Council: Proposed Aged Care Facility, Gold Coast: Instructing Solicitor, Thomson Geer

PLANNING AND ENVIRONMENT COURT APPEAL 4457 OF 2018
Weyba Pty Ltd v Ipswich City Council, Proposed Residential Development, Goodna: Instructing Solicitor, HWL Ebsworth

PLANNING AND ENVIRONMENT COURT MATTER 4225 OF 2018
YM Private Pty Ltd. V Brisbane City Council: Proposed Townhouse Development and Childcare Facility, Chapel Hill: Instructing Solicitor, HWL Ebsworth

PLANNING AND ENVIRONMENT COURT APPEAL D152 OF 2018
Kenilworth Camping Pty Ltd v Sunshine Coast Regional Council, Proposed Change of Use to Nature Based Tourism, Kenilworth: Instructing Solicitor, p&e Law

PLANNING AND ENVIRONMENT COURT MATTER 61 of 2018
Washington Andres Gabarrin v Noosa Council: Proposed Residential Development, Lake Weyba: Instructing Solicitor Wakefield Sykes

PLANNING AND ENVIRONMENT COURT MATTER 3709 OF 2015
(Braxdan Pty Ltd v Brisbane City Council & REPA): Proposed Residential Development, Moggill: Instructing Solicitor, Connor O'Meara.

PLANNING AND ENVIRONMENT COURT MATTER 196 OF 2015
(Chief Executive of the Department of Infrastructure, Local Government and Planning ats Knuth (ATF The Burdekin Downs Pastoral Trust): Assessment of application for High Value Agriculture under the VM Act: Instructing Solicitor, Corrs Chambers Westgarth.

QUEENSLAND

Resolved Matters

PLANNING AND ENVIRONMENT COURT APPEAL 1810 OF 2019
DFC (Project Management) Pty Ltd v Brisbane City Council, Proposed Residential Development, Nundah: Instructing Solicitor, Thomson Geer

PLANNING AND ENVIRONMENT COURT APPEAL 745 OF 2019
Emily Wilson v Brisbane City Council & Ors, Proposed Residential Development, The Gap: Instructing Solicitor, Connor O'Meara.

PLANNING AND ENVIRONMENT COURT APPEAL 4350 OF 2018
Micallef v Moreton Bay Regional Council, Landholder Representation Regarding the Proposed Establishment of an NBN Tower; Instructing Solicitor, Gerard Batt Lawyers

PLANNING AND ENVIRONMENT COURT MATTER 4244 OF 2018
Business Property Brokers v Gold Coast City Council: Conditions Appeal for Proposed Shopping Centre Expansion, Nerang: Instructing Solicitor, HWL Ebsworth

PLANNING AND ENVIRONMENT COURT MATTER 2317 of 2018
Opus Constructions Pty Ltd v Brisbane City Council: Proposed Multi-unit development, The Gap, Brisbane City: Instructing Solicitor, Connor O'Meara

PLANNING AND ENVIRONMENT COURT MATTER 2908 of 2018
Valley View Heights Management Services v Gold Coast City Council: Proposed residential development, Gold Coast. Instructing Solicitor, Hopgood Ganim

PLANNING AND ENVIRONMENT COURT MATTER 1483 of 2018
Cadmium Holding FW Pty Ltd v Council of the City of Gold Coast: Proposed Residential Development, Coomera, Gold Coast City: Instructing Solicitor, Thomson Geer

PLANNING AND ENVIRONMENT COURT MATTER 694 OF 2018
Australian National Homes v Moreton Bay Regional Council & BGM Projects Pty Ltd – Proposed Shopping Centre: Instructing Solicitor, McCullough Robertson

PLANNING AND ENVIRONMENT COURT MATTER 509 OF 2018
(Bovey v Brisbane City Council & 906 Hamilton Projects Pty Ltd) – Resident action against adjoining townhouse development: Instructing Solicitor, Clinton Mohr Lawyers

PLANNING AND ENVIRONMENT COURT MATTER 340 OF 2018
Murphy v Moreton Bay Regional Council & BGM Projects Pty Ltd – Proposed Shopping Centre: Instructing Solicitor, McCullough Robertson

PLANNING AND ENVIRONMENT COURT MATTER 165 of 2018
SCEC v SH Coolum and Sunshine Coast Regional Council: Proposed Mixed Use Tourist Facility, Sunshine Coast: Instructing Solicitor, Sunshine Coast Regional Council

PLANNING AND ENVIRONMENT COURT MATTER 4646 of 2017
Tricare (PT Vernon) Pty Ltd v Brisbane City Council: Proposed expansion of an aged care facility: Instructing Solicitor, Connor O'Meara

PLANNING AND ENVIRONMENT COURT MATTER 2662 OF 2017
Urbex Pty Ltd v Logan City Council: Proposed Residential Development, Logan Estate, Logan City: Instructing Solicitor, Holding Redlich.

PLANNING AND ENVIRONMENT COURT MATTER 1262 OF 2017
F.W Estate Pty Ltd & Ors v Logan City Council: Proposed Residential Development, Jimboomba: Instructing Solicitor, Minter Ellison.

PLANNING AND ENVIRONMENT COURT MATTER 997 OF 2017
(MLSM v Moreton Bay Regional Council): Dispute regarding bushland habitat under the Koala SPRP: Instructing Solicitor, Legal Services Department, Moreton Bay Regional Council.

PLANNING AND ENVIRONMENT COURT MATTER 4807 OF 2016
(IVL Group Pty Ltd and Lanrex Pty Ltd v Redland City Council): Amendment to a Development Permit (convenience retail centre): Instructing Solicitor, MacDonnells Law

PLANNING AND ENVIRONMENT COURT MATTER 4389 OF 2016
(Ahern v Brisbane City Council: Dispute regarding development approval conditions relating to encroachment into a mapped waterway corridor: Instructing solicitor, Walker Lawyers, and Anderssen Lawyers

PLANNING AND ENVIRONMENT MATTER 4087 OF 2016
(De Luchi v Moreton Bay Regional Council) – Assessment of Illegal Clearing: Instructing Solicitor, Moreton Bay Regional Council

PLANNING AND ENVIRONMENT COURT MATTER 4041 OF 2016
(Two Tops Pty Ltd v Brisbane City Council) – Permissible Change Application arising from previous Court approval: Instructing Solicitor, Thomson Geer

PLANNING AND ENVIRONMENT COURT MATTER 3882 OF 2016
Bigini v Brisbane City Council & Ors: Proposed Multi-unit dwelling, Toowong. Instructing Solicitor, McPherson Kelley

LAND COURT OF QUEENSLAND MATTER NO. AQL 017/16
Richardson (nee Sinathamby) v Brisbane City Council – Proposed Land Resumption for environmental purposes, Eight Mile Plains: Instructing Solicitor, Marcus Johnston Legal.

PLANNING AND ENVIRONMENT COURT MATTER 3075 OF 2016
(Redland City Council v Webb) – Enforcement proceedings regarding alleged illegal clearing: Instructing Solicitor, Hopgood Ganim.

PLANNING AND ENVIRONMENT COURT MATTER 1146 OF 2016
(Raelene Gayle Donovan v Brisbane City Council and Nicholas Andrew Buckle and Margaret Helen Jose-Buckle): Dispute regarding the removal of an environmental covenant: Instructing Solicitor, Pan & Partners Lawyers.

PLANNING AND ENVIRONMENT COURT MATTER 3796 OF 2015
(Tamborine Mountain Progress Association Inc v Scenic Rim Regional Council & Ors: Proposed Outdoor Sports, Recreation and Entertainment Facility (mountain bike trails and zip line park): Instructing Solicitor, Norton Rose Fulbright.

PLANNING AND ENVIRONMENT COURT MATTER 3621 OF 2015
(Brisbane City Council ats Harvest Asset Management Services) – Proposed residential development, The Gap: Instructing Solicitor, Thomson Geer.

PLANNING AND ENVIRONMENT COURT MATTER 3191 OF 2015
(Varsani v Brisbane City Council) – Proposed Residential Development, Moggill: Instructing Solicitor, Thomson Geer.

PLANNING AND ENVIRONMENT COURT MATTER 1631 OF 2015
(Tingalpa Central Holdings v Brisbane City Council) – Proposed commercial development, Tingalpa: Instructing Solicitor, Synkronos Legal.

PLANNING AND ENVIRONMENT COURT MATTER BD651 OF 2015
(Kinka Beach Pty Ltd v Livingstone Shire Council & Ors). Proposed Residential Development, Kinka Beach: Instructing Solicitor, King & Company.

PLANNING AND ENVIRONMENT COURT MATTER 4191 OF 2014
(Application by Villa World Developments Pty Ltd seeking a Permissible Change for the East Ridge development, Thornlands); Instructing Solicitor, Hickey Lawyers

PLANNING AND ENVIRONMENT COURT APPEAL NO. 1446 OF 2013
(JAB Gravel and Earthworks v Brisbane City Council & Ors) – Proposed Sand and Gravel Extraction Project, Bald Hills; Instructing Solicitor, SS Lawyers

PLANNING AND ENVIRONMENT COURT APPEAL NO. 4890 OF 2012
(Karalee Land Partners v Ipswich City Council) – Proposed residential development, Ipswich: Instructing Solicitor, Hopgood Ganim

PLANNING AND ENVIRONMENT COURT APPEAL NO. 4842 OF 2012
(Brisbane City Council ats Sarri Developments Pty. Ltd & Anor: Instructing Solicitor, Norton Rose.

PLANNING AND ENVIRONMENT COURT APPEAL NO. 3933 OF 2012
(Chong v Logan City Council) – Compensation Claim under section 705 of the Sustainable Planning Act 2009" Instructing Solicitor, Corrs Chambers Westgarth

PLANNING AND ENVIRONMENT COURT APPEAL BD3001 OF 2012
(Traspunt No. 4 Pty. Ltd v Moreton Bay Regional Council) – Assessment of the validity of a "critical habitat" designation under the Nature Conservation Act, Rothwell: Instructing Solicitor, Hallett Legal

LAND COURT OF QUEENSLAND MATTER NO. AQL206-11
(Silveressence Pty Ltd trading as Murrarie Landfill – v - Brisbane City Council – Proposed land resumption, Brisbane: Instructing Solicitor, Nicholsons.

PLANNING AND ENVIRONMENT COURT APPEAL NO. 2981 OF 2010
(Brisbane City Council –ats- Philip Usher Constructions) – Proposed Residential Development, Groth Road Boondall: Instructing Solicitor, Robert Milne Legal

PLANNING AND ENVIRONMENT COURT APPEAL NO. 2606 OF 2010
(Westlink Pty. Ltd as Trustee for the Westlink Industrial Trust - v – Lockyer Valley Regional Council & Ors) – Westlink Power Project, Gatton: Instructing Solicitor, McInnes Wilson Lawyers

PLANNING AND ENVIRONMENT COURT APPEAL NO. 2675 OF 2009
(Wigan v Redland City Council) – Proposed residential development, Thornlands; Instructing Solicitor, Milne Legal

PLANNING AND ENVIRONMENT COURT APPEAL 2271 OF 2009
(John Graham Clissold (as trustee) - v – Redland City Council) – Proposed Childcare Centre, Russell Island: Instructing Solicitor, Robert Milne Legal

PLANNING AND ENVIRONMENT COURT APPEAL NO. 1963 OF 2009
(George v Redland City Council) - Proposed residential development, Thornlands; Instructing Solicitor, Hickey Lawyers

PLANNING AND ENVIRONMENT COURT APPEAL BD1050 OF 2009
(Gold Coast City Council ats Heck): Instructing Solicitor, McInnes Wilson Lawyers

PLANNING AND ENVIRONMENT COURT APPEALS BD 2084 AND 2085 OF 2008
(Sunnygold International Pty. Ltd and Brisbane City Council and Ors ats HTWCG and Smith) – Proposed Residential Development, Tingalpa: Instructing Solicitor, DLA Phillips Fox

PLANNING AND ENVIRONMENT COURT APPEAL BD 3411 OF 2008
(Krajniw and Ors v Brisbane City Council and Ors) – Proposed Golf Course and Residential Development (Cannon Hill Community Links), Cannon Hill: Instructing Solicitor Deacons

PLANNING AND ENVIRONMENT COURT APPEAL 2481 OF 2008
(Buildev Developments (Qld) Pty. Ltd v Gold Coast City Council) – Proposed Industrial Development, Yatala: Instructing Solicitor: Deacons

PLANNING AND ENVIRONMENT COURT APPEAL BD 1880 OF 2008
(Heritage Properties and Anor v Redland Shire Council and Ors) - Proposed Residential Development, Thornlands: Instructing Solicitor, HWL Ebsworth Lawyers

PLANNING AND ENVIRONMENT COURT APPEAL BD 1968 OF 2006
(Blue Care v Brisbane City Council and Ors) – Proposed Aged Care Facility, Cannon Hill: Instructing Solicitor – Deacons

PLANNING AND ENVIRONMENT COURT APPEAL NO. 1497 OF 2006
(Jack's Property Developments v Ipswich City Council) – Proposed Relocatable Home Park, Ipswich: Instructing Solicitor Mallesons Stephens Jacques)

PLANNING AND ENVIRONMENT COURT APPEAL 4622 OF 2004
(Keilar Fox & McGee Pty. Ltd v Brisbane City Council) – Proposed Residential Development, The Gap: Instructing Solicitor, DLA Phillips Fox

PLANNING AND ENVIRONMENT COURT APPEALS 376 AND 377 OF 2003
(Barnes and Gold Coast City Council –ats- O'Shea and Gecko) – Proposed Expansion of an Ecotourism Facility, Springbrook): Instructing Solicitor, DLA Phillips Fox

PLANNING AND ENVIRONMENT COURT APPEAL 4859 OF 2000
(Stradbroke Island Management Organisation Inc IA6856 and Ors v. Redland Shire Council & Ors) - Redevelopment of Stradbroke Island Beach Hotel: Instructing Solicitor DLA Phillips Fox

PLANNING AND ENVIRONMENT COURT APPEAL 49 OF 199
7 (Noosa Shire Council –ats- Robert Brothers Holdings) – Proposed Residential Development, Cooroy: Instructing Solicitor, Robert Milne Legal

NEW SOUTH WALES

Ongoing Matters

Ongoing investigations for the New South Wales Office of Environment and Heritage in relation to alleged illegal land clearing on the western slopes of NSW.

NEW SOUTH WALES

Matters Resolved

NSW LAND AND ENVIRONMENT COURT NO 50659 AND 50660 OF 2014

(Topview Brisbane Pty. Ltd v Office of Environment and Heritage) - Landholder Representation regarding Illegal Clearing Matter: Instructing Solicitor, Mills Oakley Lawyers

NSW LAND AND ENVIRONMENT COURT NO. 11095 OF 2012

(Grayson-v-Office of Environment and Heritage) – Landholder Representation regarding Illegal Clearing Matter: Instructing Solicitor, Hannigans Solicitors

SUPREME COURT CLAIM NO. S9495 OF 1999

(Richmond River Shire Council and Ors–ats- Iron Gates (in liquidation) and Anor) – Defense of Claim for Compensation – Proposed Iron Gates development, Evans Head: Instructing Solicitor: Hannigans Solicitors

NSW LAND AND ENVIRONMENT COURT CLASS 1 PROCEEDINGS NO 10087 OF 2009

(Ballina Shire Council –ats- Doojoo Pty. Ltd) - Proposed Hard Rock Quarry, Ballina: Instructing Solicitor, Walters Solicitors

NSW LAND AND ENVIRONMENT COURT NO. 10226 OF 2006

(Richmond Valley Council –ats- Newton Denny Chapelle) – Proposed Poultry Farm, Richmond Valley NSW: Instructing Solicitor, Hannigans Solicitors

NSW LAND AND ENVIRONMENT COURT CASE NUMBERS 50028 AND 50029 OF 2009

(Sommerville and Iaana –ats- Department of Environment and Climate Change) - Landholder Representation in Regard to Illegal Clearing Matter: Instructing Solicitor, Hannigans Solicitors

COMMONWEALTH (EPBC ACT)

LANDHOLDER REPRESENTATION REGARDING ALLEGED OFFENCES UNDER EPBC ACT

– Impact on the Natural Grassland TEC: Instructing Solicitor, Mills Oakley Lawyers

Appendix B – Initial Proposal

Legend

GENERAL

- STRUCTURE PLAN BOUNDARY
- BOUNDARY
- EXISTING PARCEL BOUNDARIES
- EXISTING PARCEL EASEMENT
- URBAN RESIDENTIAL
- BALANCE LOT - MEDIUM DENSITY
- FUTURE DEVELOPMENT
- LOCAL CENTRE
- LOCAL PARK
- OPEN SPACE
- DRAINAGE
- PEDESTRIAN CONNECTIONS
- MULTI FUNCTION SPINE
- BUSHFIRE MAINTENANCE TRACK
- TEMPORARY TURNAROUND EASEMENT

PROSPECT CRES
BRENDAN WAY
801 SP261302
OPEN SPACE
5.533ha
6 SP145377
296 4885m²
3 SP293881
4 SP293881
12.5M ACCESS STREET
221m²
1459m²
ROAD NO. 20
ROAD NO. 10
ROAD NO. 18
ROAD NO. 29
ROAD NO. 30
ROAD NO. 11
ROAD NO. 9
15M ACCESS STREET
ROAD NO. 4
LOCAL PARK
6982m²
ROAD NO. 16
ROAD NO. 10
ROAD NO. 12
BALANCE LOT
2.546ha
BALANCE LOT
5684m²
459m²
ROAD NO. 3
ROAD NO. 5
ROAD NO. 6
14M ACCESS STREET
OPEN SPACE
6.166ha
21M COLLECTOR ROAD
1553m²
2 RP169475
7 RP57455
21M COLLECTOR ROAD
5 SP293881
ROAD NO. 13
15M ACCESS STREET
ROAD NO. 15
ROAD NO. 10
COLLECTOR ROAD
2 RP86773
1 RP86773
3 RP148004
ROAD NO. 4
MULTI FUNCTION SPINE
2.531ha
LOCAL PARK
10086m²
LOCAL CENTRE
9849m²
BALANCE LOT
10274m²
ROAD NO. 17
2 RP165178
ROAD NO. 14
DOUBLE JUMP ROAD

SCALE 1:2000 (A1) / 1:4000 (A3)

0 20 40 100

FITENI HOMES

36-40, 42, 44, 48, 50, 52 & 56 Double Jump Road, 26 Prospect Crescent & 27 Brendan Way, Victoria Point - Overall Plan

DOUBLE JUMP ROAD

PROJECT_DRG NO 0715-0859-04_D004-00 REV 07 DRWN SE CHKD NM APPROV MH DATE 23.05.2019

Tract

Appendix 3 – Amended Proposal

LEGEND

SITE BOUNDARY

LEGEND

Precinct 2	25.11.2020	HA	%
Traditional Lots	12.72	HA	29.24 %
Medium Density	5.16	HA	11.86 %
Future Development	0.49	HA	1.12 %
Sub Total Saleable	**18.37**	**HA**	**42.22 %**
OPEN SPACE			
Recreation Open Space	2.48	HA	5.70 %
Conservation	11.96	HA	27.49 %
Multi Fuctional Spine	1.83	HA	4.20 %
Bushfire Buffer	0.02	HA	0.05 %
Pedestrian Link	0.07	HA	0.17
Sub Total Open Space	**16.36**	**HA**	**37.60 %**
COMMERCIAL			**%**
Local Centre	0.92	HA	2.11 %
Sub Total Open Space	**0.92**	**HA**	**2.11 %**
ROADS		HA	%
Roads	7.76	HA	17.84 %
Landscape Buffer	0.10	HA	0.23 %
Sub Total Roads	**7.86**	**HA**	**0.23 %**
TOTAL	**43.51**	**HA**	**82.16 %**

LOT BREAK DOWN

Lot Typology	Average Lot Size	Number of Lots	Percentage
28 X 12.5	350m²	1	0.37 %
28 X 14	392m²	6	2.20 %
28 X 16	448m²	5	1.83
30 X 12.5	375m²	66	24.18 %
30 X 14	420m²	76	27.84 %
30 X 15	450m²	51	18.68 %
30 X 16	480m²	39	14.29 %
30 X 18	540m²	24	8.79 %
30 X 20	600m²	5	1.83 %
TOTAL		**273**	**100 %**
Average Lot Size (approx)		**466**	**m²**

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 2 - RAL Design	Double Jump	0715-0859-11 DR02	01	25.11.2020	GH	NM	SP	1:2500 (A3)

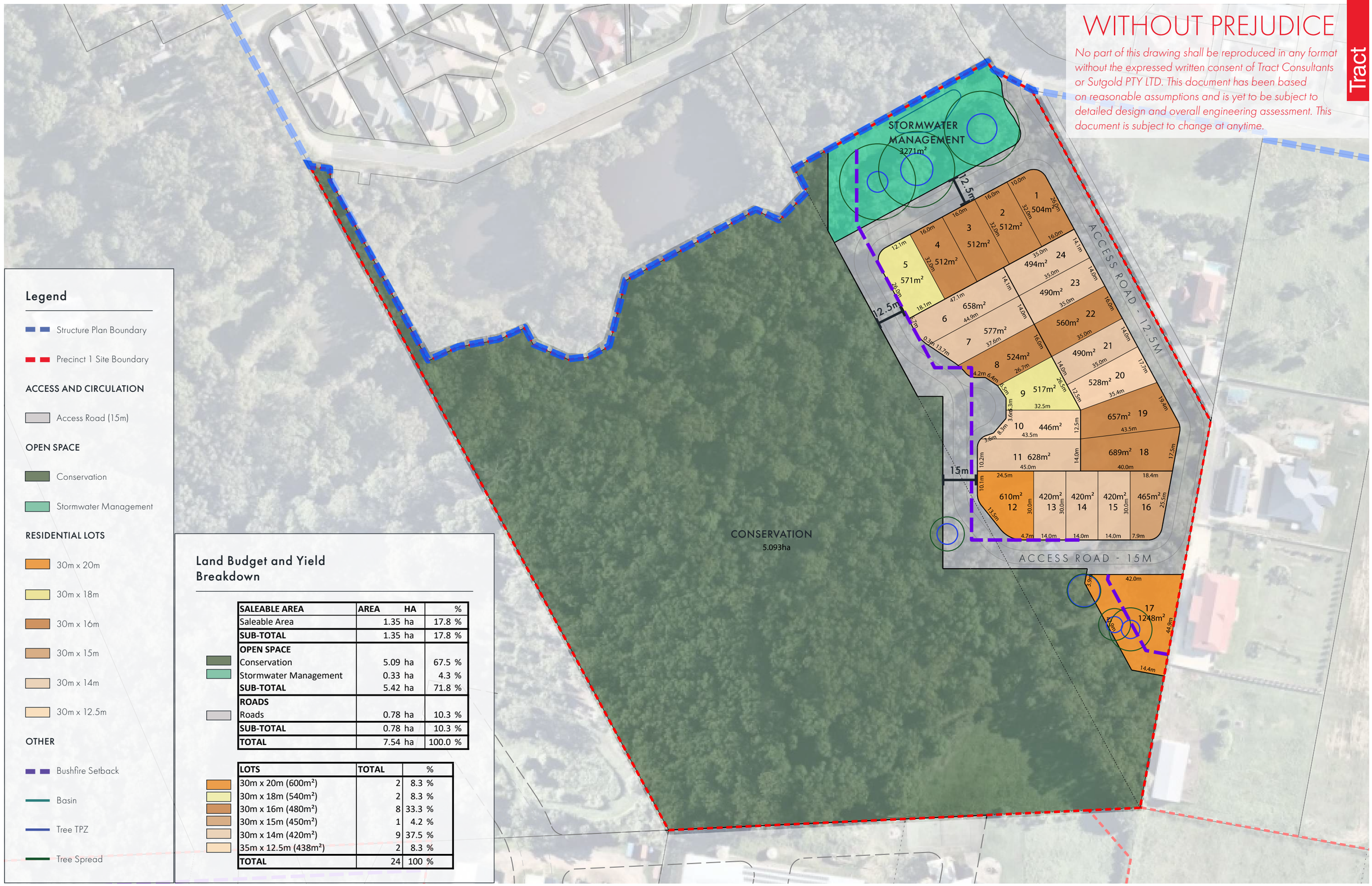
0 25 50 100

Appendix 4 – Precinct 1 Change

WITHOUT PREJUDICE

No part of this drawing shall be reproduced in any format without the expressed written consent of Tract Consultants or Sutgold PTY LTD. This document has been based on reasonable assumptions and is yet to be subject to detailed design and overall engineering assessment. This document is subject to change at anytime.

Tract



Legend

- Structure Plan Boundary
- Precinct 1 Site Boundary

ACCESS AND CIRCULATION

- Access Road (15m)

OPEN SPACE

- Conservation
- Stormwater Management

RESIDENTIAL LOTS

- 30m x 20m
- 30m x 18m
- 30m x 16m
- 30m x 15m
- 30m x 14m
- 30m x 12.5m

OTHER

- Bushfire Setback
- Basin
- Tree TPZ
- Tree Spread

Land Budget and Yield Breakdown

SALEABLE AREA	AREA	HA	%
Saleable Area	1.35	ha	17.8 %
SUB-TOTAL	1.35	ha	17.8 %
OPEN SPACE			
Conservation	5.09	ha	67.5 %
Stormwater Management	0.33	ha	4.3 %
SUB-TOTAL	5.42	ha	71.8 %
ROADS			
Roads	0.78	ha	10.3 %
SUB-TOTAL	0.78	ha	10.3 %
TOTAL	7.54	ha	100.0 %

LOTS	TOTAL	%
30m x 20m (600m²)	2	8.3 %
30m x 18m (540m²)	2	8.3 %
30m x 16m (480m²)	8	33.3 %
30m x 15m (450m²)	1	4.2 %
30m x 14m (420m²)	9	37.5 %
35m x 12.5m (438m²)	2	8.3 %
TOTAL	24	100 %

Drawing Title	Project Name		Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 1- Concept Plan	Double Jump Road, Victoria Point	FiteniProperties	715-0859-00-U-05-DR01	01	25.06.2021	SE	SP	SP	1:1500 (A3) 0 20 40 80

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28 July 2021

Your Ref: DBE:GQ:314615
Our Ref: LCM9376
File No: **39/2021**

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By email: ***dale@anderssens.com.au***
megan@anderssens.com.au

Without Prejudice

Dear Colleagues

Sutgold Pty Ltd -v- Redland City Council
Planning and Environment Court Appeal No. 39 of 2021

We refer to the Appellant's offer to settle this matter originally sent to Council on 21 June 2021, with revised layout plan provided on 25 June 2021 and correspondence dated 9 July 2021 extending the currency of the offer.

As you are aware, this offer was presented to Council at the General Meeting on 21 July 2021.

The following course of action will be necessary to negotiate a resolution of Appeal 39/2021:-

- A minor change application being made for appeal 39/2021 consistent with the layout in 'Precinct 1 – Concept Plan drawing no. 715-0859-00-U-05-DR01 dated 25 June 2021'; and
- A minor change application made concurrently with the above minor change for appeal 1612/2020 that amends the future development area located in Lot 801 on SP 261302 to conservation; and
- Lot 801 on SP 261302 being dedicated to Council as part of appeal 39/2021 at no cost to Council; and
- Negotiation of reasonable and relevant conditions for appeal 39/2021; and
- Negotiation of Infrastructure Agreement for appeal 39/2021.

Accordingly, please find ***attached*** draft conditions package and Infrastructure Agreement which Council would be willing to settle Planning and Environment Court Appeal 39/2021 should the above be satisfactorily fulfilled.

Yours sincerely

Clare Burgin
Senior Solicitor
Legal Services
General Counsel Group

Appendix 5 – Respondent's Reasons

In the Planning and Environment Court No. 1612/20
Held at: Brisbane

Between:	**SUTGOLD PTY LTD**	Appellant
And:	**REDLAND CITY COUNCIL**	Respondent
And:	**CLAY GULLY PTY LTD**	Co-Respondent by Election

RESPONDENT'S REASONS FOR REFUSAL

Pursuant to paragraph 2 of the Order of His Honour Judge Williamson QC made 23 July 2020 the Respondent notifies the following matters to be relied upon to support refusal of the Appellant's proposed development:

1. The proposed reconfiguration of a lot is not supported as it:
   (a) Does not protect and enhance environmental values and does not promote walkable neighbourhoods or climatically responsive sites or building design;
   (b) Inadequately considers infrastructure delivery, being neither integrated nor sequenced to deliver a complete community in a timely and enduring manner;
   (c) Ad hoc development which would compromise the coordinated and efficient development of the wider area as a well-designed future urban community; and
   (d) Inadequately addresses bushfire risk;
   (e) Approval of the proposed reconfiguration would not advance the purposes of the *Planning Act 2016*.

A: Form of the Development

Environmental Values

2. The development fails to provide for the east-west and north-south movement of fauna through the establishment of habitat corridors as part of a wider structure plan area.

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3. The development does not protect and enhance existing natural corridors where there are opportunities for environmental enhancement activities to support significant ecosystems, protect koala habitat and improve natural corridor linkages.
4. The proposed multi-function link is not adequate for the safe movement of Koalas and other fauna as its multi-function nature includes storm water, a neighbourhood park and active transport outcomes in the form of pathways and cycle ways which is detrimental to achieving this outcome. The proposed neighbourhood recreation park and residential lots would sever the ability to create safe corridors.
5. The development has not adequately demonstrated that bio-retention lots and other future development lots protect, enhance, manage and minimize impacts on the environmental values of the site.

Walkable Neighbourhoods

6. The high number of residential lots located within a cul-de-sac does not support the promotion of a logical pattern of development and creation of a well-structured and walkable neighbourhood.
7. The proposed development provides inadequate linear open space and connectivity between the parks and open space network as part of the wider structure plan area, particularly its connectivity through to the north, forming part of a planned network of linear open space.

Lot Orientation and Climatically Responsive Site and Building Design

8. The proposed pattern of development promotes the majority of lots with an east-west facing orientation which is not considered to be a climatically responsive site design, which maximises solar access to the north in winter and minimising solar access to the west in summer.

B: Infrastructure Delivery

Waste Water

9. The proposed reconfiguration relies upon the mechanical pumping of wastewater which is unacceptable having regard to the whole-of-lifecycle cost of pumping infrastructure.
10. The development does not provide for the necessary upgrades to the sewerage treatment network and would result in a higher capacity than planned for in the

Local Government Infrastructure Plan.

Traffic

11. It has not been demonstrated how the impacts the proposed reconfiguration may have upon the local road networks can be managed.
12. The reconfiguration will result in a 21 meter wide north-south collector road which will prevent the creation of a Boulevard entry treatment with 26 meter wide road reserve, incorporating a central median and planted verge at a key intersection within wider structure plan area.

Stormwater

13. It has not been demonstrated that the resultant stormwater drainage impacts will not trigger downstream flooding impacts.

C: Structure Planning

14. The development would compromise the coordinated and efficient growth of the area as a well-designed future urban community. Specifically, the delineation of environmental corridors, infrastructure provision and sequencing across all of the landholdings in the emerging community area require an informed, coordinated planning approach across the wider structure plan area.

D: Bushfire

15. The proposed development does not adequately address the State Planning Policy bushfire mapping or assessment benchmarks particularly in relation to the management of fuel loads and the achievement of the required radiant heat flux for residential development.

E. Other Relevant Matters

16. The subject land is located outside the Priority Infrastructure Area of the Respondent's Local Government Infrastructure Plan.
17. The proposed reconfiguration does not adequately facilitate the regeneration of desired environmental corridors.
18. The proposed reconfiguration does not adequately address the provision and sequencing of infrastructure.
19. The proposed reconfiguration does not accord with the Council's coordinated structure planning approach to plan making and the growth of new urban areas within Redland City.

F. Advancing the purpose of the Act

20. Approving the proposed reconfiguration does not advance the purpose of the Planning Act as:

    (a) It does not take into account the short and long-term environmental effects of the proposed reconfiguration;

    (b) It does not avoid or otherwise minimise the adverse environmental effects of the proposed reconfiguration; and

    (c) It does not supply infrastructure in a coordinated, efficient and orderly way.

.....

Redland City Council
Solicitor for the Respondent

Dated: 6 August 2020

Appendix 6 – Appellant's Reasons

In the Planning and Environment Court Held at: Brisbane		No. 1612/20
Between:	**SUTGOLD PTY LTD**	Appellant
And:	**REDLAND CITY COUNCIL**	Respondent
And:	**CLAY GULLY PTY LTD**	Co-respondent By Election

FURTHER AMENDED APPELLANT'S LIST OF MATTERS SUPPORTING APPROVAL

Pursuant to paragraph 3 of the Order of His Honour Judge Williamson QC made 2 February 2021, as amended by paragraph 1 of the Order of His Honour Judge Rackemann of 11 March 2021, the Appellant notifies the following matters to be relied on to support approval of the proposed development:

INTEGRATED AND SEQUENCED DEVELOPMENT

1. The proposed development is an orderly, integrated and in-sequence project to be developed consistent with the Victoria Point Emerging Community Structure Plan (VPECSP) prepared by the Appellant at the request of the Respondent Council, a master planned, urban residential community that meets demand for urban growth within the Respondent's local government area.

Particulars

(a) the VPECSP contains an area of approximately 175 hectares between Double Jump Road, Bunker Road and Cleveland Redland Bay Road in Victoria Point;

(b) the VPECSP is based on a comprehensive structure planning exercise:

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(i) prepared in accordance with Planning Scheme Policy 5 at the request of the Respondent;

(ii) supported by a large body of technical studies consisting of:

(A) Flood and Stormwater Management Plan;

(B) Open Space and Recreation Study;

(C) Multi-Purpose Corridor Strategy;

(D) Housing Needs Assessment;

(E) Retail Needs Assessment;

(F) Traffic Impact Assessment Report;

(G) Traffic Assessment Report;

(H) Civil Engineering Structure Planning Report;

(I) Water Supply Service Strategy;

(J) Sewer Network Analysis;

(K) Western Sewerage Options Assessment Report; and

(L) Strategic Bushfire Hazard Assessment and Management Plan;

(c) which was the subject of extensive coordination with other landholders in the structure plan area and extensive public consultation via a community engagement program which included; a website, social media and shop front presence; resident surveys; community and school design workshops; community activities; social media competitions; and one-on-one discussions;

(d) which includes provision of infrastructure and services including water, sewer, roads, stormwater and electricity of a standard and capacity to meet the needs of the VPECSP;

(e) which involves staging to ensure efficient and orderly development and is co-ordinated to ensure that the infrastructure is provided in sequence;

(f) which was prepared following a detailed analysis of site attributes to ensure a site responsive design, including existing topographical features and biodiversity values and provides a balanced and co-ordinated outcome;

(g) which includes a wildlife corridor system in the structure plan area which has been established to ensure that vegetated linkages provide for the safe movement of fauna species known to occur in the area or that are considered as having potential to occur in the local area. The wildlife corridor system will link currently isolated patches of bushland within the VPECSP;

(h) which is designed in accordance with modern urban design principles and seeks to minimise small pockets of residential development that are physically isolated, improving the functionality and quality of the residential community;

(i) which is consistent with and supports the settlement pattern and urban form in Victoria Point by representing a logical and appropriate extension to the existing pattern of urban growth and uses in the Victoria Point locality;

(j) the proposed development represents orderly development and can proceed independently of other land due to its extensive major road frontage. It also makes provision for road connections to adjoining land so as to not compromise the orderly development of that other land;

(k) the proposed development footprint has been informed by ecological, engineering and economic considerations including:

(i) the continuation of an enhanced ecological corridor through the site, which incorporates Moogurrapum Creek and connects to and widens a planned ecological corridor to the north of the site;

(ii) the need for efficient use of urban land and existing infrastructure and the provision of infrastructure to meet the needs of the proposed development;

(iii) the need for a design which has regard to urban design principles and will ensure that residents will have access to appropriate open space and recreation areas, including local recreation parks and a multi-function spine that integrates with the existing natural environment,

provides for retention of significant vegetation and avoids negative ecological impacts while providing a high amenity to residents;

(l) open space lots are proposed to provide healthy and active communities and nature conservation;

(m) the proposed allocation of land for recreation and sport purposes:

(i) provides for high-quality recreation parkland within close proximity to residents;

(ii) takes advantage of the characteristics of the site to deliver recreation opportunities which offer access to nature;

(iii) advances connectivity and permeability within the site; and

(iv) delivers balance between adequate provision of recreation land and consideration of ongoing maintenance obligations.

(n) the proposed development will include a number of sustainability measures including water sensitive urban design, collection and reuse of stormwater, enhancement of habitat and ecological corridors and the retention of bio-reserves;

(o) the proposed development is readily accessible and proximate to existing and planned services and facilities within the Victoria Point centre and represents a logical expansion of land for residential purposes;

(p) the multi-function spine running east-west through the development site will provide ecological, drainage and active and passive recreation functions.

REGIONAL PLANNING

2. The proposed development advances (and achieves locally) the planning intent of the South East Queensland Regional Plan 2017 (Shaping SEQ).

Particulars

(a) in ShapingSEQ the Land is within the Urban Footprint; a consolidation area; and within the Victoria Point SA2;

(b) regional planning documents have established a clear planning intent for the site to be developed for urban purposes since 2005, with the inclusion of the site in the Urban Footprint in the South East Queensland Regional Plan 2005-2026 and as a Local Development Area in SEQRP 2009-2031 since 2009;

(c) the proposed development generally accords with the objectives, dwelling targets, policies and principles prescribed by Shaping SEQ as:

(i) the proposed development complies with the planning intent established in ShapingSEQ for the site by delivering a high-quality community, in a location that will support a consolidated urban settlement pattern;

(ii) the site is ideally situated to build on and support the existing social and economic infrastructure in Victoria Point;

(iii) the proposal will contribute towards urban consolidation targets under ShapingSEQ;

(iv) the proposed development is consistent with the VPECSP and makes efficient use of urban land and existing infrastructure;

(v) the VPECSP:

(A) achieves a dwelling density gradient away from the Victoria Point Shopping Centre and bus station;

(B) provides the opportunity for housing to cater for a diverse range of community and housing needs;

(C) efficiently utilises the land with:

(1) standard residential densities of 10 lots per hectare (note density includes local parks and roads);

(2) medium density housing of 30 lots per hectare.

NEED

3. There is economic, planning and community need for the proposed development.

Particulars - residential

(a) the reconfiguring a lot proposal would result in residential choice and diversity by providing for a mix of lot sizes to accommodate the requirements of a growing population;

(b) the location of the site means that the subject development will help reinforce a compact form of settlement, resulting in improved efficiencies and use of existing infrastructure in the surrounding area;

(c) the proposed site is well located:

(i) to infrastructure, and the efficient use of infrastructure in rapid growth areas is important to ensure a sustainable economic return;

(ii) to serve the community given its proximity to Victoria Point Shopping Centre, Cleveland Redland Bay Road, a range of public and private primary and secondary schools and existing and proposed recreation activities.

(d) the proposal will ensure a competitive environment for the supply of lots, with much of the longer term growth currently within the control of one developer (Lendlease at Shoreline);

(e) the subject proposal represents orderly development on a site designated to accommodate population and dwelling growth in an area proving very popular for home buyers;

(f) the proposed development will provide quality housing stock in an attractive setting within an area that is designated for residential expansion;

(g) based on current population forecasts and land supply within Redlands there is a need for residential land to avoid impacts on the construction industry, an industry that is the largest contributor to Gross Regional Product in the Redlands and one of the largest employers;

(h) the proposed development is needed to accommodate the planned demand for future urban growth within the Respondent's local government area, and the land identified for residential development in the respondent's scheme is not capable of delivering what the public expects and can realistically be achieved, in particular:

(iii) the Redland Local Government Area, including the suburbs immediately around the subject site, are projected to grow over the next 20 years. In a growth area, there is need for diversity and choice of household product;

(iv) actual demand in both the Redlands and more specifically Victoria Point exceeds projections;

(v) there has been a significant decline in broad hectare stock available in Victoria Point;

(vi) satisfying current demand is dependent on the development of small and fragmented parcels that increase the high risk of an inadequate supply of residential land for detached housing;

(vii) the proposed development efficiently utilises broad hectare land suitable for urban development to satisfy the demand for standard residential lots;

(i) the development contributes to demographic renewal through offering housing and facilities sought by families and dependent children;

(j) the development has been supported by the local community which has been demonstrated by:

(viii) the results of community surveys;

(ix) public notification of the development application was undertaken from 11 July 2018 to 3 August 2018. The respondent has advised that 290 properly made submissions were received, of those; the vast majority supported the approval of the Development Application.

Particulars - Local Centre

(b) the proposed location for the local centre will satisfy local convenience needs for residents;

(c) will improve choice and convenience for the local community reducing the need for local residents to travel for their convenience needs;

(d) is proposed on a site that is accessible to the population to be served by pedestrians, cyclists, private motor vehicles and public transport;

(e) is not of a size that will compromise the viability of a higher order centre.

ECOLOGY

4. The proposed development appropriately balances the efficient development and use of the subject land with the provision of an improved ecological outcome.

Particulars

(a) the Land's current overall ecological function and value has been diminished by:

(i) historical clearing including residential dwellings and infrastructure including for rural/agricultural uses, chicken sheds and horse training facilities;

(ii) the poor condition and connectivity of habitat limits the range of species that reside in or move through the subject land;

(iii) edge effects;

(iv) being bordered by Double Jump Road to the south that:

(A) has a speed environment of 80km per hour;

(B) has inadequate control of koala crossings and compromises safe koala movement across the road;

(C) severely compromises safe koala movement from the north to the south by the presence of barriers and domestic dog attacks.

Moogurrapum Creek

(b) Moogurrapum creek riparian zone:

(v) is a creek corridor which connects bushland habitats to the north-east and south of the subject land;

(vi) currently has highly degraded environmental values, is weed infested and contains no fauna specific movement infrastructure to enable safe movement across Double Jump Road;

(vii) the riparian zone and associated terrestrial habitats will be significantly enhanced by way of a rehabilitation plan resulting in a considerable increase in overall habitat values in the creek in this location in particular:

(A) the removal of exotic trees, shrubs and vines which are degrading vegetation structure in all strata;

(B) revegetating the creek corridor with native species from the pre-clear regional ecosystem. These works will remove a significant source of weed seed from the Moogurrapum Creek corridor, improve bank stability, reinstate habitat for koala and other native species, and improve habitat connectivity for koala and other native species;

(C) an internal road network that provides buffering to the residential and community uses minimising the risk of edge effects.

Corridors

(c) the development proposes to reinstate east-west habitat connectivity by dedicating and revegetating land along the northern boundary of the site. The development proposes to improve north-south habitat connectivity along Moogurrapum Creek by dedicating land, removing weeds that dominate this riparian corridor and providing significant infill planting using species from the pre-clear regional ecosystem;

(d) additionally the proposed east/west multi-purpose spine will provide for tree retention and will provide additional ecological benefits.

Habitat

(e) in respect of the removal of vegetation;

(i) the removal of non-juvenile koala habitat trees occurs only where mapping is inaccurate or where unavoidable in areas mapped as high or medium value rehabilitation;

(ii) maintains the majority of significant vegetation near Moogurrapum Creek as an open space corridor;

(iii) the values of the corridor will be significantly improved through revegetation;

(iv) the open space network and landscape treatment will continue to provide habitat and movement opportunities for conservation significant species known from this landscape such as koala. It will also continue to support other species of local interest such as swamp wallaby.

(f) the proposed development protects and enhances habitat condition and fauna movement via the provision of continuous ecological corridors and through implementation of a Vegetation Management and Rehabilitation Plan which will:

(i) significantly exceed the State's 3:1 offset requirement;

(ii) ensure that an appropriate terrestrial fauna crossing can be implemented on Double Jump Road at Moogurrapum Creek;

(g) only one crossing of the east-west habitat corridor is proposed. The road crossing will incorporate a fauna underpass and directional fencing to allow for grade separated safe passage underneath the road to minimise fauna vehicle strike;

(h) furthermore, habitat connectivity is also addressed through the VPECSP as the creation of wildlife corridors will link currently isolated patches of bushland within the VPECSP and substantially improve vegetated linkages and fauna movement opportunities.

TRAFFIC AND CONNECTIVITY

5. The proposed development will provide a high level of connectivity for cyclists, pedestrians and motor vehicle traffic which is currently absent in this locality.

Particulars

(a) Double Jump Road is a 2 lane sub-arterial road of rural standard with a pavement width of 7 to 8 metres;

(b) the development proposes a collector street running north/south from Double Jump Road to the land to the north and another collector street running east-west through the proposed development to provide internal connectivity for pedestrians, cyclists, a future bus route and private vehicles, and which can be extended by others as development continues to the west;

(c) the multi-function spine running east-west through the development site will provide ecological, drainage, active and passive recreation functions;

(d) the development will minimise external traffic impacts and supports orderly and cost effective development within an identified growth area;

(e) the development is consistent with good road, public transport and active transport planning, supporting the development of an integrated transport network;

(f) the movement network associated with the proposed reconfiguration has been based on an appropriately connected road layout. The subdivision will be accessed externally via Double Jump Road and future connection from the north. The development will also have a high level of internal accessibility and provides for orderly development through the provision of connections to future urban development on adjoining sites;

(g) the proposed development is a master planned community that has been designed to achieve an attractive walkable community with integrated and accessible open space networks. Internal accessibility for cyclists and pedestrians is provided via the proposed east/west multi-purpose spine and along the north-south collector street, pedestrian access through-ways with proximity to the open space. This offers a network of path connections within the Structure Plan area and beyond, that is legible, safe, attractive and connected;

(h) where culs-de-sac are proposed, they are typically short in length and connect directly with esplanade roads or collector status roads within a short travel distance. Good connectivity for vehicle movements is provided, whilst encouraging a lower speed, safe, legible and active transport network.

INFRASTRUCTURE

6. The proposed development is able to be efficiently and cost effectively serviced by water, stormwater, sewerage, electricity and telecommunications infrastructure.

Particulars

(a) the proposed development will deliver a structure planned outcome which will result in a settlement pattern which facilitates the efficient, cost effective and co-ordinated delivery of infrastructure.

(b) there is existing urban development served by the respondent's municipal network for sewerage to the north of the site. Infrastructure for the proposed development will be integrated and sequenced in order to assist in delivering complete communities in a timely manner;

(c) while the development currently lies outside of the Priority Infrastructure Area, it directly abuts that Area. Consequently, it can be efficiently and economically connected to Council's municipal sewerage reticulation and water supply systems;

(d) In respect of sewerage, there is currently unused treatment capacity in the Victoria Point Sewage Treatment Plant (STP) which could be utilised for the development. Alternatively, the payment of standard infrastructure charges will provide adequate funds for the upgrade of both trunk sewage transport infrastructure and the STP to accommodate the sewage flows from this development;

(e) No upgrades are required to the water supply system to adequately service this development.

OTHER RELEVANT MATTERS

7. The proposed development is consistent with reasonable community expectations as informed by the planning provisions that apply to the site, including the inclusion of the land in the Urban Footprint since 2005 and the inclusion of the land in the Emerging Community Zone under the Redland City Plan 2018. This is further demonstrated by the large number of submissions (approximately 290) made supporting the application during the public notification period.

8. The City Plan 2018 was adopted by the respondent in July 2018 and came into effect in October 2018. It;

   (a) reflects the intended urban use of the land and represents the current planning of the land;

   (b) given the inclusion of the land in the urban footprint of the regional plan for a significant period of time, reflects the proposed policy for the land.

9. The draft South West Victoria Point Local Plan prepared by the respondent;

   (a) is a document to which no weight should be given as it is not a planning instrument that has any statutory force and has not advanced to any significant extent;

   (b) was prepared in circumstances where a number of development applications had been submitted and were under assessment;

   (c) fails to provide for efficient and orderly development;

   (d) was not formulated on the basis of an adequately based planning study and was not the subject of consultation with the community or the structure plan proponents.

10. Notwithstanding Paragraph 9 above, the proposed development provides for the balanced and reasonable implementation of the strategies contained in the draft South West Victoria Point Local Plan.

11. Development of the land is supported by ShapingSEQ.

12. There is a planning and economic need for the development as demonstrated by economic assessments undertaken for the project and the inclusion of land in the Emerging Community Zone.

13. The development applied for would provide housing diversity and choice.

14. The development appropriately balances the use of the subject land efficiently while protecting environmental values.

15. Weed management and revegetation works will significantly improve habitat values and habitat connectivity.

16. Although located outside of the Priority Infrastructure Area the development can be efficiently and cost effectively serviced by appropriate infrastructure and without reducing the standard or delaying the provision of infrastructure to areas within the PIA.

16A. Insofar as the Local Government Infrastructure Plan and Priority Infrastructure Area fails to include the VPECSP Area those parts of the Respondent's Planning Scheme:

(a) have been superseded by time and events; and

(b) are not soundly based;

Particulars

(i) This Honourable Court has approved development within the VPECSP Area consisting of:

(A) a development application made by the appellant for 176 residential lots at 72,74, 78 and 82 Double Jump Road, 158-166, 168-172 and 174-178 Bunker Road, Victoria Point;

(B) a development application made by Clay Gully Pty Ltd for 261 residential lots adjoining the northern boundary of the subject land at 47-69 Brendan Way, 21-31 Clay Gully Road, Victoria Point; and

(C) a development application by PPV Victoria Point Land Pty Ltd for a retirement facility of up to 264 dwellings at the eastern boundary of 673-685, 687-707 and 711-719 Redland Road and 10 Double Jump Road, Victoria Point which adjoins the subject land at its eastern extent;

as shown on the plan contained as Schedule 1.

(ii) In respect of each of the developments referred to above in (i) the Respondent has entered into an infrastructure agreements which permit each development to connect to urban services in return for a financial contribution in addition to the levied charges under the Respondent's Adopted Infrastructure Charges Resolution.

(iii) The total of additional charges referred to in subparagraph (ii) are $4,910,000.

16B. In the premises:

(a) the location of the subject land outside Local Government Infrastructure Plan and Priority Infrastructure Area is not a valid reason for refusal; and

(b) if the Respondent would be put to additional cost for providing trunk infrastructure over and above the levied charge as a result of the development of the subject land (which is not admitted), the Court has power to impose an extra payment condition pursuant to s130 of the *Planning Act 2016*.

17. Furthermore, the Development Application warrants approval as:

(a) the application provides for orderly development and is in accordance with sound town planning policy and practice; and

(b) it can be provided without any unacceptable impacts or adverse town planning consequences;

18. The Development Application otherwise advances the purpose of the *Planning Act 2016* by:

(a) contributing to the achievement of diverse, efficient, resilient and strong economies that allow the Victoria Point community to meet its needs but not compromise the ability of future generations to meet their needs;

(b) maintaining and enhancing the cultural, economic, physical and social wellbeing of people and communities;

(c) providing for housing choice, diversity and affordability;

(d) encouraging investment, economic resilience and economic diversity;

(e) supplying infrastructure in a coordinated, efficient and orderly way;

(f) applying amenity in the built environment in ways that are cost-effective and of public benefit;

(g) avoiding or otherwise minimising the adverse environmental effects of development.

Signed: Anderssen Lawyers
Description: Anderssen Lawyers Pty Ltd - Solicitors for the Appellant
Dated: 15 June 2021

BUNKER ROAD

BUNKER ROAD

BRENDAN WAY

CLEVELAND REDLAND BAY ROAD

DOUBLE JUMP ROAD

Clay Gully PTY LTD

Sutgold PTY LTD

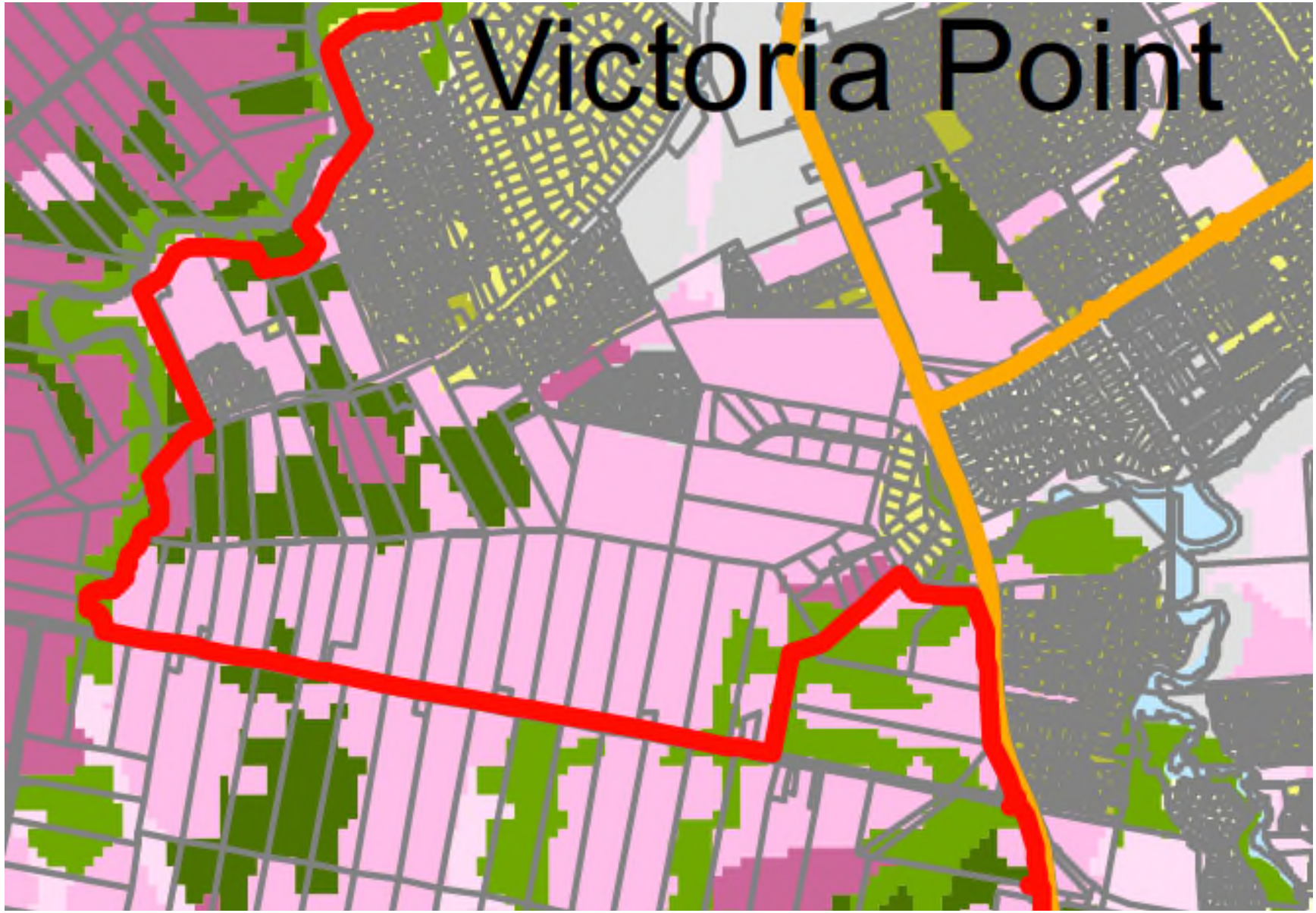
PPV Victoria Point Land PTY LTD

Legend

- Victoria Point West Emerging Community Zoned Land
- Precinct 2 Site Boundary
- Priority Infrastructure Area
- Approved Development, land that council is committed to service
- Conservation,Open Space, Park and Drainage

Drawing Title	Project Name		Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Overall Plan	Double Jump Road, Victoria Point	FiteniProperties	715-0859-04-L-04-DR011	03	01.06.2021	SE	PM	SP	

Appendix 7 – Koala Mapping



South East Queensland Koala Conservation. State Planning Regulatory Provisions. Assessable Development Area Koala Habitat Values.

Map Legend

- Priority koala assessable development area (PKADA)
- koala assessable development area (KADA)

Koala Habitat Value Category

Bushland Habitat
- High Value Bushland
- Medium Value Bushland
- Low Value Bushland

Suitable for Rehabilitation
- High Value Rehabilitation
- Medium Value Rehabilitation
- Low Value Rehabilitation

Other Areas of Value
- High Value Other
- Medium Value Other
- Low Value Other
- Generally not suitable
- Water
- Urban Footprint
- Cadastre (January 2010)
- Major Roads
- SPRP Does not apply

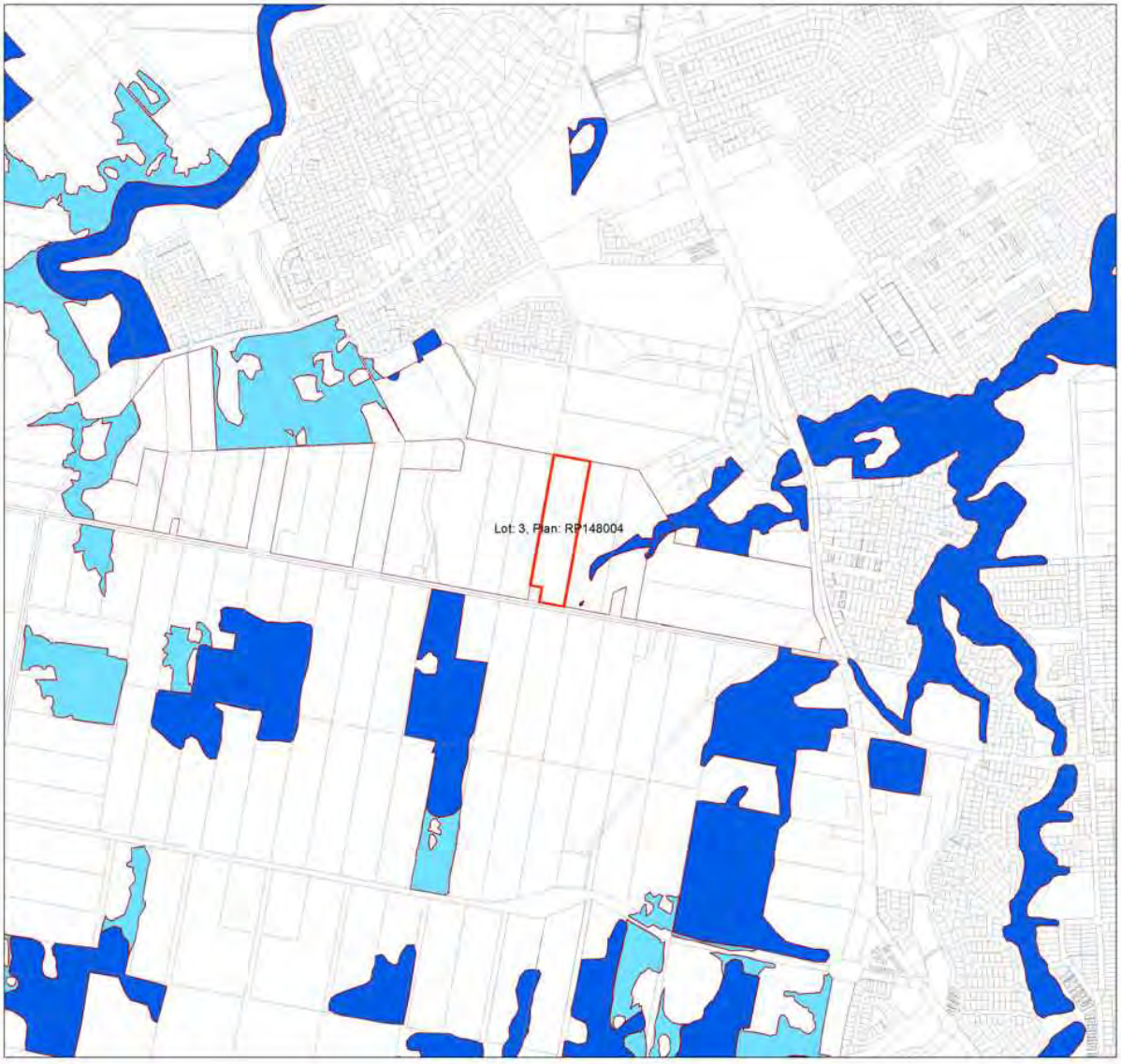
map SPRP_KHV 20
May 31, 2010.
(SEQKPA v1.2)

Map index

GDA94, MGA56
Scale 1 : 50,000 at A1

Queensland Government

Appendix 8 – Regulated Vegetation Mapping



Regulated Vegetation Management Map

Legend

- Lot and Plan
- Category A area (Vegetation offsets/compliance notices/VDecs)
- Category B area (Remnant vegetation)
- Category C area (High-value regrowth vegetation)
- Category R area (Reef regrowth watercourse vegetation)
- Category X area (Exempt clearing work on Freehold. Indigenous and Leasehold land)
- Water
- Area not categorised
- Cadastral line
  Property boundaries shown are provided as a locational aid only

LOCALITY DIAGRAM

N

0 200 400 600 800 1,000 m

This product is projected into:
GDA 1994 MGA Zone 56

Disclaimer:
While every care is taken to ensure the accuracy of this product, the Department of Natural Resources, Mines and Energy makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.dnrme.qld.gov.au or contact the Department of Natural Resources, Mines and Energy.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.

Queensland Government

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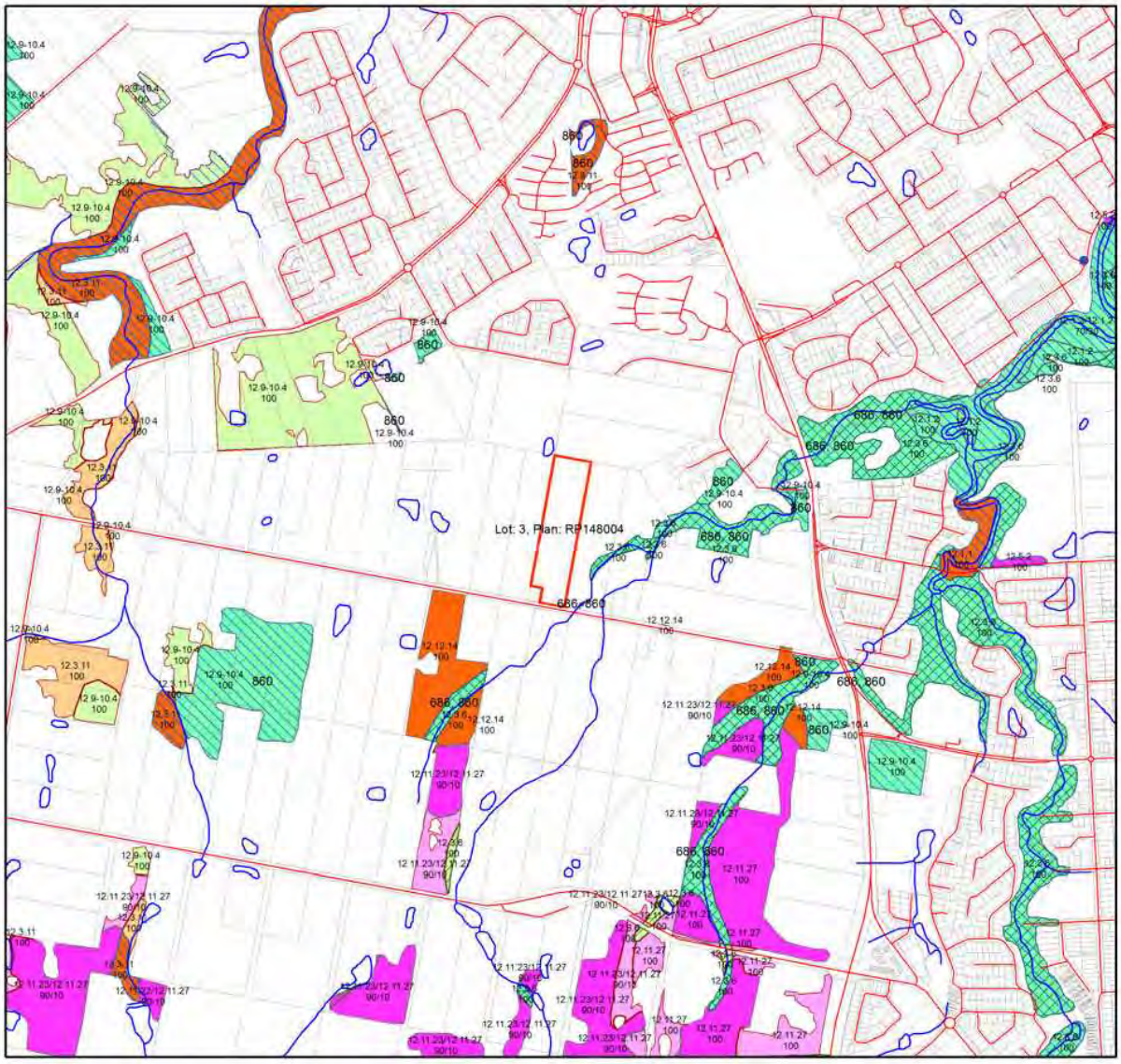


Vegetation Management Supporting Map

Legend

- Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category A or B area under Section 20AH
  These areas are edged in yellow and filled with the remnant RE Status
- Category C area containing endangered regional ecosystems
- Category C area containing of concern regional ecosystems
- Category C area that is a least concern regional ecosystem
- Category C area under Section 20AI
  These areas are edged in purple and filled with the remnant RE Status
- Non Remnant
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map
  (Stream order shown as black number against stream where available)
- Roads
- National Parks, State Forest and other reserves
- Cadastral line
  Property boundaries shown are provided as a locational aid only

Queensland Government

LOCALITY DIAGRAM

N

0 140 280 420 560 700 m

This product is projected into:
GDA 1994 MGA Zone 56

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

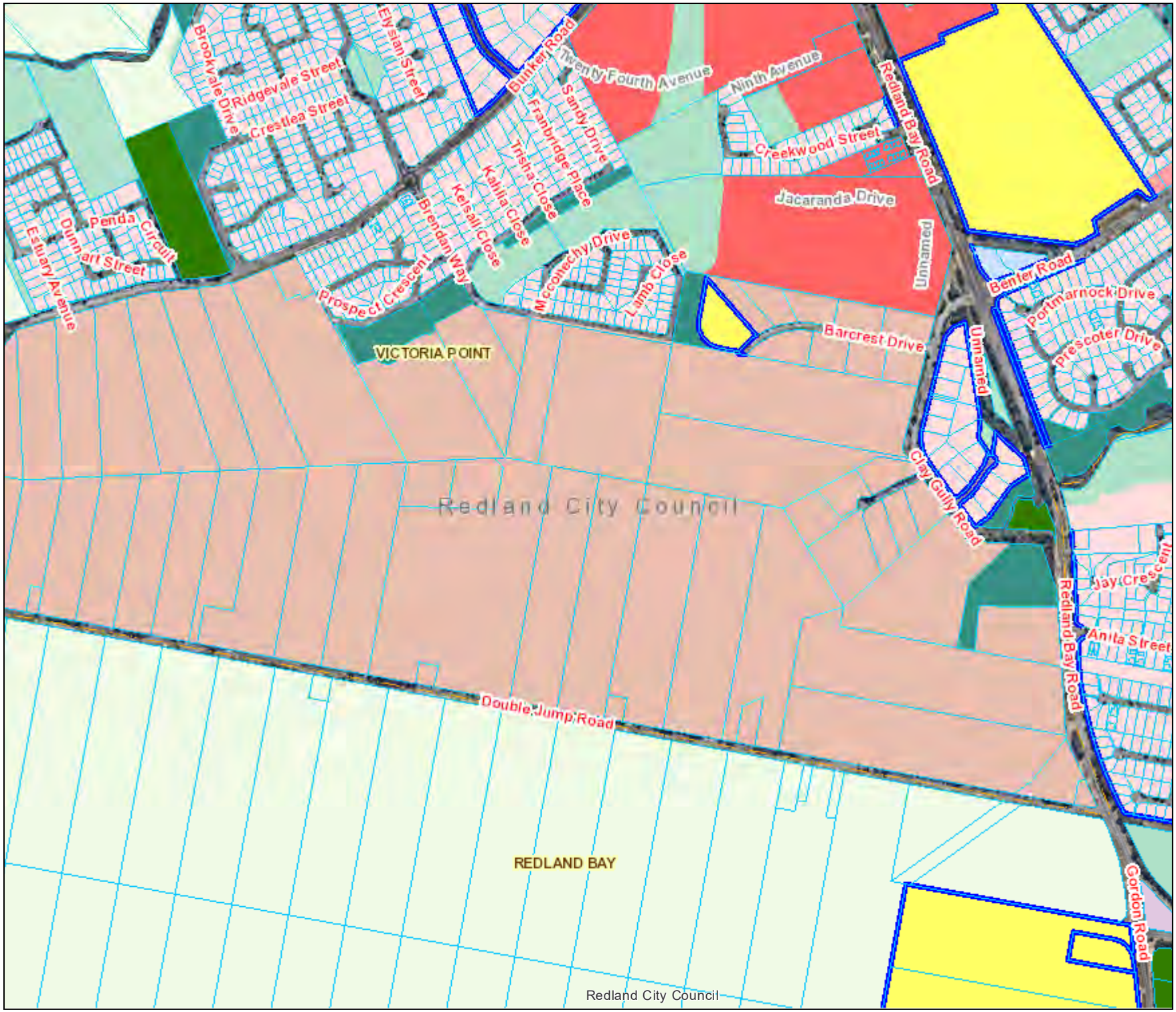
Disclaimer:
While every care is taken to ensure the accuracy of this product, the Department of Natural Resources, Mines and Energy makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.dnrme.qld.gov.au or contact the Department of Natural Resources, Mines and Energy.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

© The State of Queensland (Department of Natural Resources, Mines and Energy), 2018

Appendix 9 – Zoning



Redland City Council

Legend

- Current Lot
- Suburb Boundary
- Precinct Boundary

Zones

- Low Density Residential
- Low-medium Density Residential
- Medium Density Residential
- Character Residential
- Tourist Accomodation
- Principal Centre
- Major Centre
- District Centre
- Local Centre
- Neighbourhood Centre
- Specialised Centre
- Recreation and Open Space
- Environmental Management
- Conservation
- Low Impact Industry
- Medium Impact Industry
- Waterfront and Marine Industry

Scale @ A4: 1:10,610

Date: 6/19/2021

N

INFORMATION PURPOSES ONLY

Is given in relation to the data (including accuracy, reliability, completeness or suitability) and ... liability (including without limitation, ... liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for direct ... breach of the privacy laws. ... contributors to data listed at www.nmaps.gov.au/products or www.redland.qld.gov.au.

Appendix 10 – Environmental Significance Overlay Map

Precinct 2 - Victoria Point (Sutgold Pty Ltd) **Legend**

Appendix 10 - Environmental Significance Overlay

28 South Project Ref: 2019-100(b)

Data Sources: Qld Globe (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2021); Roads (DNRME, 2020); Watercourse (DNRME, 2020); Contours (DNRME 2016).

28ºS ENVIRONMENTAL

- Property Boundaries
- Precinct 2 Boundary
- Conservation Area Boundary

Surveyed NJKHTs (1200)

- To Be Removed (825)
- To Be Retained (315)
- Preferentially Retained (11)
- Likely To Be Removed (49)

- MSES
- MLES

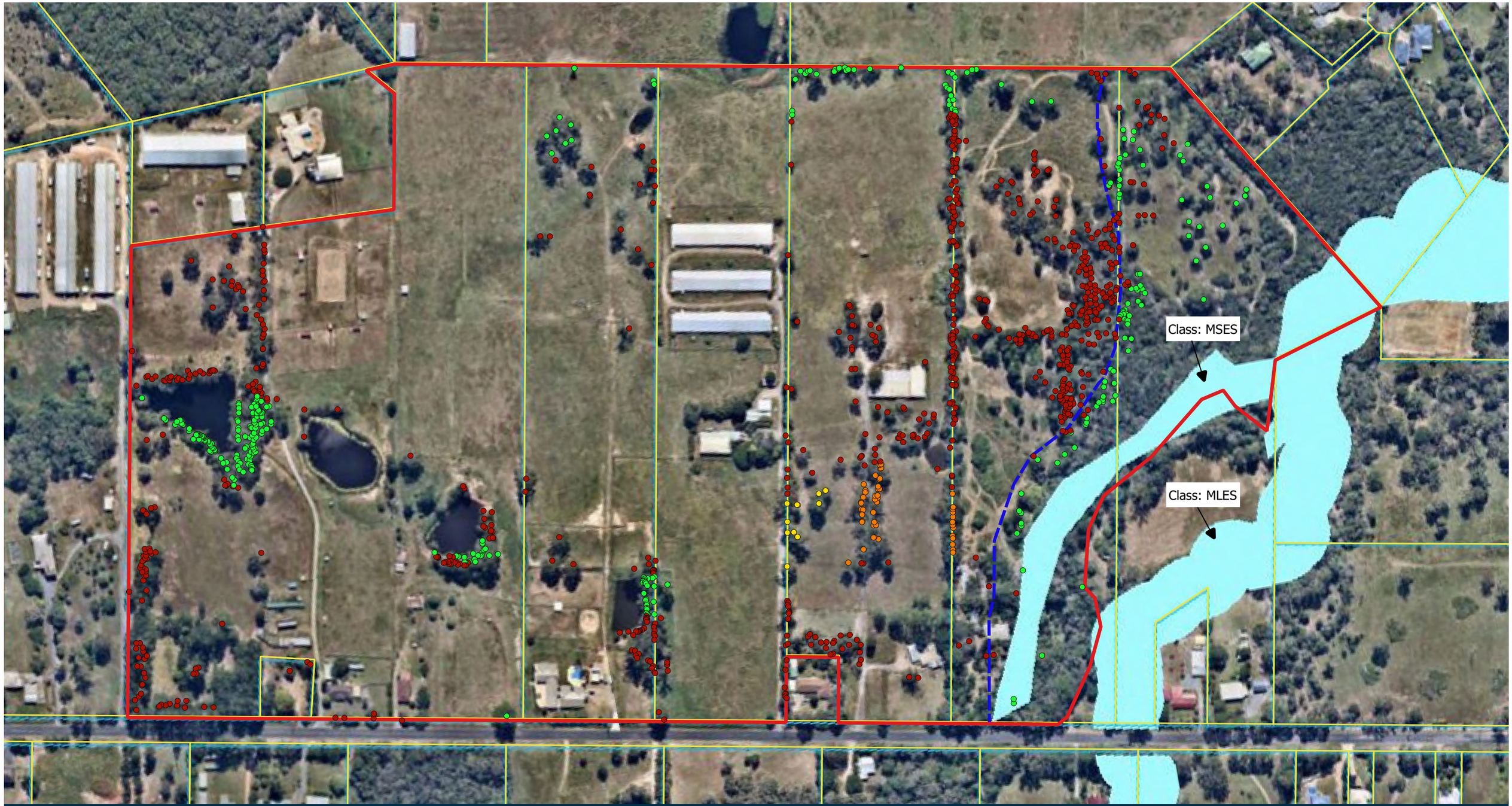
Issue Date	Dwg No.	Author
14 Sept. 2021	2019-100(b)	CT
Approved	**Revision Note**	
WM		

(A3) GDA 94 MGA 56

0 50 100 150 200 m

N

Appendix 11 – Waterways and Wetlands Overlay Map



Precinct 2 - Victoria Point (Sutgold Pty Ltd) **Legend**

Appendix 11- Waterway Corridors and Wetlands Overlay

28 South Project Ref: 2019-100(b)

Data Sources: Qld Globe (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2021); Roads (DNRME, 2020); Watercourse (DNRME, 2020); Contours (DNRME 2016).

28ºS ENVIRONMENTAL

- Property Boundaries
- Precinct 2 Boundary
- Conservation Area Boundary

Surveyed NJKHTs (1200)

- To Be Removed (825)
- To Be Retained (315)
- Preferentially Retained (11)
- Likely To Be Removed (49)

Mapped Waterway Corridors and Wetlands

Issue Date	Dwg No.	Author
14 Sept. 2021	2019-100(b)	CT
Approved	**Revision Note**	
WM		

(A3) GDA 94 MGA 56

0 50 100 150 200 m

N

Appendix 12 – Redlands Wildlife Connections Plan Corridors

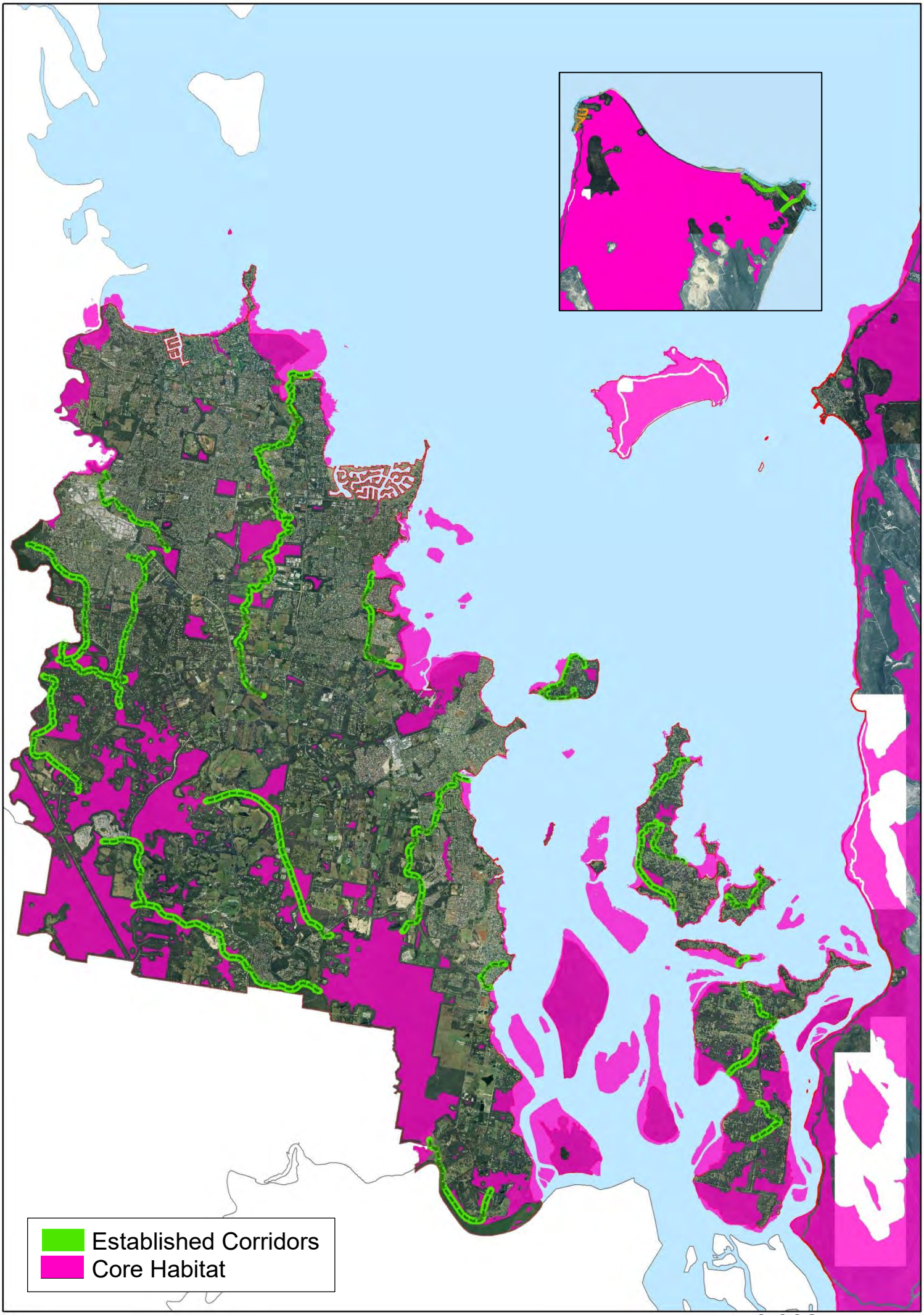


Figure 5 - Established Corridors

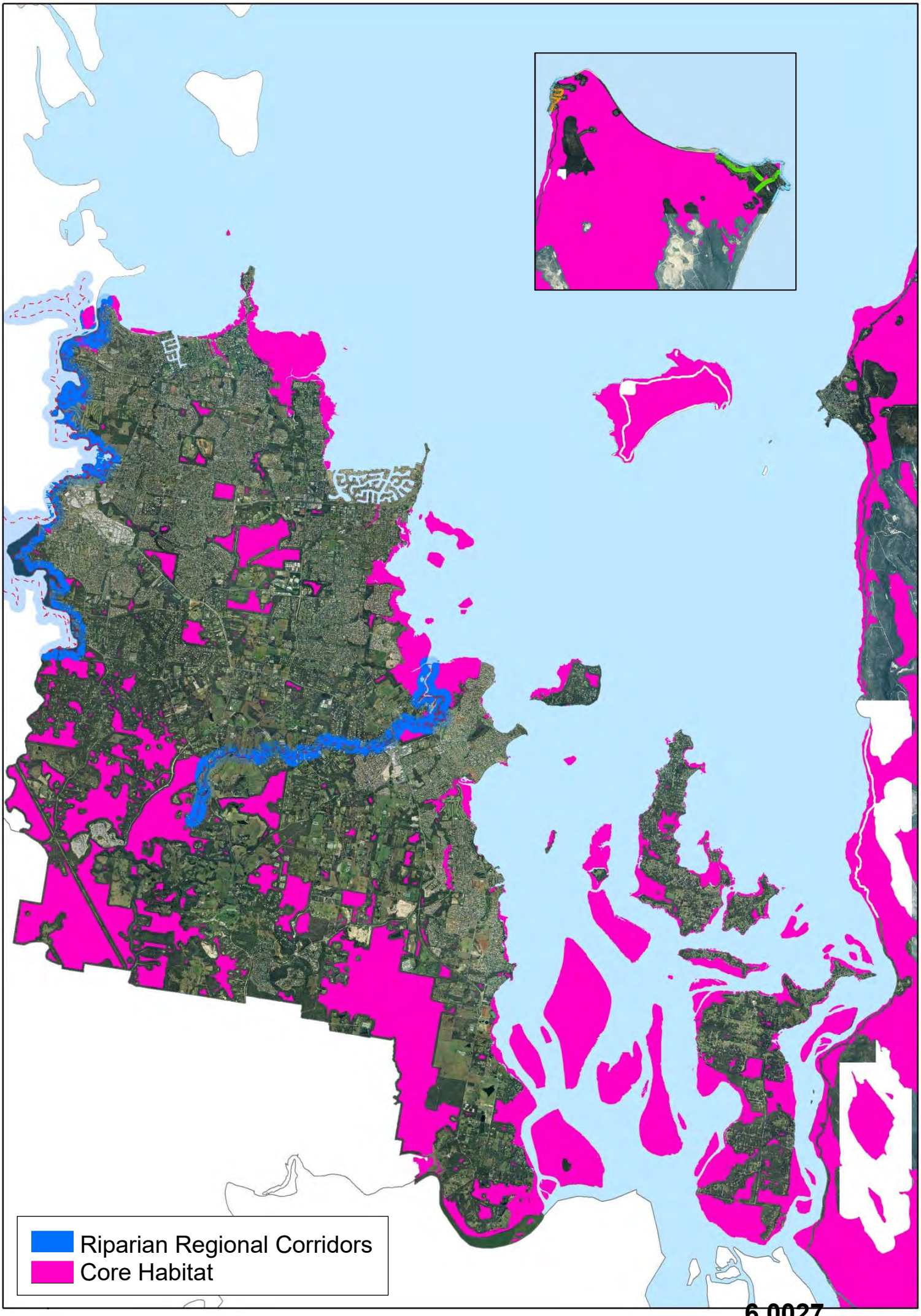


Figure 6 - Regional Riparian Wildlife Habitat Corridors

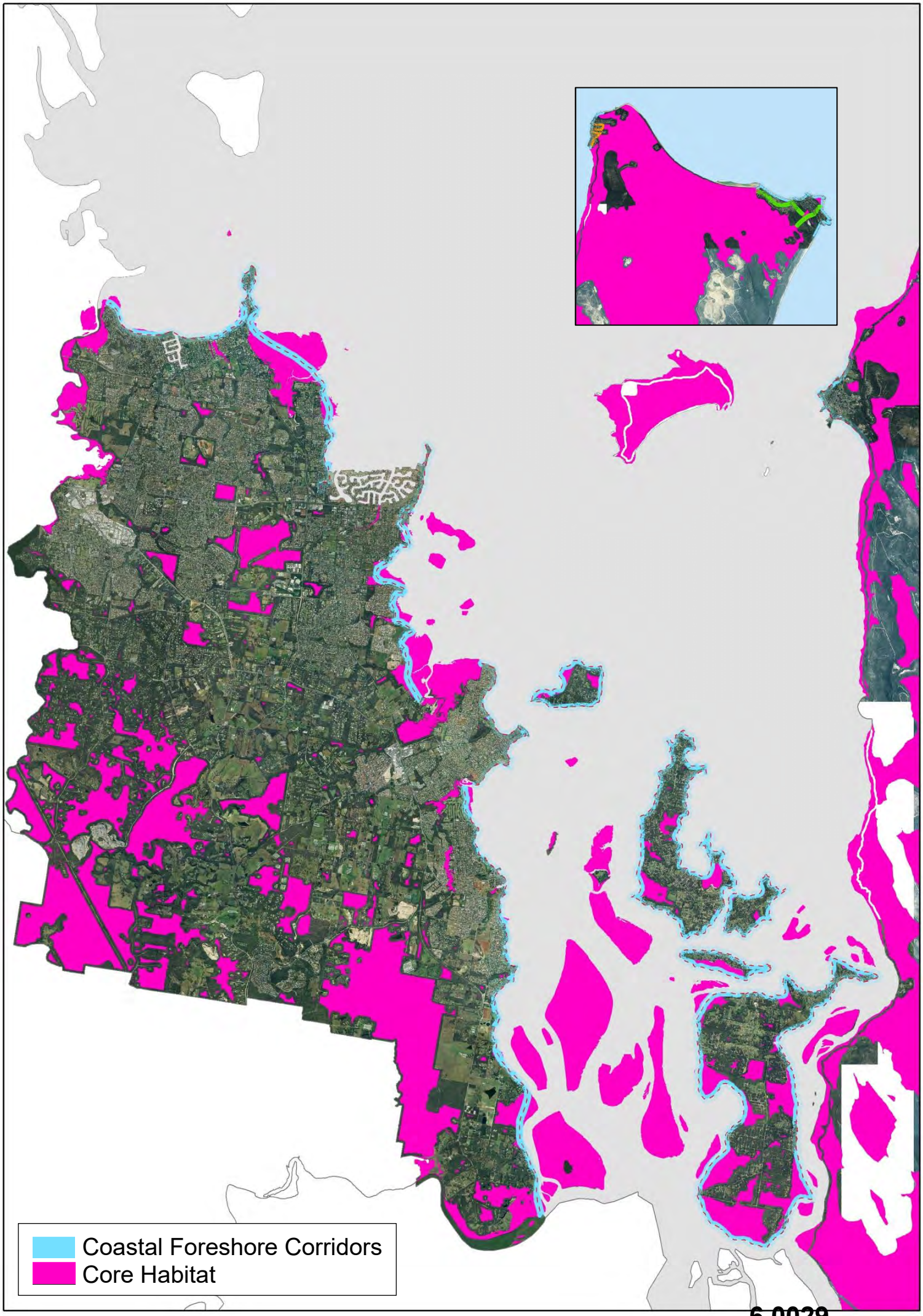


Figure 7 - Coastal Foreshore Wildlife Habitat Corridors

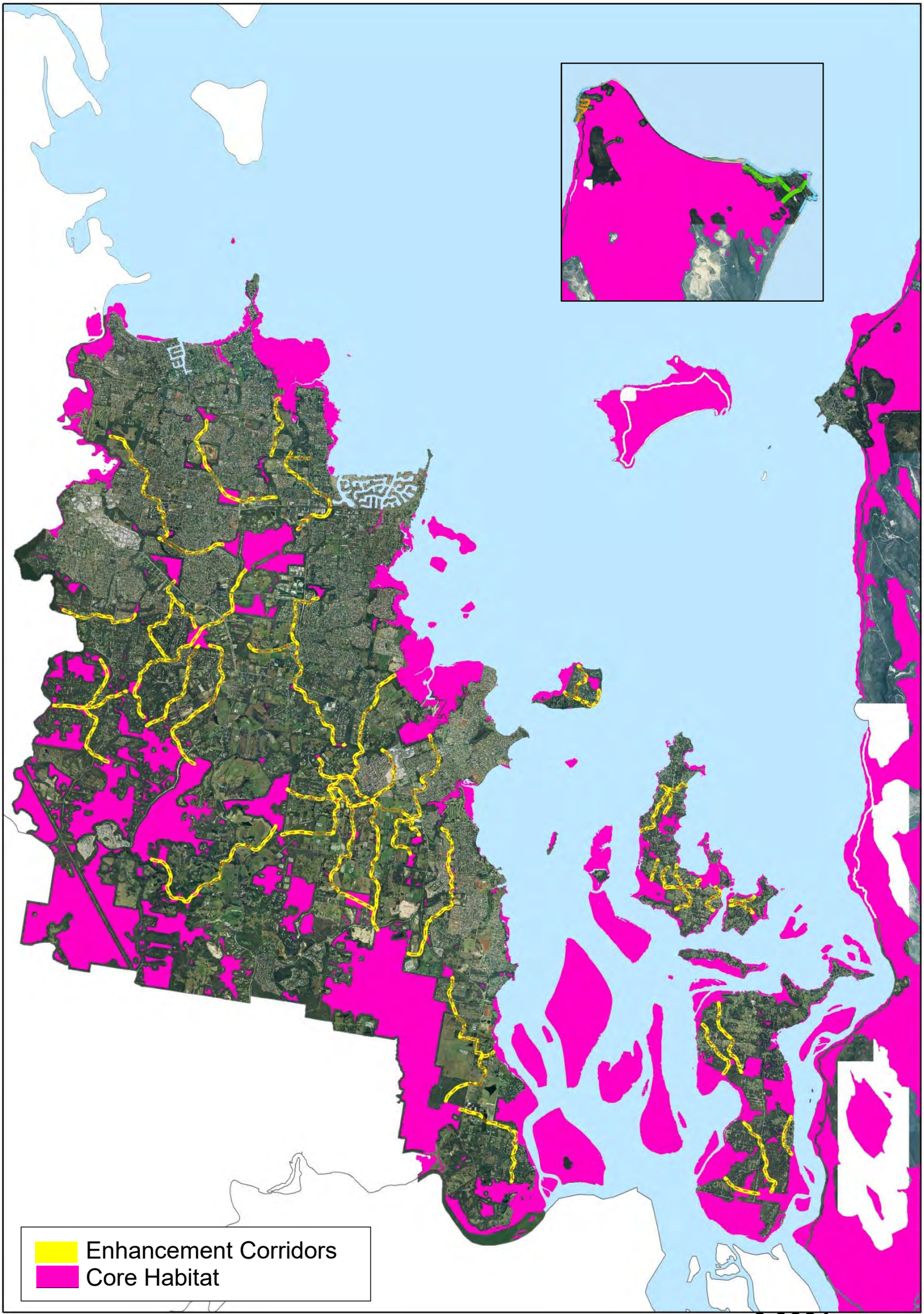
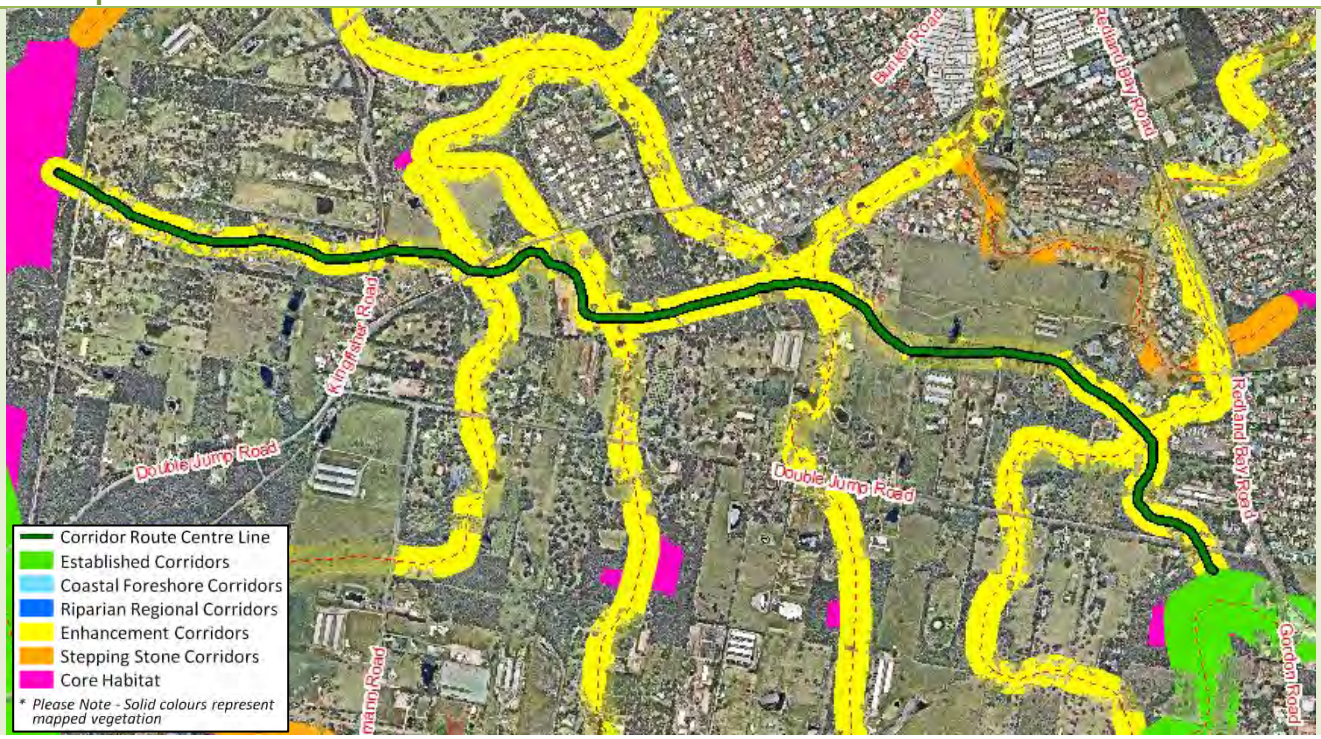


Figure 8 - Enhancement Corridors

Appendix 13 – Redlands WCP Enhancement Corridors in Relation to the Site

Double Jump Road to Sandy Creek Conservation Area – Enhancement Corridor in Known Development Area



Description	Relatively long west to east corridor linking Sandy Creek Conservation Area to end of Double Jump Road.
Environmental Values	Linking scribbly gum dominated open forest to woodland (12.9-10.4) of Sandy Creek Conservation Area to scribbly gum, half-bark, stringybark woodland (12.12.14) at end of Double Jump Road. Multiple corridor dependent bird species recorded at Double Jump Road at Sandy Creek Conservation Area ends of corridor. Record of Scute-snouted Calyptotis at Sandy Creek Conservation Area. Links to High Ecological Values waters under State Environmental Protection (Water) Policy 2009 at eastern end.
Core Habitat Linkages	Links 3 core habitat patches. Maximum distance between patches is ≈4,500m.
Land Uses / Tenure	Ends of corridor zoned as Conservation land, with mixed uses throughout trunk comprising Rural Non Urban, Environmental Protection, Emerging Urban Community and Park Residential.
Community Use	Valuable mixed peri-urban conservation, park and recreational area.
Threats & Barriers	Poor urban and peri urban land management (e.g. uncontrolled domestic animals, garden escapee weeds, noise and light disturbance). High potential road strike and barrier at Kingfisher Road, Bunker Road and Double Jump Road crossings. Emerging Urban Community zoned land north of Double Jump Road.
Gaps & Pinch Points	Pinch point between Warren Street and Kingfisher Road. Gaps immediately east and west of Bunker Road crossing. Gap (≈650m) across Rural Non Urban land west of Hanlin Place.
Priority Outcomes	Safe fauna passage near Estuary Avenue/Bunker Road crossing to complement nearby Eprapah Creek Corridor to German Church Road Conservation Area corridor. Rehabilitation of pinch point between Warren Street and Kingfisher Road. Rehabilitation of gaps between Kingfisher Road and Bunker Road, southwest of Estuary Avenue/Bunker Road crossing and significant gap across Rural Non Urban land west of Hanlin Place. Management of impacts from urban and peri urban area (e.g. garden escapee weeds, domestic animal control, etc). . Provide input into planning for Emerging Urban Community zoned land north of Double Jump Road.

Appendix 14 – Moogurupum Creek Offset Planting Capacity

1. Introduction

The Moogurupum Creek Conservation Area (**MCCA**) is located at the eastern end of the Site. A review of historic aerial photography shows that it was first cleared in ~1970 and subject to further clearing and thinning up to 1985. It has not been subject to significant disturbance since this time.

The Appellant intends to rely on the MCCA to accommodate koala offsets arising from development over other parts of the Site, because this will deliver a tangible balance for koala (and other fauna populations) affected by the proposed development.

During the course of this JER, AD has: (i) questioned whether the part of the MCCA already mapped as Koala Bushland Habitat can reasonably accommodate koala offset planting; and (ii) sought clarity on the offset capacity of remaining areas. **Plan 1** shows historical disturbance in relation to the Koala Bushland Habitat Mapping. The disturbance reflects the mosaic of plant communities now evident in this part of the Site.

I have conducted more detailed vegetation survey of the MCCA to establish its potential to accommodate offset planting.

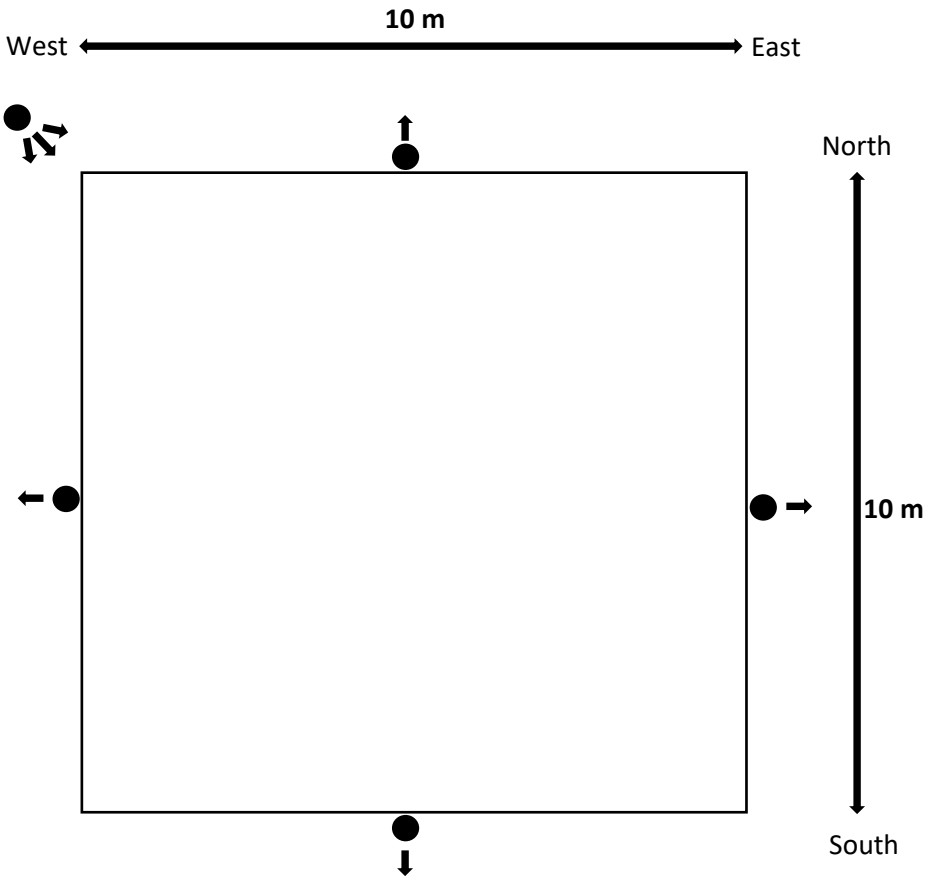
2. Method

The following methodology was employed:

1. Vegetation communities were defined and then mapped by differential GPS. Polygons with the vegetation communities were established to represent the communities' occurrence on different regional ecosystem land zones (**Plan 2**):
    - 1a. Black sheoak regrowth with regenerating koala habitat trees mainly > NJKHT status;
    - 1b. Black sheoak regrowth generally without koala habitat trees;
    - 2. Scribbly gum forest with NJKHTs through the strata;
    - 3. Regenerating sclerophyll forest comprised of NJKHTs;
    - 4. Mixed Paperbark / Scribbly gum forest with NJKHT through the strata;
    - 5a. Scattered mature paperbark over a dense groundcover of Lantana;
    - 5b. Remnant +/- scattered paperbark over a highly degraded midstorey/groundcover layer;
    - 6. Open grassland and landscape plantings (pre-clear RE12.3.6);
    - 7. Open grassland (preclear - RE12.12.14); and
    - 8. Open grassland (preclear RE 12.9-10.4).

2. Within the polygons, 10m X 10m plots were established to determine average stem densities of: (i) koala habitat trees achieving non-juvenile koala habitat tree status; (ii) smaller koala habitat trees not meeting non-juvenile koala habitat tree status; and (iii) Black sheoak density.

3. At completion of the plot survey, a photo was taken from the north western corner of each plot with a view to the south eastern corner. Photos were taken from the middle of the northern, eastern, southern and western edges outwards from the plot to show that the plot is generally representative of the surrounding landscape (**Inset 1**).



Key:

Photo point and direction

Inset 1: plot alignment and photo points

4. Some polygons were small enough to allow all koala habitat trees to be counted (Polygon 6), and for that density calculation to be applied to other polygons with very similar characteristics (Polygon 12).

5. A dense growth of lantana or other exotic climbers prevented plots being established in some areas. Here, an estimation was made of non-juvenile koala habitat tree density, and of the capacity for koala habitat tree infill planting. Representative photos were captured to further illustrate vegetation characteristics (Viewpoints).

3. Data and Discussion

Data is presented in **Table 1**. Photos and viewpoints follow the discussion. The table presents two concluding scores:

(i) The first (2321) is the koala habitat tree offset capacity of the MCCA using the density of koala habitat trees in the emergent, canopy and T1 layers of the pre-clear regional ecosystem of the land on which the planting is to occur. **AD** prefers the regional ecosystem density method;

(ii) The second (1108) is the offset planting capacity of the MCCA using the average planting density of 625 trees/hectare (~4m plant spacings in a paddock planting scenario). Although it halves the offset capacity of the MCCA, I (**WM**) prefer the average 4m spacing method. This is because it establishes a more measured planting density across planting areas with different regional ecosystems.

If the RE planting density was adopted for the MCCA, the northernmost rehabilitation area would accommodate koala habitat trees (the canopy trees) at a density too low to allow rapid canopy capture, thus creating future weed control issues; whereas, the adjoining rehabilitation area would be planted with koala habitat trees at a density more than three times greater than its northern neighbour. Such *cheek-by-jowl* planting would likely see many of the koala habitat trees lost as the planting area matured.

The offsets policy allows regenerating koala habitat trees that have not yet reached non-juvenile koala habitat tree status to be counted as offsets. Such regeneration was encountered in Vegetation Community 1a (450 trees/hectare) and Vegetation Community 1b (1100 trees/hectare). However, given that the offset obligation has been clearly achieved in other areas, there is no requirement to count these trees.

Plots in Vegetation Community 1b (Black sheoak regrowth generally without koala habitat trees) recorded (as the name of the polygon suggests) no koala habitat trees. The Black sheoak in this community is over-mature and senescing, but unlike Vegetation Community 1a, there is no emerging sclerophyll vegetation. Instead, Lantana is beginning to colonise the groundcover layer. There are two paths for Vegetation Community 1b:

(a) Maintain the Black sheoak canopy, and interplant koala habitat trees at a rate that is 50% of what would be established in an open paddock setting; that is, an equivalent ~313 trees/hectare (based on my preferred overall planting density of 625 trees/hectare). Black sheoak trees, and all needle litter, would be removed from a 2m radius area around the planting site. The small canopy gap will minimise light penetration to the ground, and thus potential for establishment of weeds such as Lantana. It will also encourage the seedling to "*reach for the sky*". Ongoing monitoring will be required to control weeds and ensure that the canopy gap remains open; or

(b) Accept that the Black sheoak is close to the end of its life, and intervene to control the emerging Lantana. All vegetation would be removed, and the land planted as per my open paddock style of planting (625 trees/hectare). I prefer Option (b), but have assumed Option (a) in **Table 1** and **Plan 3**.

The offset planting capacity of Vegetation Community 5(b) also requires discussion, and is perhaps best illustrated by comparison to the relatively intact Vegetation Community 4 (note: both communities' fringe Moogurupum Creek). Significant habitat restoration works must precede the relatively minor offset planting proposed for Vegetation Community 5(b). This work in itself will deliver tangible ecological benefits insofar as: (i) removing the dense cloak of exotic climbers smothering existing mature trees and regenerating koala habitat trees; (ii) this in turn will "*clear the way*" for koalas to actually climb these trees; and (iii) stop the spread of these weeds that, will in time, spread to and degrade adjoining vegetation.

With a canopy co-dominated by paperbark and scribbly gum, Vegetation Community 4 is an ecotone between riparian and toe-of-slope sclerophyll vegetation. Other canopy species include: *Lophostemon suaveolens* (swamp turpentine), *Lophostemon confertus* (brush box), *Corymbia intermedia* (pink bloodwood), *Corymbia trachyphloia* (brown bloodwood) and *Eucalyptus resinifera*) red stringybark) (refer **Plates 58-61**).

Woody weed presence is a minor component of the upper layers in Vegetation Community 4, and insignificant when compared to Vegetation Community 5b further south. Subcanopy

species include: *Archontophoenix alexandrae* (Alexandra palm)[#], *Syagrus romanzoffiana* (Cocos palm)*, *Pinus elliottii* (slash pine)* and occasionally *Cinnamomum camphora* (camphor laurel)*. Other prominent weeds include *Solanum torvum* (devil's fig)*, *Anredera cordifolia* (madeira vine)* which is progressively becoming a weed smothering the mid storey and canopy, lantana which is cloaking the upper banks of the high flow channel and *Ageratum houstonianum* (blue billy goat weed)* on the flood terrace. Weed management will allow this community to naturally regenerate.

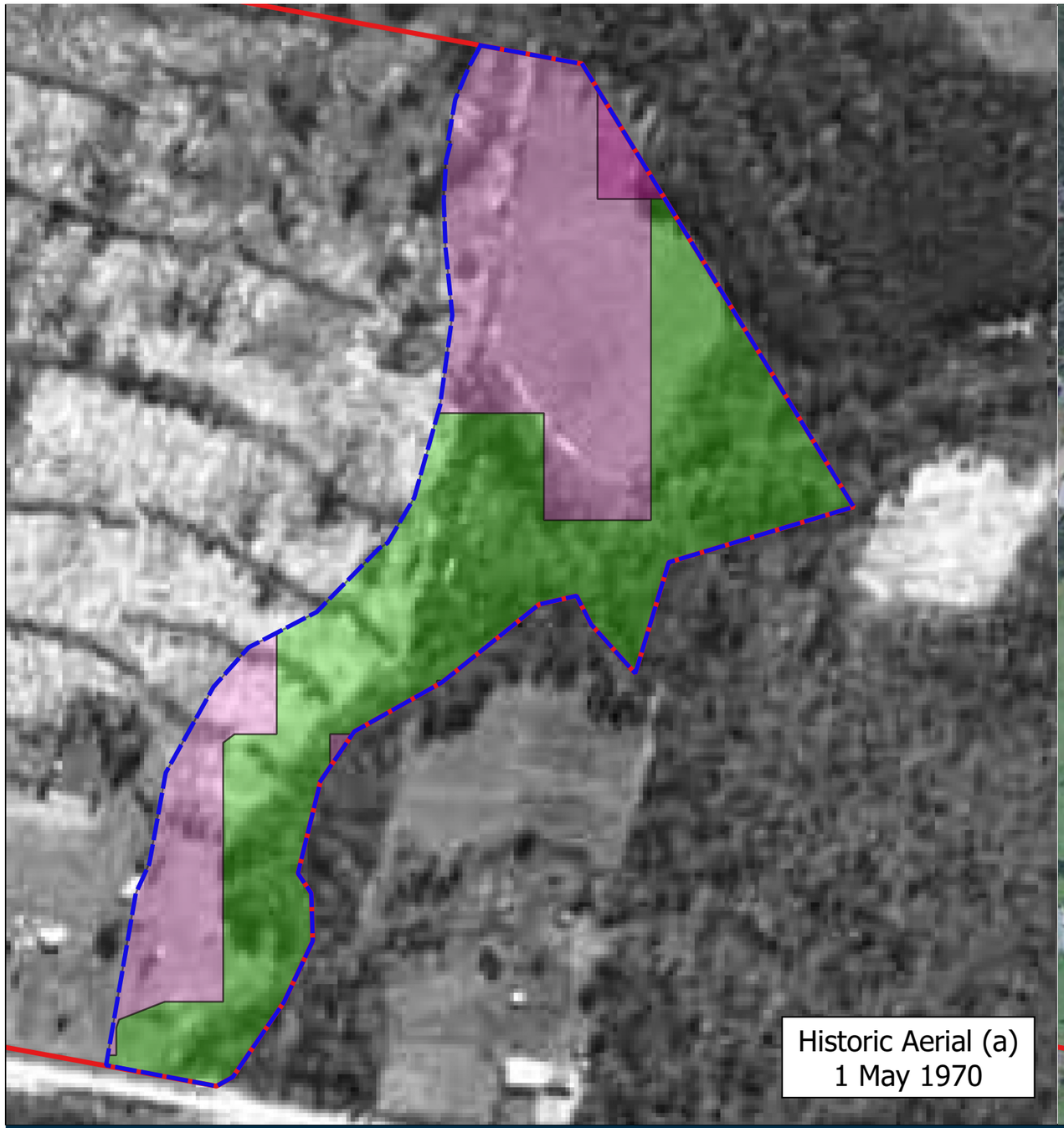
Vegetation Community 5b corresponds with RE12.3.6 and whilst for the most part, paperbark is a significant canopy component, density of this species and its proportional representation in the canopy decreases north to south (it was present at viewpoints 4, 5, 6 and 7, but absent from 8 – see **Figure 1** and **Plates 68-89**). This corresponds with a progressive increase in the numbers of exotic and non-endemic canopy species and climbing plants which smother the canopy. The majority of the species are garden escapes although several are ornamentals near the dwelling (52 Double Jump Road). Other native canopy species include those identified for Vegetation Community 4 (above) however they diminish rapidly as canopy components between the northern edge and the point represented by viewpoint 4.

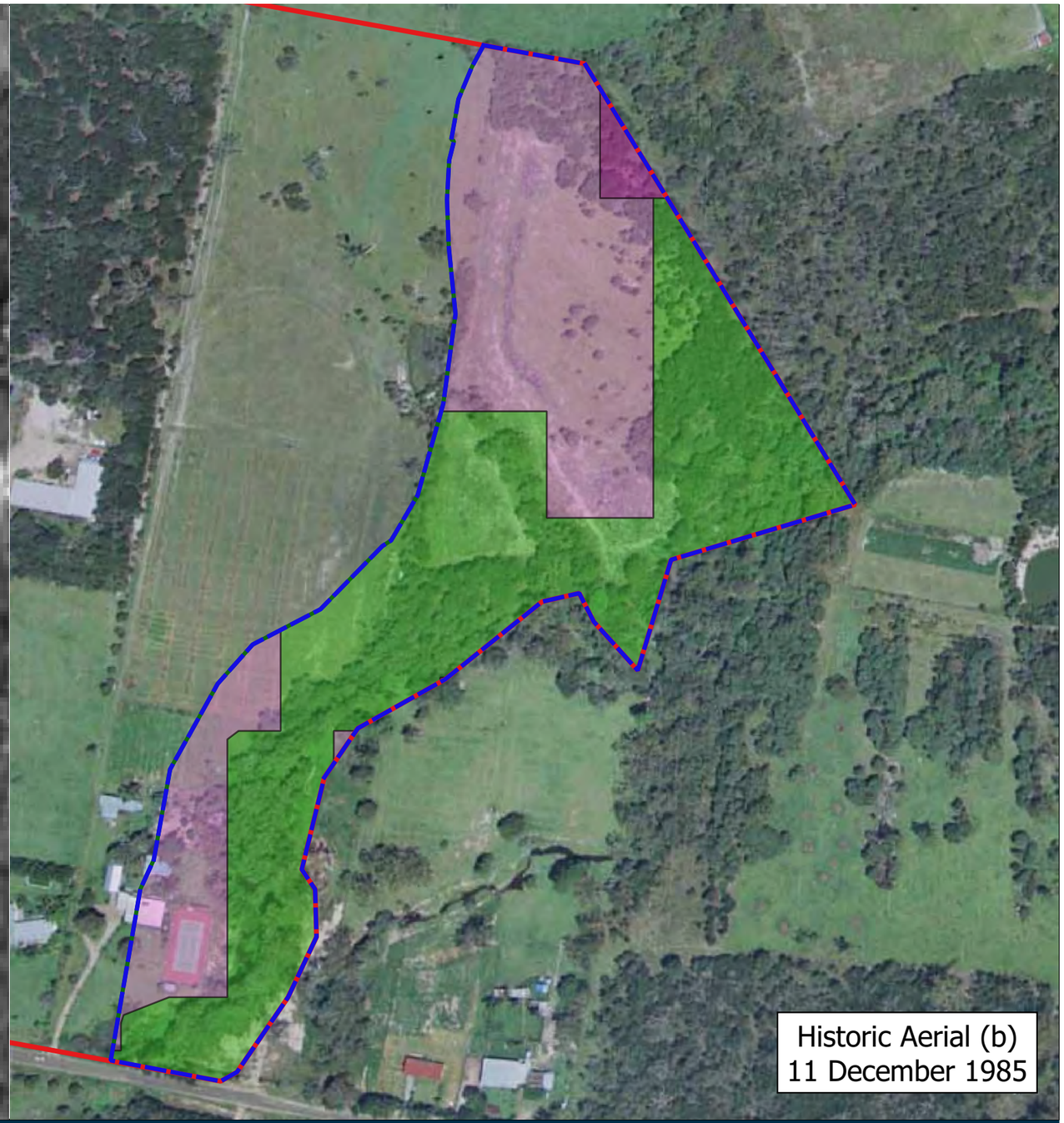
Prominent canopy weeds include slash pine*, camphor laurel*, Cocos palm*, Alexandra palm[#], 5-leaf, climbing pathos, *Schefflera actinophylla* (umbrella tree) [#], *Caryota* sp. (fishtail palm) *, *Spathodea campanulata* (African tulip tree)*, *Grevillea robusta* (silky oak)^, *Castanospermum australe* (black bean)[^], *Ficus elastica* (Indian rubber tree)^*, Erythrina sp. *Ficus benjamina* (weeping fig)[#]^. Significant climbing weeds smothering vegetation include *Syngonium podophyllum* (arrowhead vine)*, *Epipremnum aureum* (devils ivy)*, madeira vine*, *Monstera deliciosa* (monstera)* and *Hylocereus* sp (dragon fruit)*.

Prominent midstorey and groundcovers include *Dypsis lutescens* (golden cane palm), *Phyllostachys aerea* (golden bamboo)*, arrowhead vine*, *Nephrolepis cordifolia* (fishbone fern)*, *Hypoestes phyllostachya* (polka dot plant)*, *Ochna serrulata* (ochna)*, *Dracena fragrans* (dracaena)*.

[#] native species endemic to northern Queensland
[^] cultivated endemic species or endemic species not known from former pre-clear RE
[^*] cultivated exotic species

Vegetation Community (Plan 2)	Polygon (Plan 2)	Plots/Viewpoint	Plates		No of Koala Habitat Trees achieving NJKHT status in plot (scaled to /ha)	No of Koala Habitat trees failing NJKHT status in plot (scaled to /ha)	Black sheoak No stems / plot (scaled to stems/ha)	Pre-clear RE		Comment on Offset Capacity	Management Unit (Plan 3)	KHT Offset Capacity at the RE density	KHT Offset Capacity at the 4m spacing density
								Type	RE (E/T1/T2) density				
1a. Black sheoak regrowth with regenerating koala habitat trees mainly > NJKHT status.	1,2,3	Plot 1	1-7		7 (700)	4 (400)	90 (9000)	12.3.6	1,336	High densities of existing and regenerating NJKHTs. No offset capacity. High densities of Black sheoak. Selectively thin to improve NJKHT regeneration without removing NJKHTs.	1		
		Plot 2	8-14		17 (1700)	2 (200)	44 (4400)	12.3.6	1,336				
		Plot 3	15-21		3 (300)	4 (400)	24 (2400)	12.3.6	1,336				
		Plot 4	22-28		83 (8300)	8 (800)	56 (5600)	12.3.6	1,336				
				Average	2750	450	5350	12.3.6	1,336			nil	nil
1b. Black sheoak regrowth generally without koala habitat trees.	5	Plot 6	36-42		nil	nil	20 (2000)	12.3.6	1,336	No regeneration of NJKHT and moderate density of senescing Black sheoak. Selectively thin Black sheoak and interplant koala habitat trees at 50% of regional ecosystem density. Alternatively, clear senescing Black sheoak and conduct full plantout of NJKHTs.	4		
		Plot 7	43-49		nil	nil	16 (1600)	12.3.6	1,336				
				Average	nil	nil	1800	12.3.6	1,336			197	94
2. Scribbly gum forest with NJKHTs through the strata.	7	Plot 5	50-56		32 (3200)	11 (1100)	nil	12.3.6	1,336	High densities of existing and regenerating NJKHT. Vegetation is in good condition and needs only further weeding to encourage further regeneration. No offset capacity.	1	nil	nil
3. Regenerating sclerophyll forest comprised of NJKHTs	6	Viewpoint 1	57		43 / 540 m^2	nil	nil	12.12.14 / 12.9-10.4	1,547/483	Good regeneration of NJKHTs. No offset capacity. Vegetation is good quality regrowth, and needs only further weeding to encourage further regeneration.	1	nil	nil
4. Mixed Paperbark / Scribbly gum forest with NJKHT through the strata	11,12	Viewpoint 2	58-61		Good quality native vegetation with regenerating koala habitat trees. No assessment completed.			12.3.6	1,336	Good quality native vegetation with regenerating koala habitat trees. No offset capacity. Weed removal from Vegetation Unit 5b is required to maintain vegetation condition.	1	nil	nil
5a. Scattered mature paperbark over a dense groundcover of Lantana	8,9	Viewpoint 3	62-65		29 / 2647 m^2	nil	nil	12.3.6	1,336	Scattered koala habitat trees over a dense growth of Lantana. Existing koala habitat trees comprise 17% of my preferred 625 stems/ha planting capacity. I have proposed a conservative 75% offset capacity for this community.	3	300	141
5b. Remnant +/- scattered paperbark over a highly degraded midstorey/groundcover layer.	10	Viewpoints 4-8	66-89		Fragmented Canopy of mature trees	nil	nil	12.3.6	1,336	I have made a conservative estimate that this unit can accommodate a further 10% of its pre-clear capacity as offsets. Other considerable environmental benefits accrue from the revegetation works.	2	168	79
6. Open grassland and landscape plantings (Pre-clear RE 12.3.6)	-	-	-		Cleared land / landscape species.			-	-	Available for full plantout, including detention basin.	5	706	322
7. Open grassland (Pre-clear RE 12.12.14)	-	-	-		Cleared land with widely scattered koala habitat trees			-	-	Available for full plantout, including detention basin.	6	712	288
8. Open grassland (Pre-clear 12.9-10.4)	-	-	-		Cleared land with widely scattered koala habitat trees			-	-	Available for full plantout.	7	238	184
Total koala habitat tree offset capacity												**2321**	**1108**





Precinct 2 - Victoria Point (Sutgold Pty Ltd)

Plan 1 - Historic Photos

28 South Project Ref: 2019-100(b)

Data Sources: Qld Globe (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2021); Roads (DNRME, 2020); Watercourse (DNRME, 2020); Contours (DNRME 2016).

28ºS ENVIRONMENTAL

Legend

- Precinct 2 Boundary
- Conservation Area

Mapped Koala Habitat Values (SPRP Mapping)

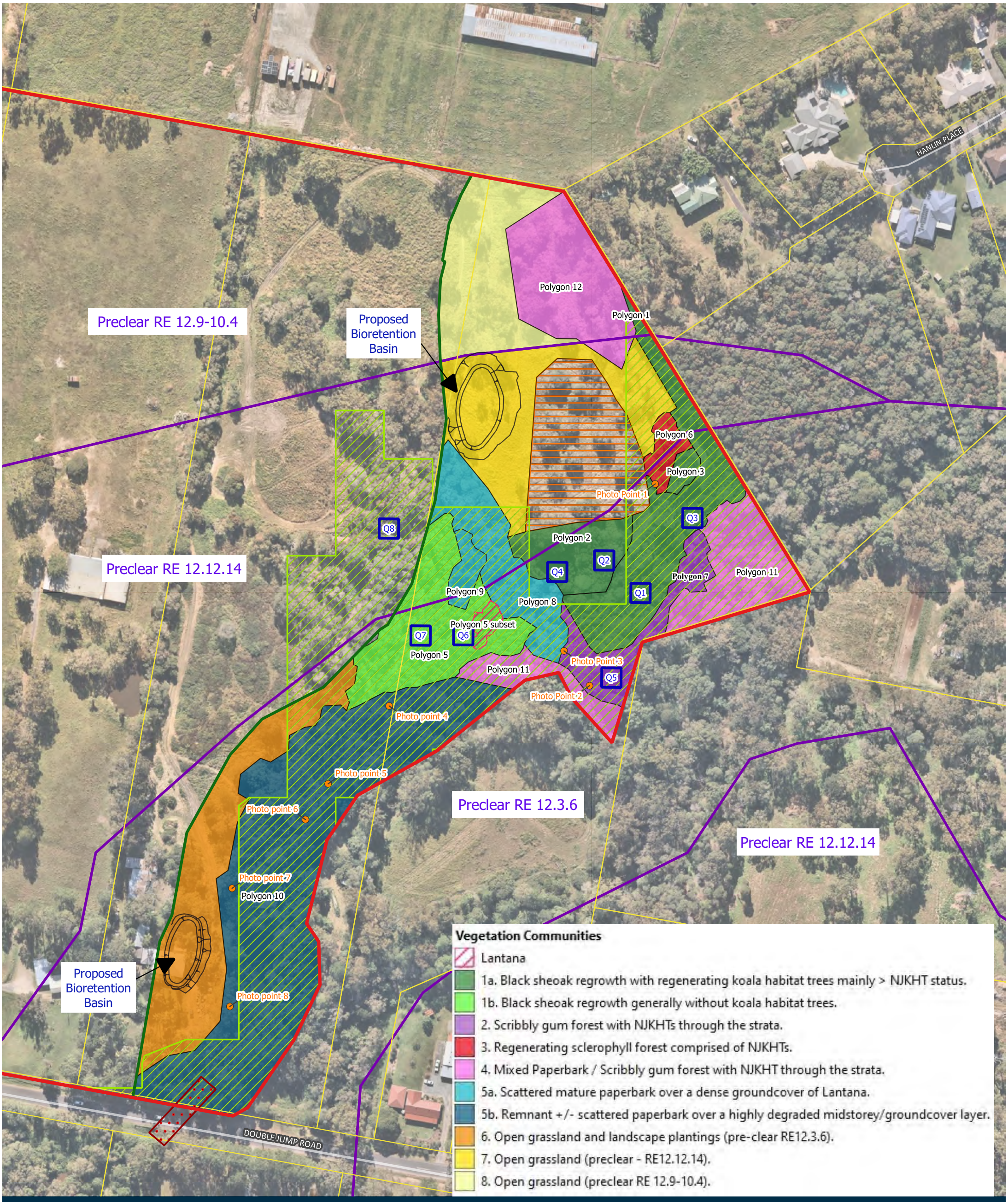
- Medium Value Bushland
- High Value Rehabilitation
- Medium Value Rehabilitation

Issue Date	Dwg No.	Author
13 September 2021	2019-100(b)	CT
Approved	**Revision Note**	
WM/AD		

(A3) GDA 94 MGA 56

0 50 100 150 200 m

N



Precinct 2 - Victoria Point (Sutgold Pty Ltd) **Legend**

Plan 2 - Vegetation Communities

28 South Project Ref: 2019-100(b)

Data Sources: QLd Globe Imagery (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2020); Baseline Roads (DNRME 2020); Waterways (DNRME 2019).

28°S ENVIRONMENTAL

- Property Boundaries
- Precinct 2 Boundary
- Residual Stage 1 Offset Area Within Precinct 2 as per ODS
- Conservation Area Boundary
- Koala SPRP Mapping - Medium Value Bushland
- Fauna Underpass
- Photo Points
- 10x10m Vegetation Assessment Plots
- Preclear RE Boundaries

Issue Date	Dwg No.	Author
16 Sept. 2021	2019-100(b)	CT
Approved	**Revision Note**	
WM/AD		

(A3) GDA 94 MGA 56

0 25 50 75 100 m

N

Weed and supplementary planting at
100% of pre-clear RE stem/ha rate
Area: 0.38 ha
Pre-clear RE 12.9-10.4: 483 stems/ha
Number of stems to be planted =
(i) 184 stems at RE density; or
(ii) 238 stems at 4m spacing density.

Weed and / or thin black sheoak, no planting
Area: 0.35 ha
Pre-clear RE 12.9-10.4: 483 stems/ha
Number of stems to be planted: 0

Weed and supplementary planting at
100% of pre-clear RE stem/ha rate
Area: 0.46 ha
Pre-clear RE 12.12.14: 1547 stems/ha
Number of stems to be planted =
(i) 712 stems at RE density; or
(ii) 288 stems at 4m spacing density.

Weed and / or thin black sheoak, no planting
Area: 0.15 ha
Pre-clear RE 12.12.14: 1547 stems/ha
Number of stems to be planted: 0

Proposed Bioretention Basin

Weed and supplementary planting at
75% of pre-clear stem/ha rate
Area: 0.19 ha
Pre-clear RE 12.12.14: 1547 stems/ha
Number of stems to be planted =
(i) 220 stems at RE density; or
(ii) 89 stems at 4m spacing density.

Weed and supplementary planting at
50% of pre-clear stem/ha rate
Area: 0.09 ha
Pre-clear RE 12.12.14: 1547 stems/ha
Number of stems to be planted =
(i) 70 stems at RE density; or
(ii) 28 stems at 4m spacing density

Weed and supplementary planting at
100% of pre-clear RE stem/ha rate
Area: 0.53 ha
Pre-clear RE 12.3.6: 1336 stems/ha
Number of stems to be planted =
(i) 706 stems at RE density; or
(ii) 332 stems at 4m spacing density.

Weed and / or thin black sheoak in areas of excessive black sheoak regrowth, no planting
Area: 1.07 ha
Pre-clear RE 12.3.6: 1336 stems/ha
Number of stems to be planted: 0

Weed and supplementary planting at
50% of pre-clear stem/ha rate
Area: 0.3 ha
Pre-clear RE 12.3.6: 1336 stems/ha
Number of stems to be planted =
(i) 197 stems at RE density; or
(ii) 94 stems at 4m spacing density

Weed and supplementary planting at
75% of pre-clear stem/ha rate
Area: 0.12 ha
Pre-clear RE 12.3.6: 1336 stems/ha
Number of stems to be planted =
(i) 120 stems at RE density; or
(ii) 56 stems at 4m spacing density

Proposed Bioretention Basin

Weed and supplementary planting at
10% of pre-clear stem/ha rate
Area: 1.26 ha
Pre-clear RE 12.3.6: 1336 stems/ha
Number of stems to be planted =
(i) 168 stems at RE density; or
(ii) 79 stems at 4m spacing density

HANLIN PLACE

DOUBLE JUMP ROAD

Management Units	Description
1	Remnant or regrowth vegetation with no additional offset capacity
2	Offset Area 1 (Fragmented remnant vegetation with highly degraded lower strata – 10% offset capacity)
3	Offset Area 2 (Senescing Black sheoak with no koala habitat tree regeneration – 50% offset capacity)
4	Offset Area 3 (Scattered paperbark over Lantana – 75% offset capacity)
5	Offset Area 4 (Pasture and Landscape Planting, pre-clear RE 12.3.6 – 100% offset capacity)
6	Offset Area 5 (Pasture, pre-clear RE 12.12.14 – 100% offset capacity)
7	Offset Area 6 (Pasture, pre-clear RE 12.9-10.4 – 100% offset capacity)

Precinct 2 - Victoria Point (Sutgold Pty Ltd) **Legend**

Plan 3 - Offset Areas

28 South Project Ref: 2019-100(b)

Data Sources: QLd Globe Imagery (SIPS 2016); Digital Cadastre Database (Dept. Natural Resources and Mines, 2020); Baseline Roads (DNRME 2020); Waterways (DNRME 2019).

28°S ENVIRONMENTAL

- Property Boundaries
- Precinct 2 Boundary
- Conservation Area Boundary
- Fauna underpass
- Stage 1 Offset Area Within Precinct 2
- Preclear RE Boundaries

Surveyed NJKHTs (With Tree Protection Zones Within the Conservation Area)

- To Be Removed
- To Be Retained

Issue Date	Dwg No.	Author
15 Sept. 2021	2019-100(b)-6(b)	CT
Approved	**Revision Note**	
WM/AD		

(A3) GDA 94 MGA 56

0 25 50 75 100 m

N

Plate 1 - From northwestern corner view east

Plate 2 - From northwestern corner view south-east

Plate 3 - From northwestern corner view south

Plot 1: 1A. Black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 4 - View out from northern boundary of plot – note the mature *Eucalyptus racemosa* (scribbly gum)

Plate 5 - View out from eastern boundary of plot – view towards creek

Plate 6 - View out from southern boundary of plot - note the mature scribbly gum

Plate 7 - View out from western boundary of plot

Plot 1: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 8 - From northwestern corner view east

Plate 9 - From northwestern corner view south-east

Plate 10 - From northwestern corner view south

Plot 2: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 11 - View out from northern boundary of plot

Plate 12 - View out from eastern boundary of plot

Plate 13 - View out from southern boundary of plot

Plate 14 - View out from western boundary of plot

Plot 2: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 15 - From northwestern corner view east

Plate 16 - From northwestern corner view south-east

Plate 17 - From northwestern corner view south

Plot 3: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 18 - View out from northern boundary of plot

Plate 19 - View out from eastern boundary of plot

Plate 20 - View out from southern boundary of plot

Plate 21 - View out from western boundary of plot

Plot 3: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 22 - From northwestern corner view east

Plate 23- From northwestern corner view south-east

Plate 25 - From northwestern corner view south

Plot 4: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 25 - View out from northern boundary of plot – note mature scribbly gum

Plate 26 - View out from eastern boundary of plot

Plate 27 - View out from southern boundary of plot

Plate 28 - View out from western boundary of plot

Plot 4: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

Plate 29 - From northwestern corner view east

Plate 30 - From northwestern corner view south-east

Plate 31 - From northwestern corner view south

Plot 5: 2. Mature (relict) *Eucalyptus racemosa* (scribbly gum) forest with mainly >NJKHT

Plate 32 - View out from northern boundary of plot – note mature scribbly gum

Plate 33 - View out from eastern boundary of plot

Plate 34 - View out from southern boundary of plot

Plate 35 - View out from western boundary of plot

Plot 5: 2. Mature (relict) *Eucalyptus racemosa* (scribbly gum) forest with mainly >NJKHT

Plate 36 - From northwestern corner view east

Plate 37 - From northwestern corner view south-east

Plate 38 - From northwestern corner view south

Plot 6: 1b. black sheoak without regenerating koala habitat trees

Plate 39 - View out from northern boundary of plot

Plate 40 - View out from eastern boundary of plot

Plate 41 - View out from southern boundary of plot

Plate 42 - View out from western boundary of plot

Plot 6: 1b. black sheoak without regenerating koala habitat trees

Plate 43 - From northwestern corner view east

Plate 44 - From northwestern corner view south-east

Plate 45 - From northwestern corner view south

Plot 7: 1b. black sheoak without regenerating koala habitat trees

Plate 46 - View out from northern boundary of plot

Plate 47 - View out from eastern boundary of plot

Plate 48 - View out from southern boundary of plot

Plate 49 - View out from western boundary of plot

Plot 7: 1b. black sheoak without regenerating koala habitat trees

Plate 50 - From northwestern corner view east

Plate 51 - From northwestern corner view south-east

Plate 51 - From northwestern corner view south

Plot 8: 1a. black sheoak without regenerating koala habitat trees

Plate 53 - View out from northern boundary of plot

Plate 54 - View out from eastern boundary of plot

Plate 55 - View out from southern boundary of plot

Plate 56 - View out from western boundary of plot

Plot 8: 1a. black sheoak with regenerating koala habitat trees, mainly >NJKHT status

PLATES

Observational sites

Plate 57 - Viewpoint 1 view north-west

Polygon 6 (Viewpoint 13): 3. Regenerating areas with scattered NJKHT

Plate 58 - Viewpoint 2, view east

Plate 59 - Viewpoint 2, view south-east

Plate 60 - Viewpoint 2, view south

Plate 61 - Viewpoint 2, view south-west

Polygon 11 (Viewpoint 2): Mature paperbark / scribbly gum woodland / open forest with lower levels of understorey disturbance along tributary of Moogurrapum Creek

Plate 62 - Viewpoint 3, view south-west

Plate 63 - Viewpoint 3, view west

Plate 64 - Viewpoint 3, view north-west

Plate 65 - Viewpoint 3, view north

Polygon 8 (Viewpoint 3): 5a. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest along drainage line with dense lantana

Plate 66 - Viewpoint 4, view east

Plate 67 - Viewpoint 4, view south-east

Plate 68 - Viewpoint 4, view south-west

Plate 69 - Viewpoint 4, view north-west

Polygon 10 (Viewpoint 4): 5b. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest with highly disturbed understorey along tributary of Moogurrapum Creek line

Plate 70 - Viewpoint 5, south-werst

Plate 71 - Viewpoint 5, view west

Plate 72 - Viewpoint 5, view north-west

Plate 73 - Viewpoint 5, view north

Polygon 10 (Viewpoint 5): 5b. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest with highly disturbed understorey along tributary of Moogurrapum Creek line

Plate 74 - Viewpoint 6, east

Plate 75 - Viewpoint 6, view south-east

Plate 76 - Viewpoint 6, view south

Plate 77 - Viewpoint 6, view south-west

Plate 78 - Viewpoint 6, view west

Plate 79 - Viewpoint 6, view north-west

Plate 80 - Viewpoint 6, north

Plate 81 - Viewpoint 6, noth-east

Polygon 10 (Viewpoint 6): 5b. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest with highly disturbed understorey along tributary of Moogurrapum Creek line

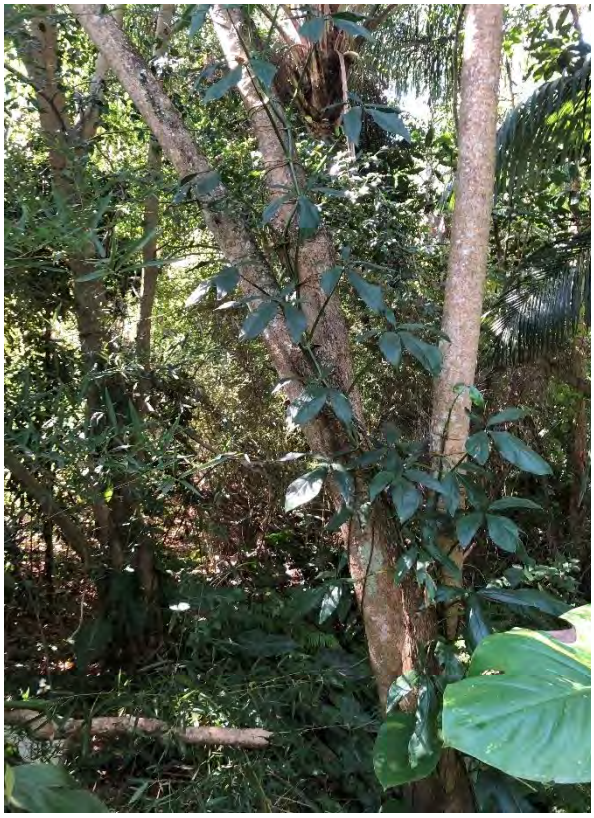


Plate 82 - Viewpoint 7, view east

Plate 83 - Viewpoint 7, view south-east

Plate 84 - Viewpoint 7, view south

Plate 85 - Viewpoint 7, view south-west

Polygon 10 (Viewpoint 7): 5b. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest with highly disturbed understorey along tributary of Moogurrapum Creek line

Plate 86 - Viewpoint 8, north east

Plate 87- Viewpoint 8, view east

Plate 88 - Viewpoint 8, view south-east

Plate 89 - Viewpoint 8, view south

Polygon 10 (Viewpoint 8): 5b. Mature *Melaleuca quinquenervia* (paperbark) woodland /open forest with highly disturbed understorey along tributary of Moogurrapum Creek line

Appendix 15 – IAS Report

Independent Arboricultural Services

Independent Arboricultural Services
PO Box 287
Morningside QLD 4170
P I 07 33995865 **E I** office@independentarb.com.au
www.independentarb.com.au

16th September 2021

Mr Wayne Moffitt
Director
28 South Environmental

Dear Wayne,

Re: Arboricultural Advice on the retention of nominated trees located at Double Jump Road Victoria Point

Independent Arboricultural Services was engaged by 28 South Environmental to assess preliminary potential impacts to the nominated vegetation resulting from proposed filling and earthworks within the site located at Double Jump Road, Victoria Point.

Roger Rankine (AQF Level 8) attended site on 27th August 2021 to undertake the assessment of the impact of the works. The preliminary assessment of the impacts of proposed development on the nominated trees in and around the works area has been undertaken. Advice on both specific and general tree protection measures and Project Arborist requirements have been detailed in attached report IAS8319 Arborist Comments Report prepared for Sutgold 2 Pty Ltd dated 27th August 2021.

For trees nominated for retention, with due care, implementation of appropriate work methodology as detailed in attached report and use of amended construction methodology the potential for ill-effect to retained/affected trees can be minimised in accordance with guidelines of AS4970:2009 – Protection of trees on development sites. Key requirements of the filling of the dams include supplementary watering, the use of structural soil, Plant Health Care Programs and the appointment and monitoring of the works by an AQF level 5 Arborist.

It is critical as the design is refined and detailed design is undertaken, the Project Arborist is engaged to review the impacts and protection measures are further specified as required.

Please do not hesitate to call to discuss or if you require further information
Regards,

Roger Rankine
Director
Independent Arboricultural Services

Independent
Arboricultural
Services

Arborist Comments Report

Prepared For: Sutgold 2 Pty Ltd

Double Jump Road
Victoria Point

27th August 2021

IAS8319

Independent Arboricultural Services - Disclaimer

The material contained in this document has been prepared on an independent basis free of any bias and represents the honest opinion of the consulting arborist.

Tissue or soil samples have not been collected nor submitted for testing unless otherwise stated. Excavation is limited to minor earthworks and we submit this assessment on the basis that all data is based on visual inspection of the tree/s and its/their location, species, health and condition at the time of writing unless otherwise stated. Measurements and tree locations noted in this report are approximate and have not been determined by survey unless information and analysis has been provided by the consultant or such information is otherwise noted. Please request a more detailed arborist report if further information and analysis is required. Depending on site requirements, specific alternate specialist advice including engineering consultancy and certification maybe required in combination with this assessment. This assessment contains arborist advice and associated general information only and does not purport to provide other site-specific specialist advice such as engineering certification unless arrangement to source such advice for inclusion in this assessment has been requested and authorised.

This report containing opinions, advice and recommendations based on information and data gathered from site inspections carried out by personnel from Independent Arboricultural Services as well as information provided by the client and/or its representatives, is to be relied on by the client in that context. It is assumed that all such information provided to Independent Arboricultural Services is correct. All recommended arboricultural works detailed in this assessment including pruning of tree canopy or roots, tree removal, tree transplantation or other associated works including stump grinding or the application of any prescribed treatment shall be carried out in accordance with applicable standards including Australian Standards AS 4373-2007 Pruning of amenity trees and AS 4970-2009 Protection of trees on development sites.

This report is subject to copyright laws and no part of it may be reproduced or used without the express written permission of the client or Independent Arboricultural Services, nor shall it be conveyed to the public through advertising, public relations, news, sales or other media without the written consent of the consultant and no responsibility will be accepted by Independent Arboricultural Services should such unauthorised use of this report be made. The consultant shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements have been made including payment of additional fees for such services.

The invoice for this report will be issued to the person or entity as per the address advised at the time of confirmation of appointment. Assessment in this report is based on plans provided at the time of confirmation of engagement and report preparation. Additional time required for re-assessment of report detail due to subsequent re-issue of plans after report preparation will be subject to an additional fee which will be charged at our hourly rate. This report shall not be conveyed to any third party including regulatory authority/s until full payment of this invoice is received by Independent Arboricultural Services and a finalised report has been issued unless agreement to do so has been granted.

Factors including the absence of historical records or local knowledge, recognition of the variability of the integrity of a tree as a naturally living organism as well as the impact of conditions within its surrounds to which it maybe subject including the impacts of mechanical force and the occurrence of weather events, do not allow an arborist to guarantee the age of a tree, or the length of time a tree/s may live or such time as it /they may fail. There is no warranty or guarantee, expressed or implied that the problems or deficiencies of the plants or property in question may not arise in the future.

Document Tracking & Information

Project Name	Arboricultural Impact Assessment		
Project Arborist	Roger Rankine (AQF Level 8)		
Client	Sutgold 2 Pty Ltd		
Address	Double Jump Road, Victoria Point		
IAS Reference	IAS8319		
Prepared By	Roger Rankine (AQF Level 8)		
Checked By	Andrew Rankine (AQF Level 5)	**Date**	15th September 2021
Revision	1		
Andrew Rankine ***Director*** Mobile: 0412 035 396	• Diploma Arb. (AQF Level 5) • TRAQ (Qualified) • Arboriculture Australia Registered Professional Arborist	• ISA Certified Arborist & Municipal Specialist AU-0269AM • QTRA (LIC#2768) • QAA Qualified Member	
Roger Rankine ***Director*** Mobile: 0408 161 015	• Diploma Arb. (AQF Level 5) • Grad Cert Arb. (AQF Level 8) • ISA Qualified Arborist (QL-0001A) • QTRA (Lic. 4988)	• TRAQ (Qualified) • Arboriculture Australia Registered Professional Arborist • QAA Qualified Member	
Stephen Catchpoole ***Consulting Arborist*** Mobile: 0400 473 500	• Diploma Arb. (AQF Level 5) • QTRA (Qualified) • Doctor of Philosophy in Forestry (PhD)	• TRAQ (Qualified) • Bachelor of Science Forestry • Bachelor of Science (Hons Botany) • QAA Qualified Member	
Mick Maher ***Consulting Arborist*** Mobile: 0400 606 640	• Diploma Arb. (AQF Level 5) • Cert IV Project Management • Cert III Conservation and Land Management	• TRAQ (Qualified) • Cert II Horticulture (Turf Management) • QAA Qualified Member	
Garry Rangi ***Consulting Arborist*** Mobile: 0418 793 534	• Diploma Arb. (AQF Level 5) • Cert III in Civil Construction; Plant Operations, Pipe Laying, Road Construction & Maintenance • Advanced Diploma of Civil Construction • Cert III Conservation Earthworks	• TRAQ (Qualified) • Diploma Horticulture • Diploma Project Management • Diploma Business Management • Associate Diploma (Wilderness Reserves & Wildlife) • Australia Registered Arborist • QAA Qualified Member	
Sam Gilbey ***Trainee Consulting Arborist*** *Mobile: 0400 229 587*	• Trainee Consulting Arborist (Diploma Arb. AQF Level 5 Commenced)	• Bachelor of Science in Ecology and Conservation Biology	
Kieran Pentland ***Consulting Arborist*** Mobile: 0448 827 976	• Diploma Arb. (AQF Level 5) • Grad Cert Arb. (AQF Level 8) • MSc. Arb. & Urban Forestry (AQF Level 9) • QAA Qualified Member • QTRA Qualified	• TRAQ (ISA Qualifications) • Bachelor of Arts in Leisure Management • National Cert in Tree Management • National Cert in Horticulture	

Contact Details

Phone	(07) 3399 5865
Enquiries	office@independentarb.com.au
Accounts	accounts@independentarb.com.au
Web	www.independentarb.com.au
Postal Address	PO Box 287, Morningside QLD 4170
ABN	65 062 099 495

Abbreviations

BCC	Brisbane City Council	**RPA**	Root Protection Area
DA	Development Application	**TMP**	Tree Management Plan
VPO	Vegetation Protection Order	**CMP**	Construction Management Plan
ULE	Useful Life Expectancy	**VMP**	Vegetation Management Plan
BLF	Building Location Footprint	**AS**	Australian Standard
BLE	Building Location Envelope	**AS 4373: 2007**	Pruning of amenity trees
TPZ	Tree Protection Zone	**AS 4970: 2009**	Protection of trees on development sites
SRZ	Structural Root Zone	**DBH**	Diameter at Breast Height

All comments and recommendations in this report have been determined in accordance with Australian Standards AS 4373-2007 Pruning of amenity trees and AS 4970-2009 Protection of trees on development sites. All recommended tree work should be carried out in accordance with these standards.

Roger Rankine

Consulting Arborist

Map

Figure 1: Subject Site (Nearmap 2021)

Introduction

This report is based on a visual inspection carried out from the ground on 27th August 2021. No soil or tissue sampling has been conducted. Tree assessment and Qualitative Visual Tree Analysis has been carried out in accordance with TRAQ ISA guidelines. Data and information provided to the client by others has been incorporated into this report as appropriate. This Preliminary Arboricultural Impact Assessment (AIA) will provide tree protection measures, plant health care specification and general construction recommendations in response to the proposed filling of three water bodies as part of the development.

All Arboricultural recommendations contained in this report have been determined in accordance with Australian Standards AS 4373-2007 Pruning of amenity trees and AS 4970-2009 Protection of trees on development sites.

For the purposes of this report reference to a Consulting or Project Arborist is held to mean an Arboricultural specialist who holds minimum Arboricultural qualifications of Dip Arb/AQF 5, appropriate professional insurances and has appropriate experience in the protection of trees on construction sites. Where tree work is specified, all recommended tree work is to be carried out in accordance with the above-mentioned standards by an appropriately trained and AQF qualified arborist practitioner/s with an up-to-date record of training and membership of a recognised Australian Arboricultural association, e.g. Qld Arboricultural Association (QAA), Arboriculture Australia (AA), or a recognised international Arboricultural association. No climbing spikes are to be used if pruning is to be carried out on live trees except in the instance of an emergency.

Qualifications of the report authors include Diploma of Arboriculture/AQF Level 5 and ISA Certified Arborist accreditation. Report authors hold current insurances and memberships including qualified memberships of Queensland Arboricultural Association (QAA), and Arboriculture Australia (AA) as well as current accreditation and membership of International Society of Arboriculture (ISA). Independent Arboricultural Services is a qualified registrant on the QAA Register of Consulting Arborists.

Drawings referenced in this report

Drawing	Revision / Reference
PRELIMINARY EARTHWORKS DISTURBENCE AREA	B18480-CSK262 A1
SITE PLAN – VEGETATION IMPACTS	2019-100(b)-005
PRECINCT PLAN	2019-100(b)-004

Executive Summary

Independent Arboricultural Services have been engaged by Sutgold 2 Pty Ltd to assess potential impacts to the nominated vegetation resulting from proposed filling and earthworks within the site located at Double Jump Road, Victoria Point. Roger Rankine (AQF Level 8) attended site on 27th August 2021 to undertake the assessment of the impact of the works.

The assessment of the impacts of proposed development on the nominated trees in and around the works area has been undertaken. Advice on both specific and general tree protection measures and Project Arborist Requirements have been detailed in this report. It is important as the design is refined, further reviews are undertaken by the Project Arborist and protection measures are further specified as required.

As part of the design process and operational works it is recommended that the following is undertaken,

- Further assessment of the impacts as detail design is undertaken.
- Retention of Trees based on the use of amended design and construction methodology as detailed in the arborist comments.
- Ensure all approvals and permits are in place before works commence.
- Undertake a pre-start meeting with contractors before works commence.
- Tree Protection Fencing is to be erected before works commence and audited by the Project Arborist (Min AQF Level 5).
- Supervision by a Project Arborist (Min AQF Level 5) and Fauna Spotter/Catcher of the approved tree removals.
- Any works proposed within the TPZ of retained trees requires supervision of a minimum AQF5 Project Arborist.
- Structural soil has been specified within the Tree Protection Zone of Trees and low-pressure water excavation (under the supervision of the Project Arborist for excavation of pier holes)
- Tree Pruning is to be undertaken by a minimum AQF Level 3 Arborist.
- Laydown areas and site shed/office locations are to be identified/finalised and excluded.
- from the Tree Protection Zones of retained trees and minimise public impact.
- Route vehicles and equipment outside of TPZ's. If access is required within TPZ, mulch to a depth of 100mm and tree padding needs to be installed with the option of track mats as determined and signed off by a minimum AQF5 Project Arborist.
- Construction materials, spoil, stockpiles, tools and equipment are not permitted within the TPZ's of retained trees.

Arborist Comment

- **Use of structural soil**
- **Localise shaping and level changes**

Use of Structural Soil

Where the existing dams are proposed to be filled the following methodology is to be utilised

1. Supplementary watering is to be installed and working before de-watering of the dams is undertaken.
2. Fill material is to utilise structural soil when within the TPZ of retained trees.
3. No cut or surface scraping to be undertaken within the TPZ of retained trees. All reshaping of contours to be in the installed fill or outside of Tree Protection Zones.
4. The use of sandstone blocks could be considered to be utilised when level changes are needed.
5. Project Arborist (AQF level 5) to supervise all works within the TPZ of retained trees.
6. When weed trees are removed within the TPZ of a retained tree, it is to be cut off at ground level and stump grinded or covered in soil / mulch.

Example of the use of Structural Soil

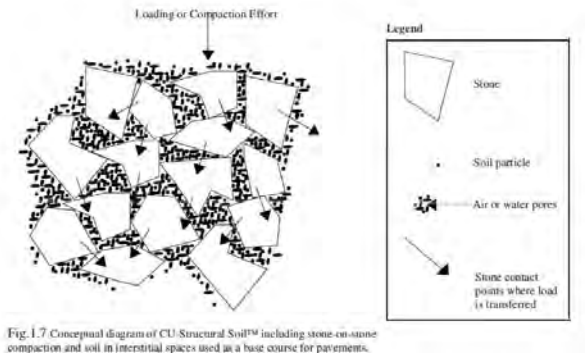


Fig. 1.7 Conceptual diagram of CU Structural Soil™ including stone-on-stone compaction and soil in interstitial spaces used as a base course for pavements.

Structural Soils – (Source: Cornell University)

Example of the use of sandstone blocks to allow changes of levels close to and within Tree Protection Zones.

Example of vegetation surrounding the current dams

Project Hold Points

Engage an AQF5 minimum Project Arborist during the project life;

- Once tree protection fencing and signage has been established and finalised. Project Arborist (minimum AQF Level 5) to audit and sign off.
- Supervision of approved tree removals in conjunction with a fauna spotter.
- Any works within the TPZ of retained trees is required.
- If tree roots are encountered over 50mm in diameter outside of TPZ's of retained trees.
- Changes to the plans occur.
- On completion of the project to conduct a final audit and summary.

(Site audits/summary reports will be conducted at each hold point interval by the Project Arborist)

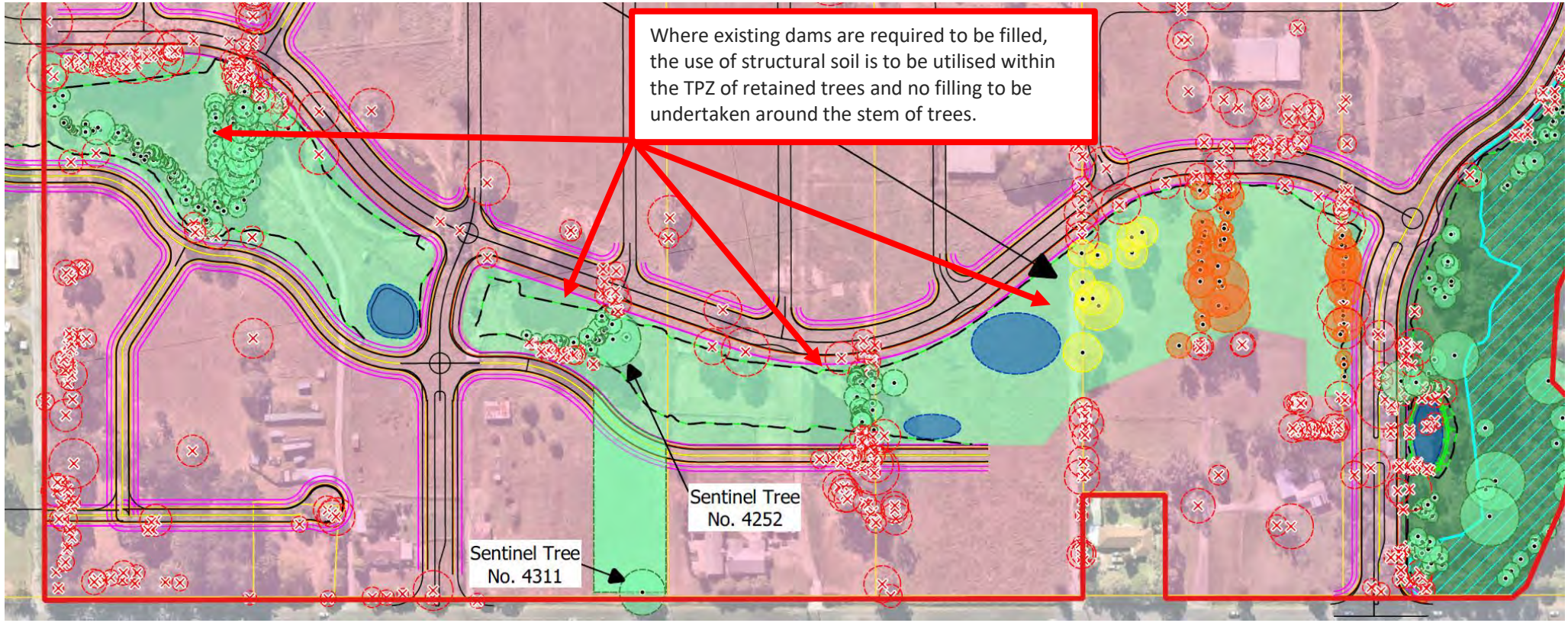
Project Arborist Requirements	
1.	Pre-Start Inspection and Audit of Tree Protection Fencing Before Works Commence
2.	Any required Tree Works to be undertaken by a minimum AQF Level 3 Arborist under the Supervision of the Project Arborist (Min AQF Level 5). Tree Services Company to be a member of Queensland Arboricultural Association or Arboriculture Australia.
3.	All works within the Tree Protection Zones of the retained vegetation to be supervised by the Project Arborist (Min AQF Level 5). Audit Reports to be completed and submitted by the Project Arborist. Any below ground incursion to be water excavated under low pressure, under the supervision of the Project Arborist.
4.	All works to be excluded from the Structural Root Zone (SRZ) and supervised if located within Tree Protection Zone.
5.	The Project Arborist to be consulted if changes to plans are made that affect any retained vegetation.
6.	At the Completion of works, Project Arborist to undertake a site assessment and an audit report compile of any further remedial actions required.

Plant Health Care Program

1. A watering system is to be set up for the duration of the works and a watering schedule established. A log is to be kept for all watering activities and adjusted as specified. Mulching with aged style forest mulch and root plate injection with soil conditioners to be undertaken before works commence and periodically (6 monthly) during the operational works).
2. Implementation of the recommendations to be undertaken by the Project Arborist before works commence
3. Aged style forest mulch (aged minimum 12 weeks) to be placed around the tree (to the drip zone) to a depth of 75-100mm.
4. Minimum monthly auditing of the trees by the Project Arborist with audit reports to be compiled and submitted as part of plan sealing.
5. Mulch to be reapply every 6 months or are specified by the Project Arborist.
6. Undertake remedial pruning of deadwood from the retained trees. Any pruning works to be undertaken by minimum AQF Level 3 Arborist under the supervision of the Project Arborist (AQF Level 5).

Preliminary Tree Protection Plan

All approvals to be in place before works commence. Tree Protection Fencing to be installed and audited before pre-start meetings are undertaken.



Project Arborist (AQF level 5) to supervise works within the TPZ of retained trees.

No cut or surface scraping within TPZ of retained trees.

Supplementary watering to be undertaken throughout the operational works. Plant Health Care program to be developed and implemented before and during operational works.

Tree Protection Plan Cont.

Example of a current dam on the subject site.

Conclusion

For all retained trees, with due care, implementation of appropriate work methodology as detailed in this report and isolation of all TPZs of retained trees from construction works, the potential for ill-effect to retained/affected trees can be minimised in accordance with guidelines of AS4970:2009 – Protection of trees on development sites.

The following must occur:

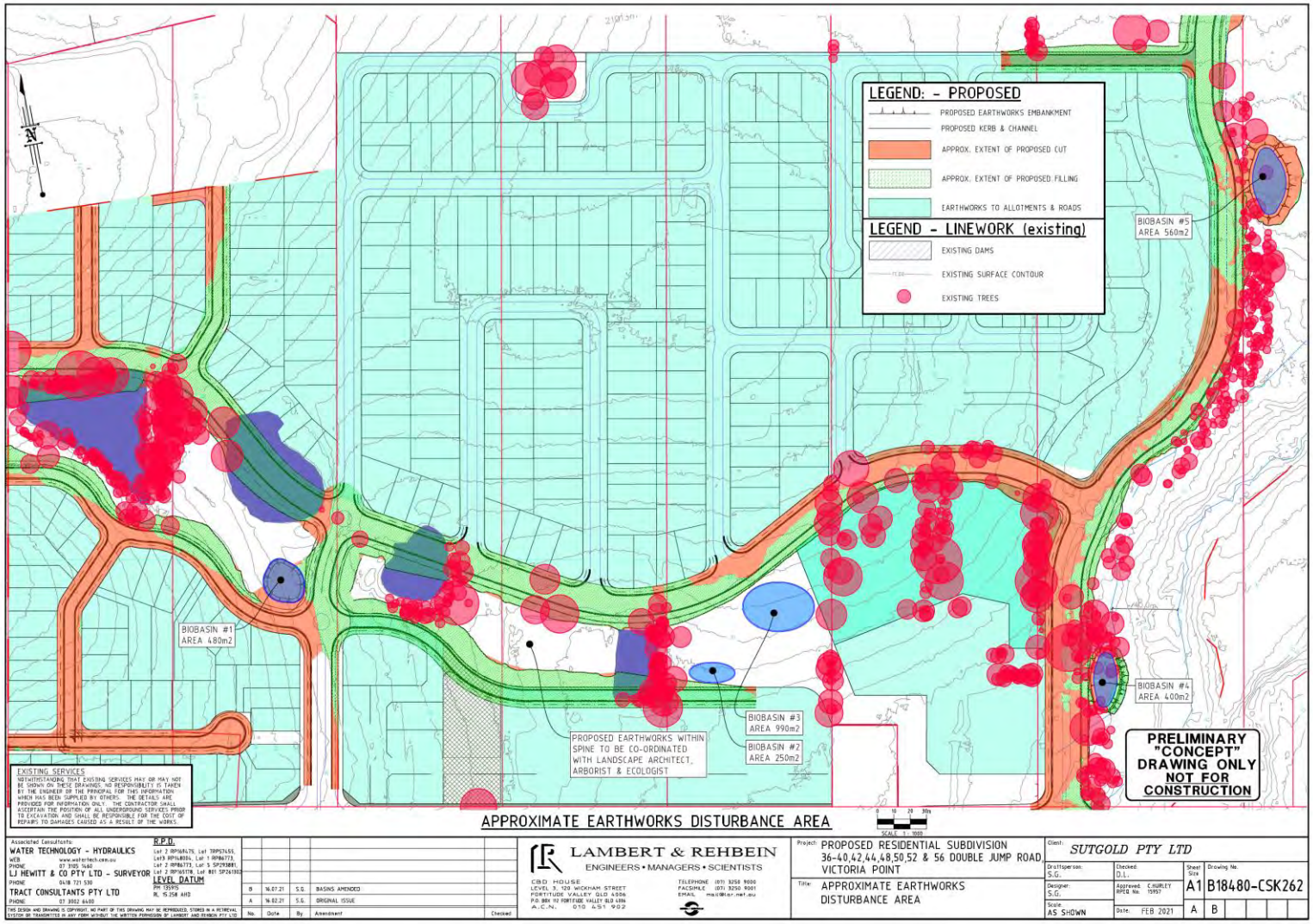
RCC approvals must be in place prior to the commencement of any
tree work for future construction work. Approvals are required should the Project Arborist prescribe pruning such as crown clean, canopy lift and/or directional pruning.

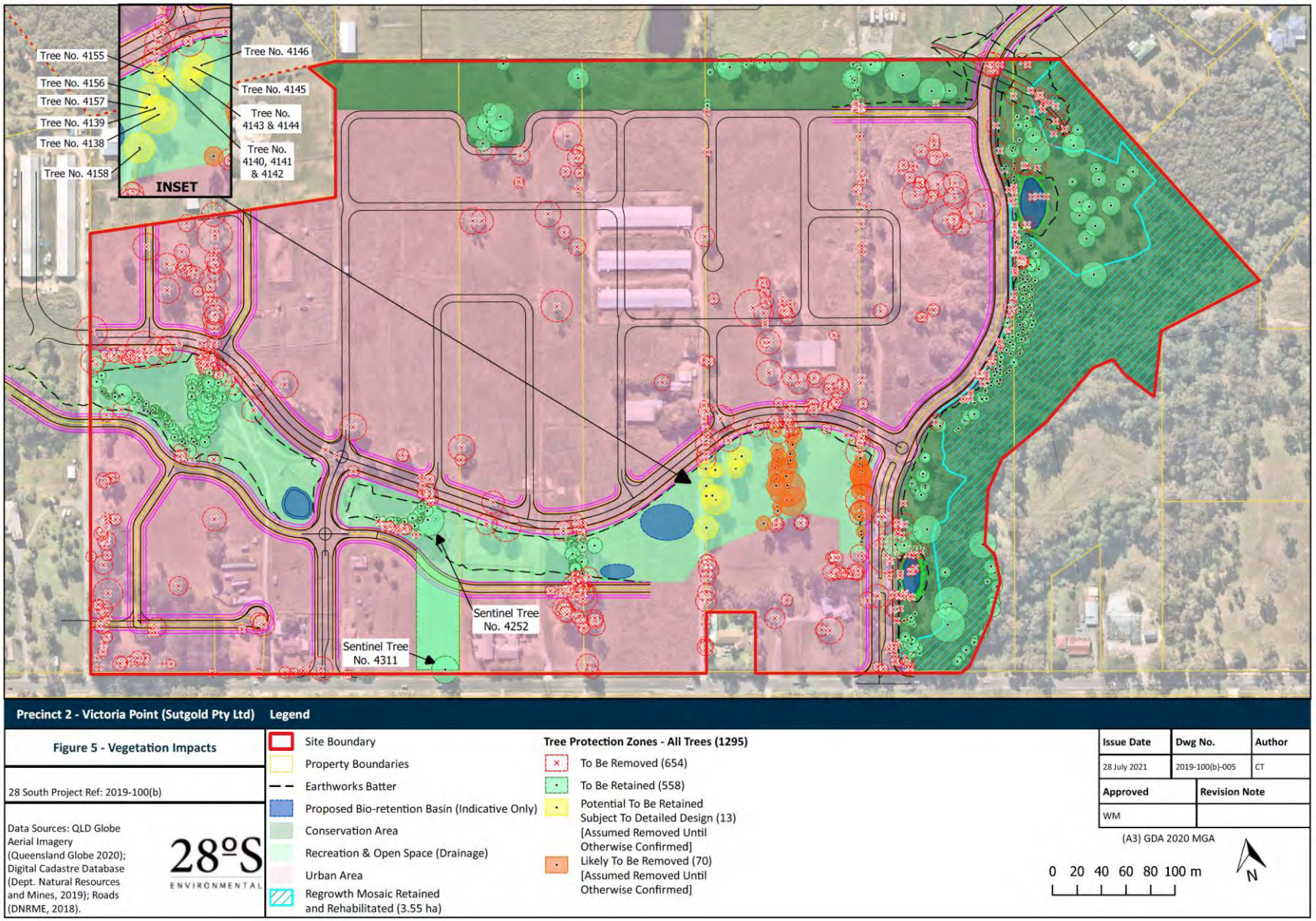
- Project Arborist must be appointed and engaged to guide the protection of protected trees from project commencement, i.e. during Design Planning and during the construction period until its completion.
- **All Arboricultural reports, TMPs, VMPs & approvals must be included in the CMP**
- Localise shaping of contours to involve Project Arborist advice to minimise damaged to retained trees. Structural soil to be utilised within the TPZ of retained trees.
- The use of sandstone block to be used as required to assist level changes.
- Exploratory low pressure water excavation is to be undertaken as specified.
- Plant Health Care and supplementary watering to be utilised throughout the project.
- Arborist briefing of all engaged persons on their commencement as well as diligent work practice must occur during all approved future construction work.
- Root disturbance must be minimised to prevent accidental injury, compression and the creation of exposure points to allow future entry of pests and pathogens.
- **All work within any TPZ must be supervised by the Project Arborist.**

All work within TPZs must be carried out with due care to avoid mechanical impact with retained tree/s during the construction phase. Where present existing strip footings or installed pier locations are to be utilised for any replacement of existing fence structures; alternatively, any removal of existing fence structures and new replacement work is to be carried out as detailed above, i.e. new fence foundations should utilise post and rail design with no concreted footing unless authorised by the Project Arborist. Sleeving should be installed to provide an impervious barrier between exposed TPZ perimeter/s and new concreted areas to prevent chemical leeching into the surrounding soil of retained trees.

Reactionary processes, such as the emergence of deadwood, dieback etc. are likely to occur as a result of disturbance and/or injury to any retained tree on a construction site. Amended design plans and construction methodology can serve to avoid or minimise the likely emergence of such issues and therefore their associated future OH&S issues to the future occupants of the new dwellings and or pedestrian or vehicular traffic within the vicinity of retained tree/s. Any required pruning is to be undertaken by a minimum AQF Level 3 Arborist under the supervision of the Project Arborist (AQF Level 5).

Plans


LEGEND: - PROPOSED
PROPOSED EARTHWORKS EMBANKMENT
PROPOSED KERB & CHANNEL
APPROX. EXTENT OF PROPOSED CUT
APPROX. EXTENT OF PROPOSED FILLING
EARTHWORKS TO ALLOTMENTS & ROADS
LEGEND - LINEWORK (existing)
EXISTING DAMS
EXISTING SURFACE CONTOUR
EXISTING TREES
BIOBASIN #5
AREA 560m2
BIOBASIN #1
AREA 480m2
BIOBASIN #4
AREA 400m2
BIOBASIN #3
AREA 990m2
BIOBASIN #2
AREA 250m2
PROPOSED EARTHWORKS WITHIN SPINE TO BE CO-ORDINATED WITH LANDSCAPE ARCHITECT, ARBORIST & ECOLOGIST
PRELIMINARY "CONCEPT" DRAWING ONLY NOT FOR CONSTRUCTION
EXISTING SERVICES
APPROXIMATE EARTHWORKS DISTURBANCE AREA
WATER TECHNOLOGY - HYDRAULICS
LJ HEWITT & CO PTY LTD - SURVEYOR
TRACT CONSULTANTS PTY LTD
LAMBERT & REHBEIN
ENGINEERS • MANAGERS • SCIENTISTS
PROPOSED RESIDENTIAL SUBDIVISION
36-40,42,44,48,50,52 & 56 DOUBLE JUMP ROAD
VICTORIA POINT
APPROXIMATE EARTHWORKS
DISTURBANCE AREA
SUTGOLD PTY LTD
A1 B18480-CSK262
FEB 2021


Tree No. 4155
Tree No. 4156
Tree No. 4157
Tree No. 4139
Tree No. 4138
Tree No. 4158
INSET
Tree No. 4146
Tree No. 4145
Tree No. 4143 & 4144
Tree No. 4140, 4141 & 4142
Sentinel Tree No. 4252
Sentinel Tree No. 4311
Precinct 2 - Victoria Point (Sutgold Pty Ltd)
Legend
Figure 5 - Vegetation Impacts
28 South Project Ref: 2019-100(b)
Data Sources: QLD Globe Aerial Imagery (Queensland Globe 2020); Digital Cadastre Database (Dept. Natural Resources and Mines, 2019); Roads (DNRME, 2018).
28ºS ENVIRONMENTAL
Site Boundary
Property Boundaries
Earthworks Batter
Proposed Bio-retention Basin (Indicative Only)
Conservation Area
Recreation & Open Space (Drainage)
Urban Area
Regrowth Mosaic Retained and Rehabilitated (3.55 ha)
Tree Protection Zones - All Trees (1295)
To Be Removed (654)
To Be Retained (558)
Potential To Be Retained Subject To Detailed Design (13) [Assumed Removed Until Otherwise Confirmed]
Likely To Be Removed (70) [Assumed Removed Until Otherwise Confirmed]
Issue Date
Dwg No.
Author
28 July 2021
2019-100(b)-005
CT
Approved
Revision Note
WM
(A3) GDA 2020 MGA
0 20 40 60 80 100 m
N

Site Photos

Appendix 1: CV

ROGER RANKINE

AQF LEVEL 8 ARBORIST

T: 0408 161 015 E: office@independentarb.com.au

PROFESSIONAL PROFILE

Independent Arboricultural Services, a leading provider of independent arboricultural consulting operating within the greater Brisbane metropolitan region, south-eastern Queensland and the wider state of Queensland. Providing arboricultural advice, including expert arboricultural witness evidence, reporting and services for all aspects of tree care including pruning, tree diagnosis and remedial treatment, thermal imaging services, tree protection, tree removal, tree related environmental issues, management of trees in public parklands including Qld Government House estate and public facilities including golf courses; management of tree health, tree transplantation and re-establishment of numerous trees ranging in size from small to large potted/bagged and ex-ground trees.

As a Director of Independent Arboricultural Services, I am involved in all aspects of the business including Arboricultural consultancy and advice.

EDUCATION & QUALIFICATIONS

DIPLOMA ARBORICULTURE
Sunshine Coast Tafe (2016)

GRADUATE CERTIFICATE OF ARBORICULTURE
Melbourne University (2018)

BACHELOR OF INTERNATIONAL BUSINESS / MARKETING
Queensland University of Technology (2006)

MASTERS BUSINESS ADMINISTRATION (MBA)
Queensland University of Technology (2008)

CERTIFIED ARBORIST
International Society of Arboriculture (2016)

ISA TRAQ RISK ASSESSMENT
International Society of Arboriculture (2016)

QUANTIFIED TREE RISK ASSESSMENT (QTRA)
QTRA (2016)

AREAS OF EXPERTISE

- Vegetation Assessments
- Vegetation Mapping
- PiCUS Sonic Tomograph
- Tree Rick Assessments
- Arboricultural Impact Assessments
- Arboricultural Consulting & Advice
- Plant Health Care Programs

PROFESSIONAL DEVELOPMENT

- 2017 - Pest & Disease Workshop
- 2018 - Arboriculture Australia National Conference
- 2018 - Plan It Geo, Tree Plotter Course
- 2019 - Kingdom of Fungi Workshop
- 2019 - Soils Workshop

CAREER SUMMARY

DIRECTOR
INDEPENDENT ARBORICULTURAL SERVICES
2009 to Present

- Vegetation assessments, Vegetation mapping, Risk assessments, Plant healthcare programs, Consulting and advice
- With a strong ethos on learning and professional development I am responsible for the technical side of the business which includes PiCUS Sonic Tomograph, Resistograph, Tilt Sensors and Tree Props.
- Responsibilities further include OHS with a strong focus on safety and employee wellbeing.

Cases of Note: Goodrick v BCC 2017

SPICERS AUSTRALIA
2004 to 2016

- National Sales Manager, Digital Media / Regional Manager
- National Sales Manager, Digital Media - Spicers VIC
- Regional Manager, Dalton & iMedia QLD
- Manager – iMedia QLD

ADDITIONAL ROLES

- 2007 to Present - Justice of the Peace
- 2016 to 2017 - Vice President, Queensland Arboricultural Association
- 2017 to 2019 - President, Queensland Arboricultural Association

IT PROFICIENCY

- Microsoft Office suite
- SAP
- B/W reporting
- Salesforce.com

MEMBERSHIPS

- Brisbane Golf Club (1998-Present)
- Member Kenmore Bears AFL Club

ANDREW RANKINE

AQF LEVEL 5 ARBORIST

T: 0412 035 396 E: office@independentarb.com.au

PROFESSIONAL PROFILE

I have provided arboricultural advice, including expert arboricultural witness evidence, reporting and services for all aspects of tree care including pruning, tree diagnosis and remedial treatment, thermal imaging services, tree protection, tree removal, tree related environmental issues, management of trees in public parklands including Qld Government House estate and public facilities including golf courses; management of tree health, tree transplantation and re-establishment of numerous trees ranging in size from small to large potted/bagged and ex-ground trees.

EDUCATION & QUALIFICATIONS

BACHELOR OF ECONOMICS
University of New England Armidale

DIPLOMA OF ARBORICULTURE
Australian School of Horticulture (2002 - 2005)

ADVANCED MANAGEMENT PROGRAMME
Macquarie University

ASA CPA QUALIFICATION
University of Tasmania

AICD COMPANY DIRECTORS QUALIFICATION
University of Queensland

ISA TRAQ RISK ASSESSMENT
International Society of Arboriculture (2013 & 2018)

QUANTIFIED TREE RISK ASSESSMENT (QTRA)
QTRA Lic 2768 (2011)

PROFESSIONAL DEVELOPMENT

- 2006 to Present - Professional Development, Arboriculture
- 2015 - QAA Training Day October
- 2013 to 2014 - QAA Various Workshops
- 2013 - QAA NATSPEC (update)
- 2012 - QAA Local Government Training Workshop
- 2012 - QAA Tree Identification Workshop (Mt Glorious)
- 2011 - QAA Tree Habitat Conservation Workshop
- 2011 - QAA Veteran Tree Workshop
- 2010 - Thermal Imaging of Trees - TTMS Qualification (Cambridge, UK)
- 2010 - Trees and Development; Roots to Best Practice
- 2009 - QAA Tree Identification Training Workshop
- 2009 - ISA Municipal Specialist
- 2008 - ISA Certified Arborist
- 2006 - Tree A-Z Two Day Workshop
- Strategic Management Programme - Macquarie University

CAREER SUMMARY

DIRECTOR
INDEPENDENT ARBORICULTURAL SERVICES
2007 to Present

- Vegetation assessments, vegetation mapping, risk assessments, plant healthcare programs, consulting and advice

DIRECTOR / OWNER
ARBOR OPERATIONS PTY LTD
2002 to 2007

- Arboricultural advice and management of trees on private and State Government owned properties.
- Further arboricultural services included tree pruning, tree transplants from small to 40 tonne trees, complete tree removal, landscaping and tree planting as well as arboricultural consultancy, diagnosis, treatment and reporting.

PLANNING & ENVIRONMENTAL CASES OF NOTE

- Villa World Ltd v Caboolture Shire Council (File No: BD 185 of 2006)
- Inner West Holdings Pty Ltd - v- Brisbane City Council (P&E BD3307 of 2008 - 26.08.09)
- Baskerville v BCC & BGM Projects Pl (P&E 234 of 2010)
- Numerous others 2011 - 2016
- White and White v Ballina SC & Kenny Land and Environment Court proceedings 2019/025062
- Northern Rivers Surveying Pty Ltd trading as Northern Rivers Land Solutions V Ballina Shire Council. Proceeding Numbers 193652, 195374, 197884 of 2019

MEMBERSHIPS

- Current qualified & insured Register Member - Queensland Arboricultural Association (QAA)
- Current qualified & insured Register Member - Arboriculture Australia
- Current accredited & insured Member - International Society of Arboriculture (ISA)
- Royal Sydney Golf Club
- Sanctuary Cove Golf Club

Company Details

Independent Arboricultural Services

Independent Arboricultural Services, incorporated in May 2007, offers a completely independent arborist consulting and reporting service. Its directors and associated consultants bring extensive arboricultural knowledge gained over many years to this company. All consulting staff hold AQF Level 5 (Diploma of Arboriculture). Specialised advice when required, such as provision of survey mapping or engineering advice and certification is sourced from reputable professional providers according to site requirements as per Australian Standard 4970-2009.

Statement of Goal

To deliver continual improvement through the use of world's best arboricultural practices, supported by ongoing education and exposure to leading industry experts and research throughout the world.

Mission Statement

To provide timely, relevant and actionable consulting advice and practice based on the latest available and best scientific arboricultural knowledge.

Environmental Statement

Independent Arboricultural Services supports long term environmental sustainability sustainable sourced paper and ensuring all inks cartridges are recycled where possible.

Independent Arboricultural Services actively seeks to maintain a positive carbon footprint status and to that end is committed to protecting and preserving the environment, continuing to carry out tree planting, transplanting and replacement planting where practical, having planted in excess of 4000 trees in the first 2 years after its inception in May 2007 alone. Arboricultural recommendations involving the removal of tree/s will include replanting at a minimum ratio of 2 trees for any tree removed where possible. All arboricultural recommendations are made in accordance with world's best arboricultural practice and within the Australian Standards AS 4373-2007 Pruning of amenity trees and AS 4970-2009 – Protection of trees on development sites so as to ensure optimal outcomes for all living trees.

Independent Arboricultural Services acknowledges the benefits of healthy trees with good vigour and vitality and actively promotes better understanding in the general community of the contribution that trees make to reducing greenhouse gasses, the contribution of trees to better water retention and the prevention of soil erosion, the ability of trees to provide protection to infrastructure by diffusing strong winds in weather events and the contribution of trees to general liveability within the urban environment.

It is an acknowledged fact that air temperature beneath a tree canopy can be in excess of 5^{o} Celsius lower than the surrounding ambient air temperature thereby reducing reliance on greenhouse gas producing air conditioners and coal fired power sources.

Appendix 16 – Shed in Corridor on 39 Brendan Way

Wayne Moffitt

From: Vaughn Bowden <vaughn@fiteniproperties.com.au>
Sent: Monday, 9 August 2021 12:30 PM
To: Wayne Moffitt
Subject: Summary of Missing Portion of E/W Corridor - refusal of RAL18/022
Attachments: RAL Plan.pdf; Planning Report.pdf; Decision Notice.pdf; 20200527 _General_Meeting_Minutes___WEB (1).pdf

Hi Wayne,

Please see below for an overview of the reason for a missing portion of land identified as corridor that would have completed the 80m wide E/W open space link between our northern boundary and the Andiworth PTY LTD land to the north.

Andiworth PTY LTD option agreement with the owner of 39 Brendan Way, Victoria Point

- Andiworth PTY LTD negotiated an option agreement to acquire a 70m x 40m portion of land from the owner of 39 Brendan Way, Victoria Point to complete their share of the missing portion of a proposed 80m wide shared corridor at the western end of their southern boundary.

- This was done in an attempt to resolve the environmental corridor under negotiation with Council as part of the assessment of ROL005912.

- We understand that Andiworth PTY LTD paid a substantial, non-refundable option fee to the land owner. Settlement was conditional on the approval of a boundary realignment application by Redland City Council.
- Our understanding is that the intention was to dedicate this land at no cost to Council as part of the open space dedication associated with ROL005912.

Application for a boundary realignment (2 into 2 lot) - RAL18/022

- On the 5th March 2018, Andiworth PTY LTD submitted a development application to Redland City Council to realign the boundary of the land that was the subject of the option agreement into their parcel of land to the east. See attached plan.
- With reference to the development application report dated 05/03/2018 "The proposed development will not result in the creation of any additional lots and is required to facilitate the 40m wide east-west linkage required by Council as part of the Current Associated Application (Council Reference: ROL005912)."
- The development application was confirmed as being properly made on 06/04/2018.

Council Decision

- RAL18/022 was noted on the agenda for the Council General Meeting held on 27th May 2020.
- Council officers made a recommendation for refusal based on grounds of irregular shaped lot, reduction of lot size smaller than the scheme benchmarks, non-performance against their desire for a 50m portion of a 100m wide overall corridor and that the structure planning hadn't been completed.
- Councillors adopted the officers recommendation and the application was refused.
- A decision notice, advising of refusal was issued on 03 June 2020.

Regards,

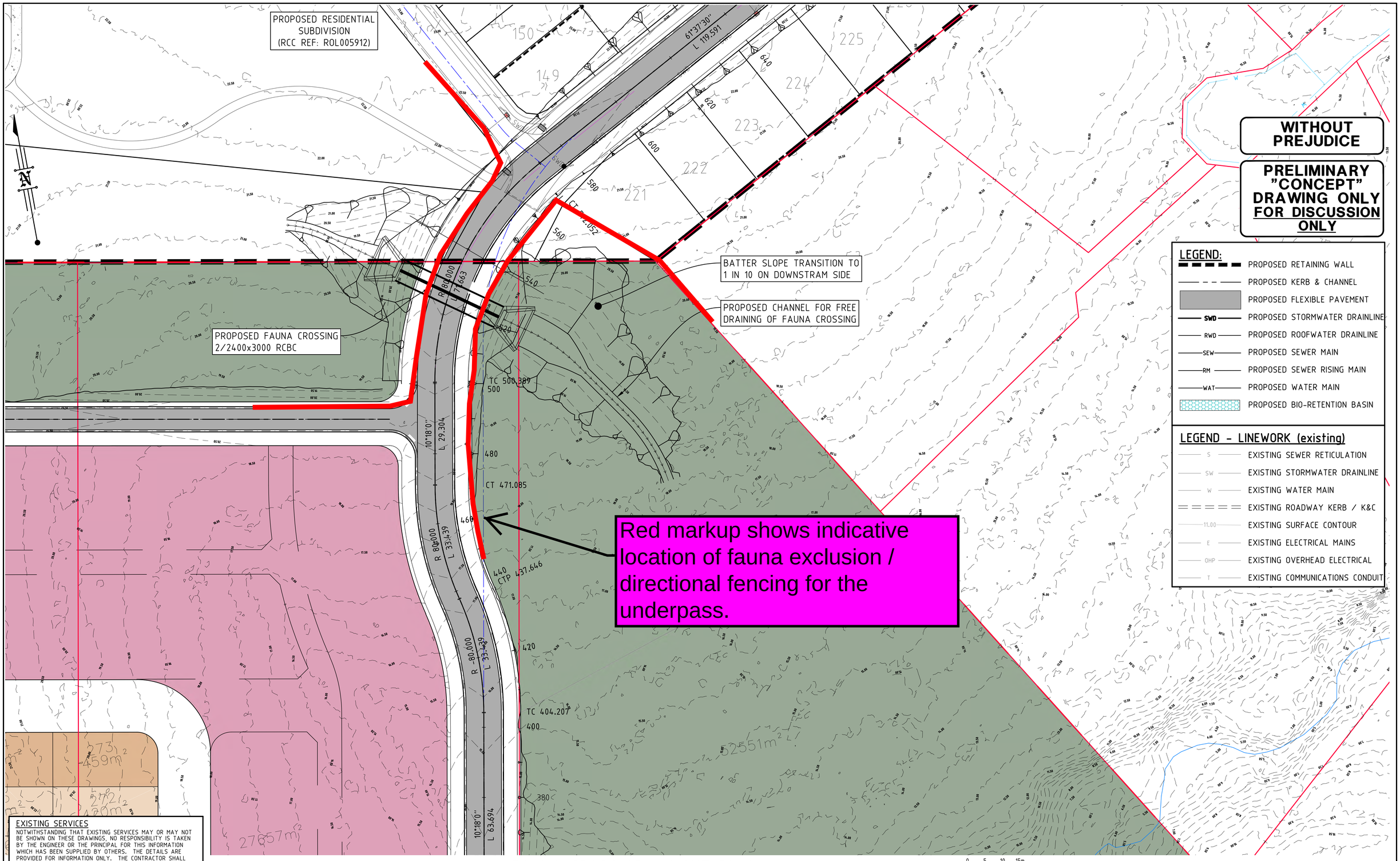
Vaughn Bowden
Executive Development Manager

FiteniProperties

vaughn@fiteniproperties.com.au
0421 755 074
80 Old Cleveland Road
Capalaba Qld 4157

fiteniproperties.com.au

Appendix 17 – Northern Corridor Underpass



EXISTING SERVICES

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FAUNA CROSSING LAYOUT PLAN

SCALE 1 : 500

Associated Consultants:
WATER TECHNOLOGY - HYDRAULICS
WEB www.watertech.com.au
PHONE 07 3105 1460
LJ HEWITT & CO PTY LTD - SURVEYOR
PHONE 0418 721 530
TRACT CONSULTANTS PTY LTD
PHONE 07 3002 6400
R.P.D.
Lot 2 RP169475, Lot 7RP57455, Lot3 RP148004, Lot 1 RP86773, Lot 2 RP86773, Lot 5 SP293881, Lot 2 RP165178, Lot 801 SP261302
LEVEL DATUM
PM 135915
RL 15.258 AHD

No.	Date	By	Amendment	Checked
A	16.02.21	S.G.	ORIGINAL ISSUE	

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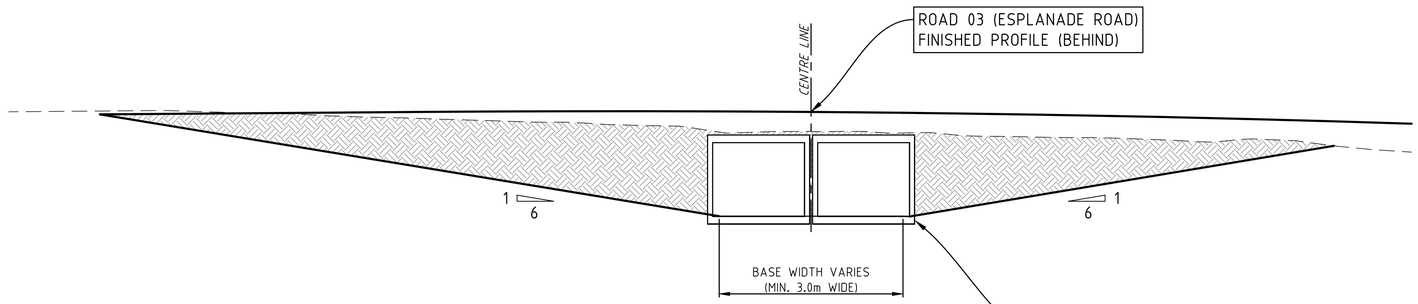
LAMBERT & REHBEIN
ENGINEERS • MANAGERS • SCIENTISTS
CBD HOUSE
LEVEL 3, 120 WICKHAM STREET
FORTITUDE VALLEY QLD 4006
P.O. BOX 112 FORTITUDE VALLEY QLD 4006
A.C.N. 010 451 902
TELEPHONE (07) 3250 9000
FACSIMILE (07) 3250 9001
EMAIL mail@lar.net.au

Project: PROPOSED RESIDENTIAL SUBDIVISION 36-40,42,44,48,50,52 & 56 DOUBLE JUMP ROAD, VICTORIA POINT

Title: FAUNA CROSSING LAYOUT PLAN

Client: *SUTGOLD PTY LTD*

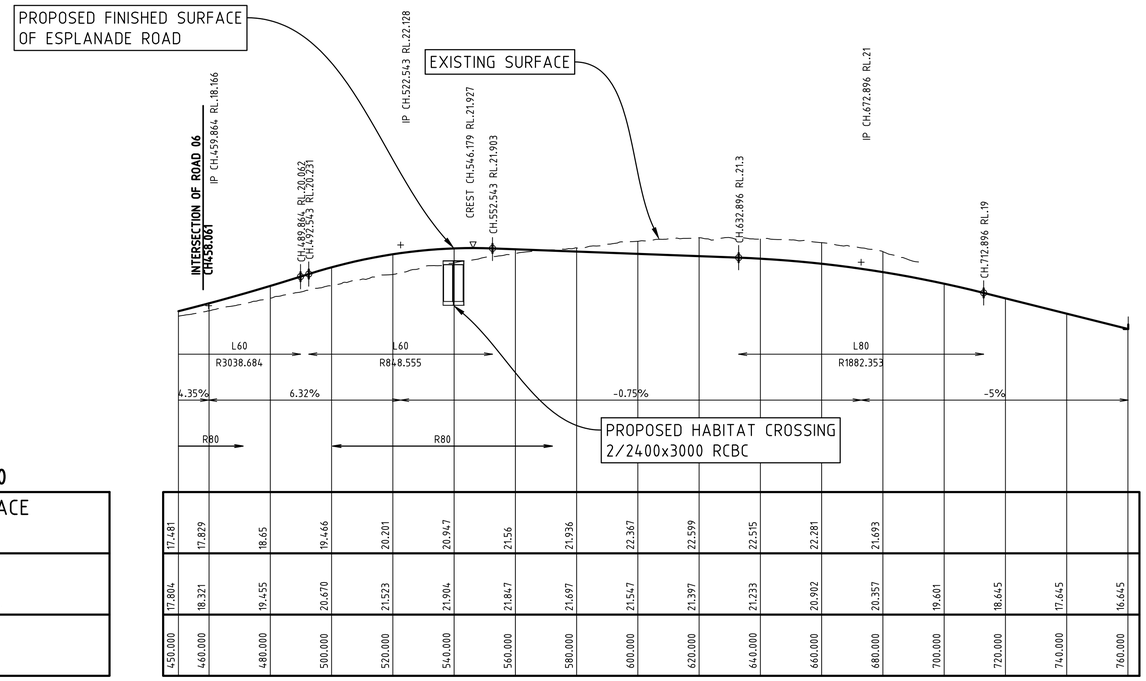
Draftsperson: S.G.	Checked: D.L.	Sheet Size: A1	Drawing No.: B18480-CSK260
Designer: S.G.	Approved: C.HURLEY RPEQ No: 15957		
Scale: AS SHOWN	Date: FEB 2021	A	



FAUNA CROSSING CHANNEL CROSS SECTION

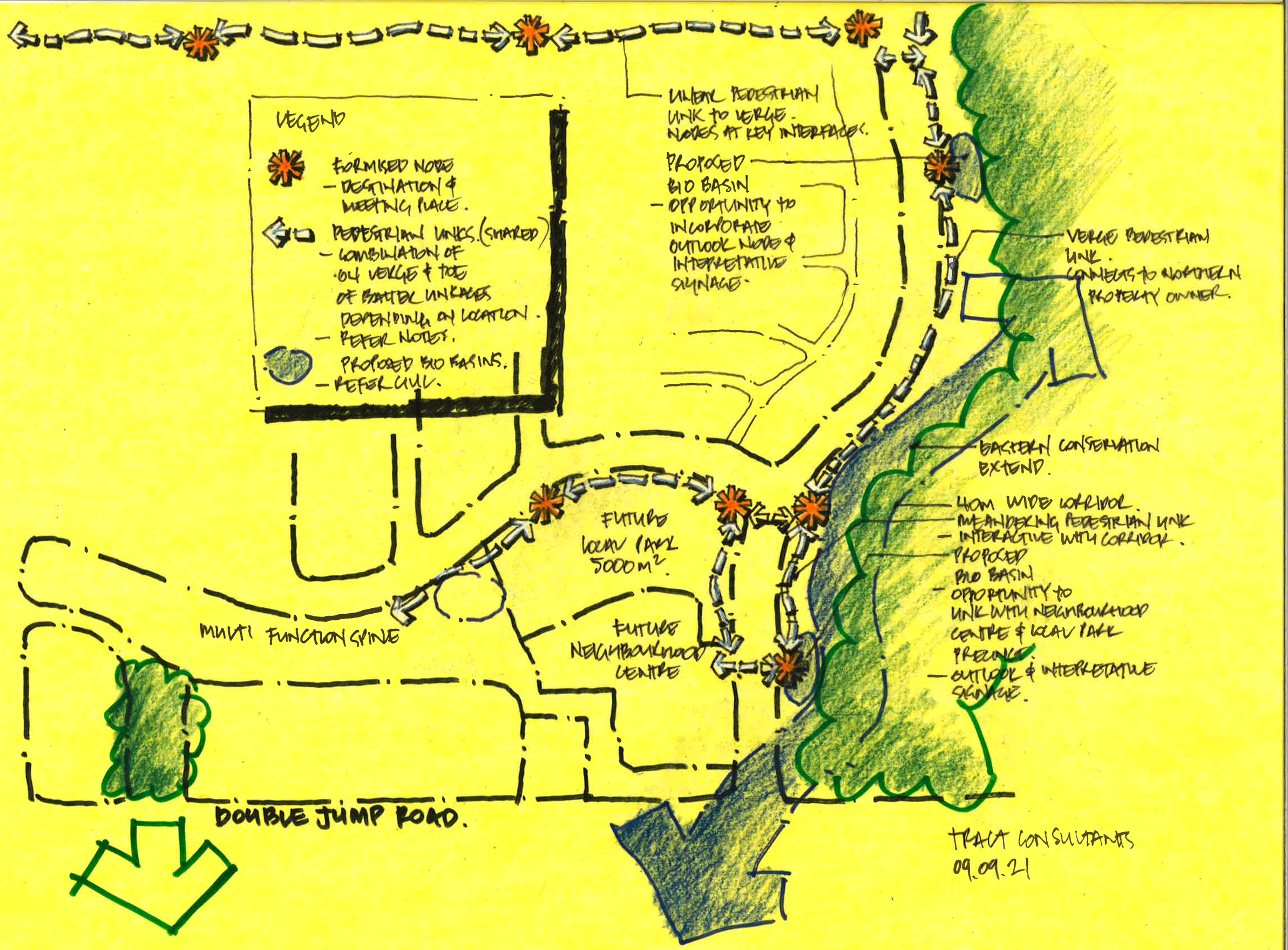
A — SECTION
Scale 1 : 100

SCALE 1 : 100



| Vertical I.P. Details | | |

Appendix 18 – Conceptual Path Network


LEGEND
FORMISED NODE
- DESTINATION & MEETING PLACE.
PEDESTRIAN LINKS. (SHARED)
- COMBINATION OF ON VERGE & TOE OF BATTER LINKAGES DEPENDING ON LOCATION.
- REFER NOTES.
PROPOSED BIO BASINS.
- REFER CIVIL.
URBAN PEDESTRIAN LINK TO VERGE. NODES AT KEY INTERFACES.
PROPOSED BIO BASIN
- OPPORTUNITY TO INCORPORATE OUTLOOK NODE & INTERPRETATIVE SIGNAGE.
VERGE PEDESTRIAN LINK. CONNECTS TO ADJOINING PROPERTY OWNER.
EASTERN CONSERVATION EXTEND.
40m WIDE CORRIDOR.
MEANDERING PEDESTRIAN LINK
- INTERACTIVE WITH CORRIDOR.
PROPOSED BIO BASIN
- OPPORTUNITY TO LINK WITH NEIGHBOURHOOD CENTRE & LOCAL PARK PRECINCT
- OUTLOOK & INTERPRETATIVE SIGNAGE.
FUTURE LOCAL PARK 5000m².
FUTURE NEIGHBOURHOOD CENTRE
MULTI FUNCTION SPINE
DOUBLE JUMP ROAD.
TRACT CONSULTANTS
09.09.21

Appendix 19 – Biobasins Revegetation

33

Bioretention Technical Design Guidelines

Version 1, October 2012

waterbydesign

Water by Design is a program of Healthy Waterways Ltd

HEALTHY WATERWAYS

2.2.5 Adjacent to natural areas

Locating bioretention systems adjacent to natural areas such as bushland or riparian corridors is an easy way to achieve benefits above and beyond traditional stormwater management requirements. Bioretention systems located next to natural areas enhance the overall green space and provide for wildlife habitat and movement (Figure 8). They also have the potential to reduce maintenance costs through reducing edge effects and shading weeds.

Bioretention systems adjacent to natural areas are integrated with their surrounding landscape. This creates systems with informal shapes and gentle batter slopes, rather than hard edges. Planting in such systems should complement surrounding landscape and involve a well-structured and diverse landscape including grasses, sedges, shrubs and trees.

Bioretention systems adjacent to natural areas are typically end-of-pipe systems, receiving inflows from a piped network. They can be sited within flood detention infrastructure. Their filter media surface area is typically 50–800 m².

Refer also Page 2.

Figure 8 Examples of bioretention systems adjacent to natural areas

Photo: Jack Mullaly, Logan City Council

Photo: Logan City Council

Photo: Jack Mullaly, Healthy Waterways

2.3 Configurations

The multiple contexts that bioretention basins are used in (see Section 2.2) require bioretention configurations that can adapt to the nature of the site in which they are located. Selecting the appropriate configuration for the site is important to ensure it integrates into the surrounding landscape, functions effectively and allows for easy and cost effective maintenance. There are four main configurations of bioretention system:

- Bioretention Basins
- Bioretention Swales
- Biopods
- Bioretention Street Trees.

2.3.1 Bioretention basins

Bioretention basins are an end-of-pipe bioretention system. They can vary in size greatly, typically from 100-800m² of filter media surface area. Bioretention basins are often located adjacent to parkland or natural areas (Figure 9). The vegetation used reflects the location. For example, bioretention basins located adjacent to parkland include vegetation compatible with other landscaping in the parkland, while bioretention basins adjacent to natural areas use species which reflect the ecosystem of that natural area.

Figure 9 Examples of bioretention basins

Photo: Shaun Leinster, DesignFlow

Photo: Shaun Leinster, DesignFlow

Photo: Shaun Leinster, DesignFlow

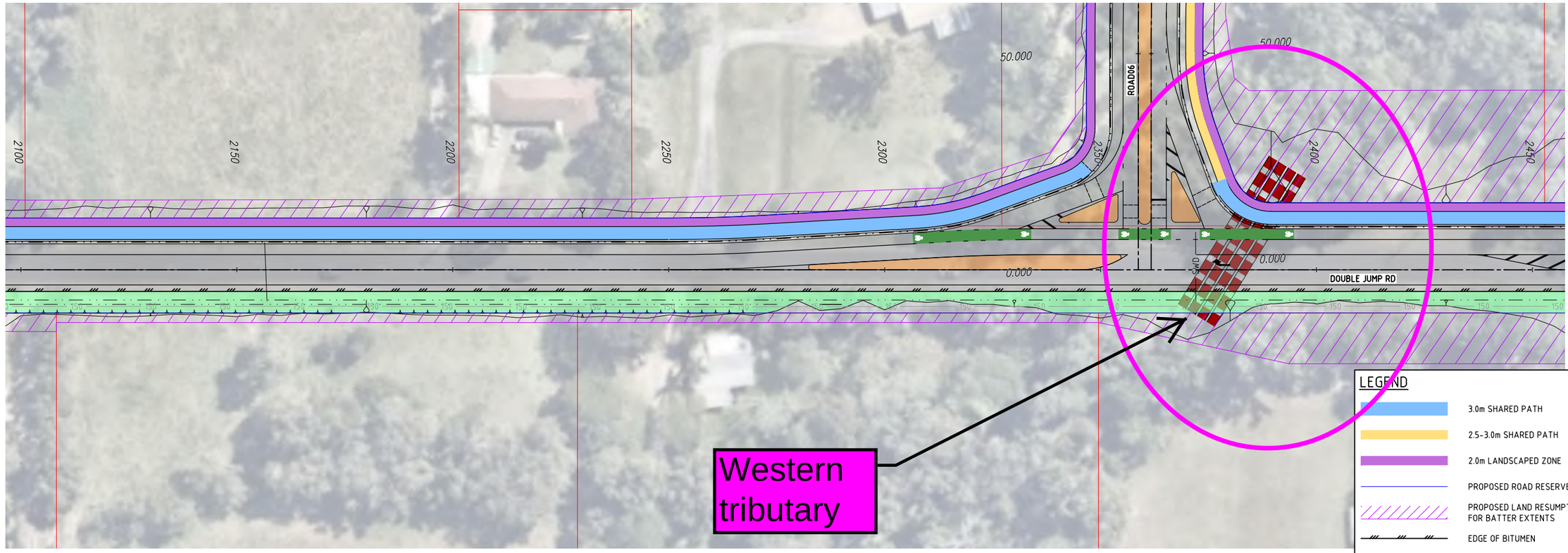
Photo: Jack Mullaly, Logan City Council

Appendix 20 - Double Jump Road Upgrade Concept Engineering Design Extract

JOINS DWG B00386-SK020

JOINS DWG B00386-SK016

JOINS DWG B00386-SK018



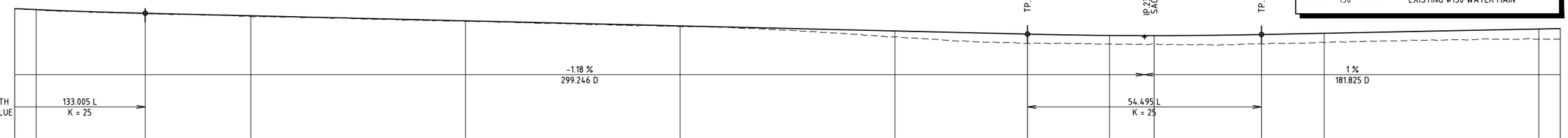
LEGEND

- 3.0m SHARED PATH
- 2.5-3.0m SHARED PATH
- 2.0m LANDSCAPED ZONE
- PROPOSED ROAD RESERVE BOUNDARY
- PROPOSED LAND RESUMPTION LINE FOR BATTER EXTENTS
- EDGE OF BITUMEN
- ROADSIDE SWALE
- TRAFFIC ISLAND
- BICYCLE LANE LINEMARKING
- STORMWATER CULVERT
- EARTHWORKS EXTENTS
- 150 EXISTING Ø150 WATER MAIN

LAYOUT PLAN
SCALE 1:500

60 POSTED SPEED

70 DESIGN SPEED



% GRADE GRADE DISTANCE						-1.18 % 299.246 D														1 % 181.825 D				
PARABOLA LENGTH PARABOLA K VALUE			133.005 L K = 25												54.495 L K = 25									
DATUM R.L.3.000																								
EXISTING SURFACE	18.202	18.091	17.599	17.26	16.724	16.113	14.892	14.132	14.074	14.081	14.078	14.259	14.614	14.621										
CUT/FILL DEPTH	-0.013	-0.017	0.046	0.095	0.041	0.063	0.694	1.089	0.995	0.966	1.094	1.06	1.204	1.247										
FINISHED CENTRELINE RL	18.189	18.074	17.646	17.355	16.766	16.176	15.586	15.221	15.069	15.047	15.172	15.318	15.818	15.868										
PEGGED CHAINAGE	2095	2100	2125.402	2150	2200	2250	2300	2330.898	2350	2360.393	2385.393	2400	2450	2455										

HORIZ. CURVE RADIUS

SCALE 1:500 (A1) 1:1000 (A3)

10 7.5 5 2.5 0 10 20 30 40 50m

5 3.75 2.5 1.25 0 5 10 15 20 25m

SCALE 1:250 (A1) 1:500 (A3)

DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

ROAD01 LONGITUDINAL SECTION

SCALE 1: 500 (HORIZ.) 1: 250 (VERT.)

DOUBLE JUMP ROAD

No.	Amendments	Drawn	Design	Design Chk	Appd	Date
G	PROPOSED BOUNDARIES ADDED	JH	LD	MKB		08.04.21
D	MINOR AMENDMENTS	JH	LD	MKB		19.02.21
C	MINOR AMENDMENTS	JH	LD	MKB		03.02.21
B	MINOR AMENDMENTS	JH	LD	MKB		08.12.20
A	CONCEPT ISSUE	JT	LD	MKB		

Registered Engineer

Date Register

ENGINEERING CERTIFICATION

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PREPARED FOR Redland CITY COUNCIL

Empower ENGINEERS & PROJECT MANAGERS ABN 23 010 743 692

Client REDLANDS CITY COUNCIL

Project DOUBLE JUMP ROAD UPGRADE

Title CONCEPT ROADWORKS PLAN
SHEET 7 OF 12

Datum AHD
PSM .
RL .
(MGA) COORD

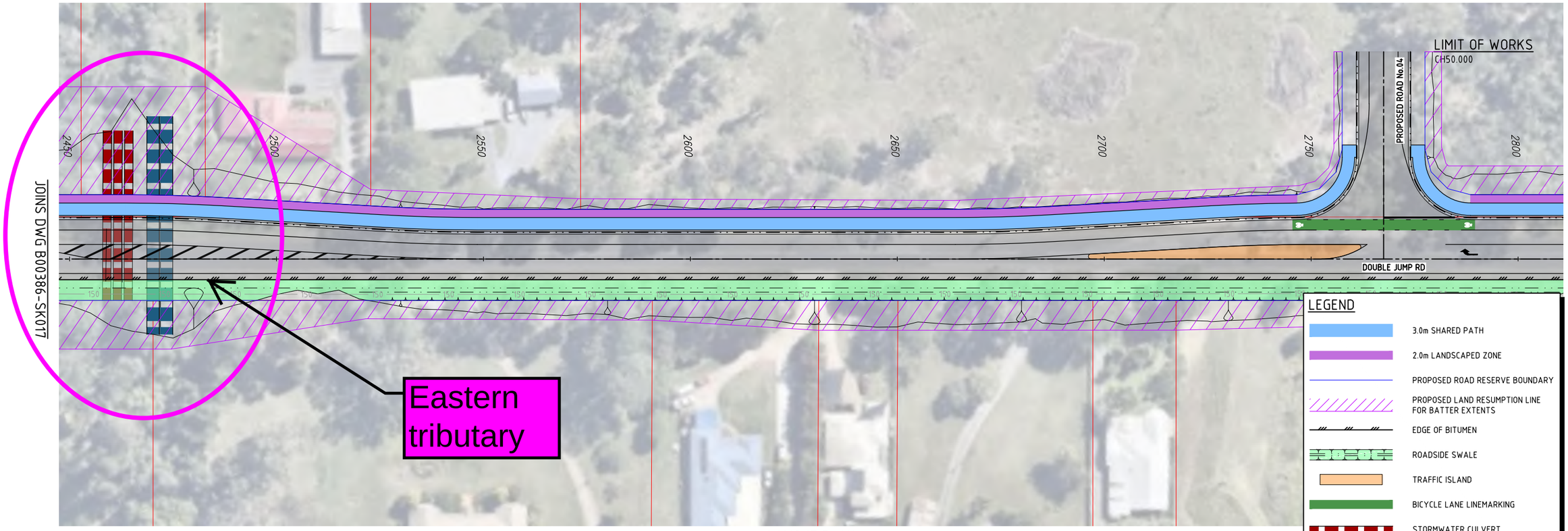
NOT FOR CONSTRUCTION

Project No. B00386 Drawing No. SK017 Rev G

File Name: C:\12d5\data\MANU20SYN01\B00386_1013\4.CIVIL_DRGS\4.1 SKETCHES\DOUBLE JUMP PRELIM\B00386-DJ-SK010

User: JAMES HUNT

Plot Date: 8/04/2021 9:53 AM



LAYOUT PLAN
SCALE 1:500

60 POSTED SPEED

70 DESIGN SPEED

3000 (WIDE) x 2400 (HIGH) UNDERPASS FAUNA CROSSING. MIN. 450mm COVER TO ROAD ℄

| | | |

LEGEND

- KOALA PROOF FENCING
- FAUNA CROSSING - OVERHEAD
- FAUNA CROSSING - UNDERPASS

OVERHEAD FAUNA CROSSING - OPTION 1

NOT TO SCALE

OVERHEAD FAUNA CROSSING - OPTION 2

NOT TO SCALE

KINGFISHER RD

BUNKER ROAD

HEINEMANN RD

ROAD 04

ROAD 05

DOUBLE JUMP RD

KOALA PROOF FENCING AS PER TMR STD DRG 1603. FENCING TO EXTEND 50m PAST FAUNA CROSSING IN EACH DIRECTION

UNDERPASS FAUNA CROSSING. REFER TO DRG SK036 FOR DETAILS

KOALA PROOF FENCING AS PER TMR STD DRG 1603. FENCING TO EXTEND 50m PAST FAUNA CROSSING IN EACH DIRECTION

KOALA PROOF FENCING AS PER TMR STD DRG 1603. FENCING TO EXTEND 50m PAST FAUNA CROSSING IN EACH DIRECTION

OVERHEAD FAUNA CROSSING AS PER DTMR FAUNA SENSITIVE ROAD DESIGN MANUAL VOLUME 2, PART 6.4

JOINS BELOW

ROAD 10

ROAD 06

ROAD 08

CLEVELAND REDLAND BAY RD

Eastern tributary

KOALA PROOF FENCING AS PER TMR STD DRG 1603. FENCING TO EXTEND 50m PAST FAUNA CROSSING IN EACH DIRECTION

KOALA PROOF FENCING AS PER TMR STD DRG 1603. FENCING TO EXTEND 50m PAST FAUNA CROSSING IN EACH DIRECTION

KOALA PROOF FENCING AS PER TMR STD DRG 1603. FENCING TO EXTEND 50m PAST FAUNA CROSSING IN EACH DIRECTION

OVERHEAD FAUNA CROSSING AS PER DTMR FAUNA SENSITIVE ROAD DESIGN MANUAL VOLUME 2, PART 6.4

UNDERPASS FAUNA CROSSING. REFER TO DRG SK036 FOR DETAILS

KOALA PROOF FENCING AS PER TMR STD DRG 1603. FENCING TO EXTEND 50m PAST FAUNA CROSSING IN EACH DIRECTION

KOALA PROOF FENCING AS PER TMR STD DRG 1603. FENCING TO EXTEND 50m PAST FAUNA CROSSING IN EACH DIRECTION

OVERHEAD FAUNA CROSSING AS PER DTMR FAUNA SENSITIVE ROAD DESIGN MANUAL VOLUME 2, PART 6.4

JOINS ABOVE

DOUBLE JUMP RD

0 80 160 240 320 400m

80 60 40 20

SCALE 1:4000 (A1) 1:8000 (A3)

DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

LAYOUT PLAN

SCALE 1:2000

No.	Amendments	Drawn	Design	Design Chk	Appd	Date
A	ORGINAL ISSUE	JJH	LD	MKB		19.02.21

Registered Engineer

Date Register

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DESIGN SERVICES

Redland CITY COUNCIL

Empower ENGINEERS & PROJECT MANAGERS

ABN 23 010 743 692

Client: REDLANDS CITY COUNCIL

Project: DOUBLE JUMP ROAD UPGRADE

Title: FAUNA CROSSING LAYOUT PLAN

Datum: AHD
PSM .
RL .
(MGA) COORD

NOT FOR CONSTRUCTION

Project No. B00386 Drawing No. SK047 Rev A

File Name: C:\12d\S\data\man12dsys\01\b00386_1013\c civil-dcgs\4.1 sketches\double jump prelim\B00386-DJ-SK047
User: JAMES HUNT
Plot Date: 19/02/2021 2:25:41 PM

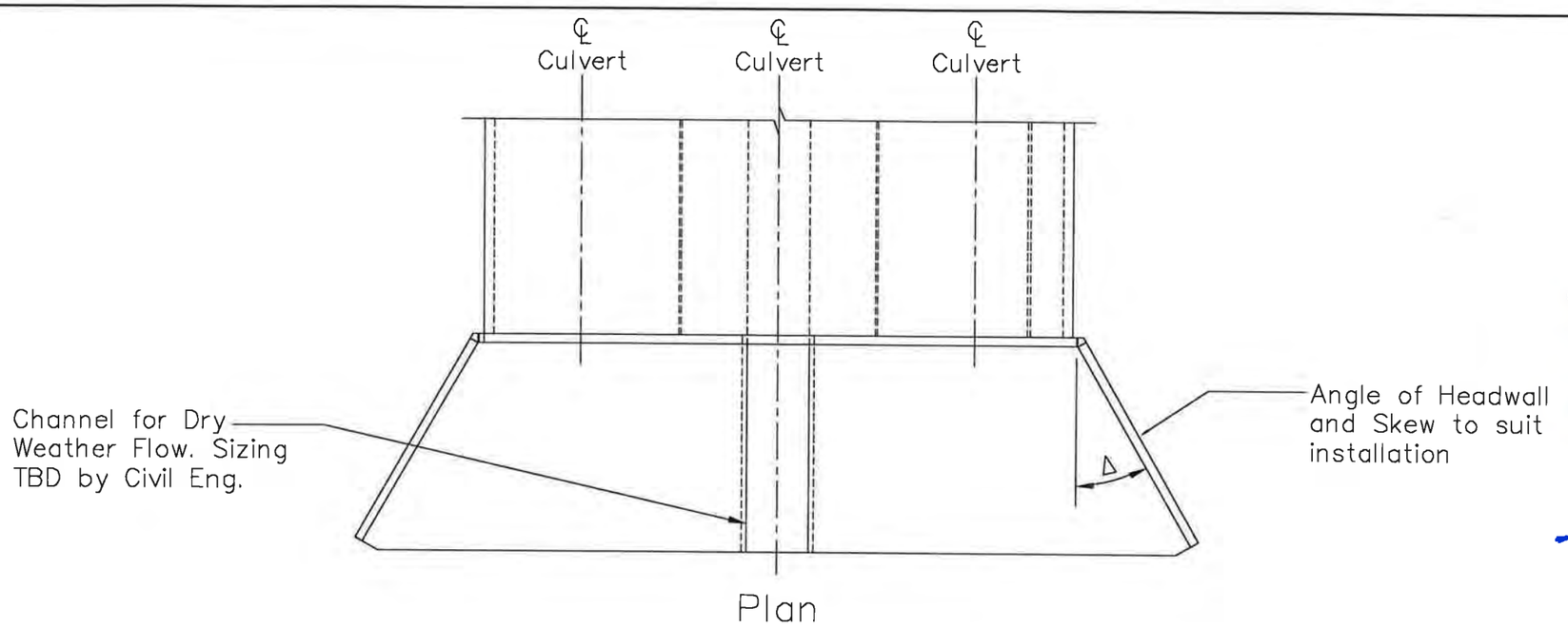
Appendix 21 – Double Jump Road Underpass Concept Design

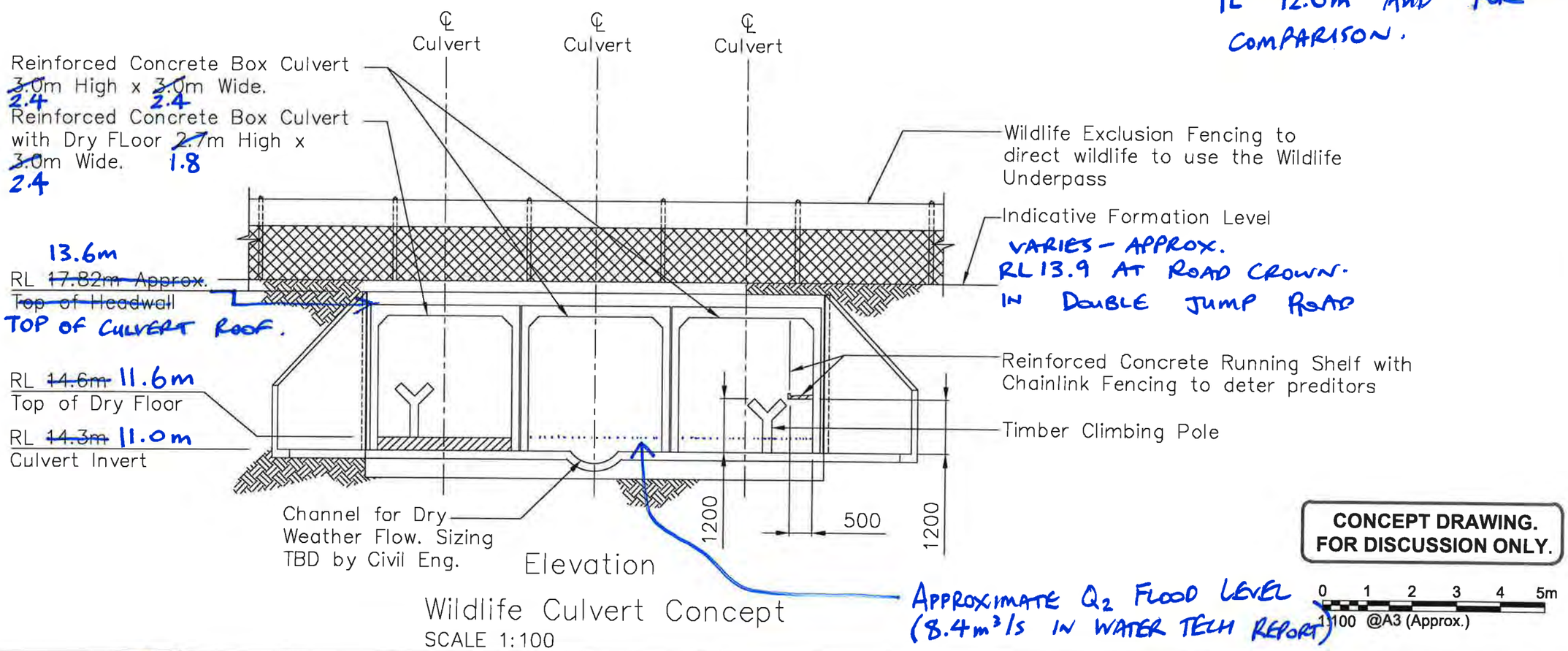
B18480 14/10/2020

POSSIBLE FAUNA CROSSING DETAILS. CH LER.

- ALL DETAILS SUBJECT TO CONFIRMATION OF STANDING WATER LEVELS IN CREEK.

- EXISTING 3x1500Ø RCP CULVERT IS AT APPROX. IL 12.0m AHD FOR COMPARISON.





Wildlife Culvert Concept
SCALE 1:100

CONCEPT DRAWING. FOR DISCUSSION ONLY.

0 1 2 3 4 5m
1:100 @A3 (Approx.)

CAMBRAYconsulting
Traffic Engineering and Transport Planning
Suite 2601, 21 Mary Street Brisbane Q 4000.
t : 07 3221 3503 | e : contact@cambray.com.au

DRAWING TITLE
WildLife Culvert Underpass Concept
Double Jump Road

LOCATION
Double Jump Road,
Redland Bay, QLD

REV	DATE	AMENDMENT / ISSUE	DWN	CHK
A	xx xx xx	AMENDMENT_A	xx	xx

PRELIMINARY
NOT FOR CONSTRUCTION

JOB No. // DRAWING No.
AND0219-01 // SK01

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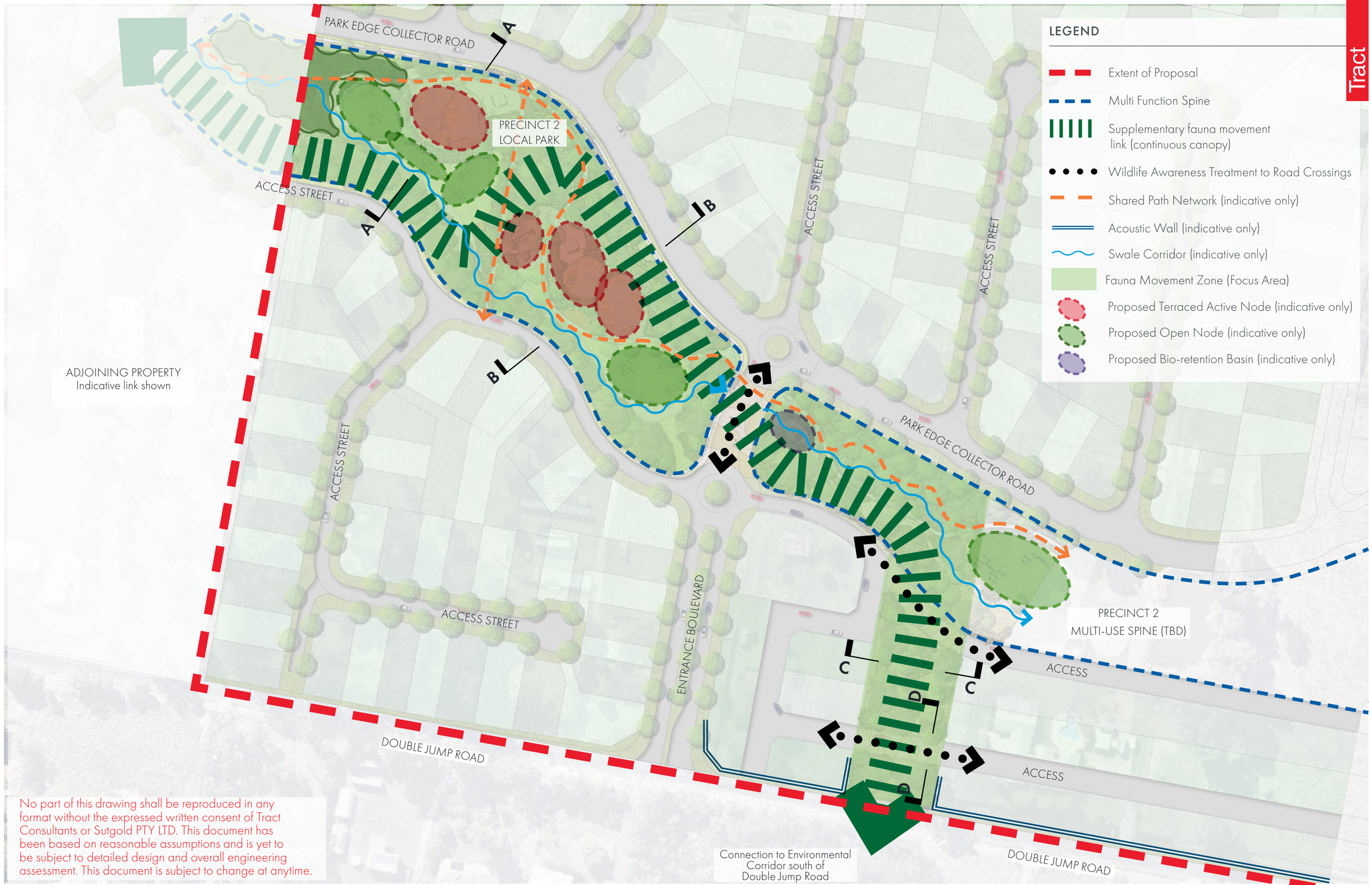
DATE 16.04.2020
Scale (A3) 1:100
PREPARED FOR Discussion Only

Appendix 22 – Landscape Design for the Multi-function spine



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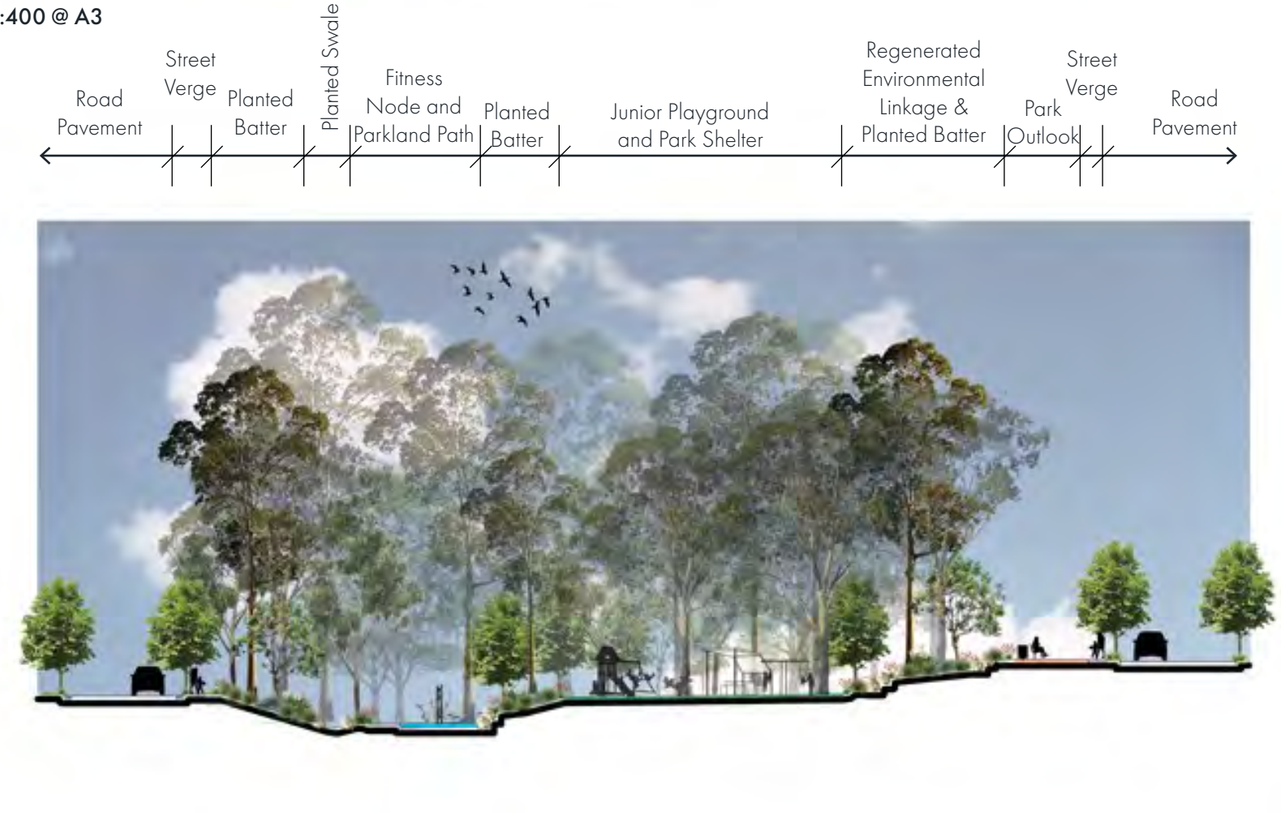
Drawing Title	Project Name		Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 2 | Environmental Linkage Option 1	Double Jump Road, Victoria Point	FiteniProperties	715-0859-02-DR01	02	25.11.2020	DG	PM	PM	NTS

TYPICAL 'UPPER' LOCAL PARK CORRIDOR SECTION A-A | 1:400 @ A3

TYPICAL 'LOWER' LOCAL PARK CORRIDOR SECTION B-B | 1:400 @ A3



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Drawing Title	Project Name		Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 2 | Local Park Landscape Concept Sections	Double Jump Road, Victoria Point	FiteniProperties	715-0859-02-DR004	02	25.11.2020	DG	PM	PM	As shown

TYPICAL SECONDARY ENVIRONMENTAL LINKAGE TO DOUBLE JUMP ROAD SECTION C-C | 1:200 @ A3

TYPICAL SECONDARY ENVIRONMENTAL LINKAGE THROUGH ACCESS STREET TO DOUBLE JUMP ROAD SECTION D-D | 1:200 @ A3

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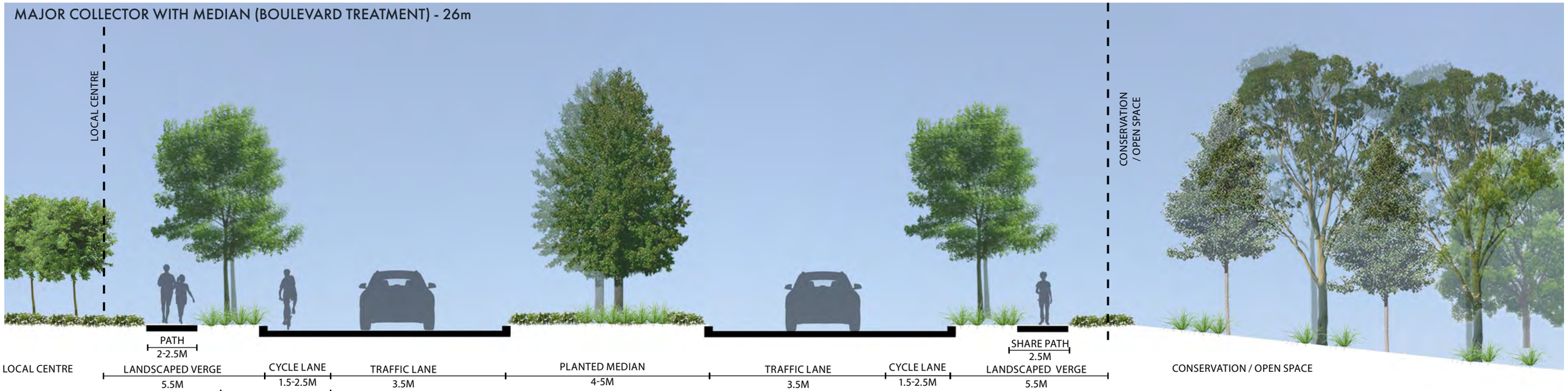
Drawing Title	Project Name		Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 2 | Habitat Linkage Sections	Double Jump Road, Victoria Point	FiteniProperties	715-0859-02-DR005	02	25.11.2020	DG	PM	PM	As shown

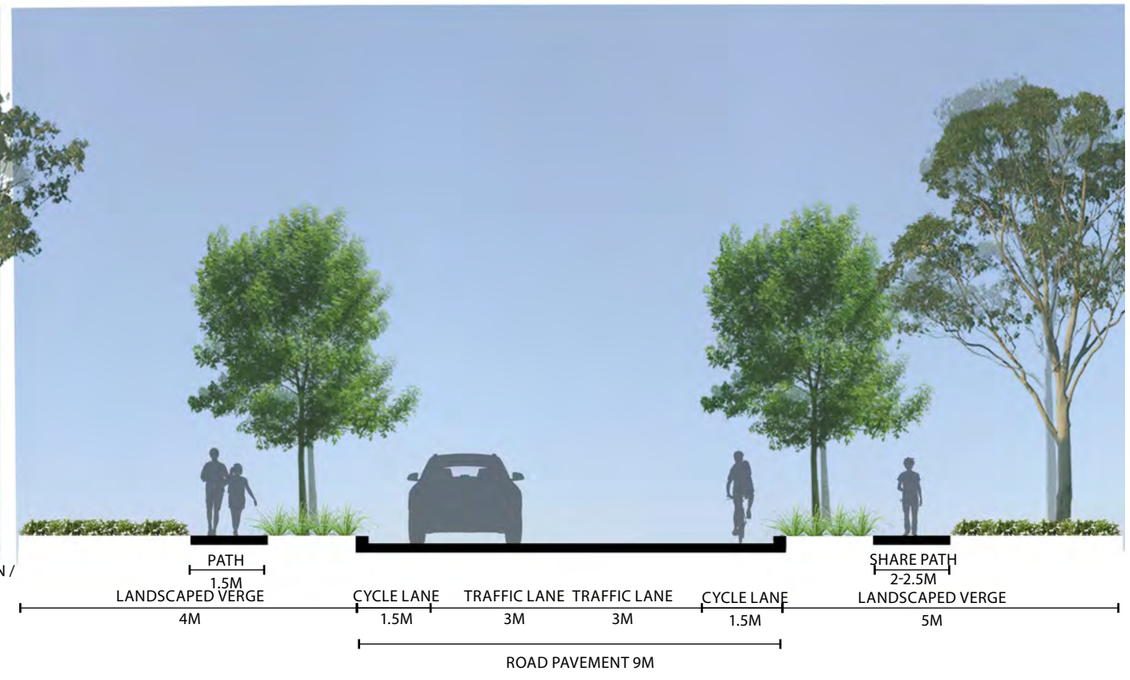
Tract

MAJOR COLLECTOR WITH MEDIAN (BOULEVARD TREATMENT) - 26m



COLLECTOR STREET - PARK EDGE 21m (INCLUDING BUS ROUTE)

COLLECTOR ROAD 18m



Drawing Title	Project Name		Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 2 - Collector Street Sections	Double Jump Road, Victoria Point	FiteniProperties	0715-0859-00- DR07	04	25.11.2020	NM	PM	PM	1:100 (A3)

0 1 2 5

WITHOUT PREJUDICE

Tract

LEGEND

- Extents of Development
- Openspace Corridor
- Connected Environmental Corridor
- Wildlife Awareness Treatment to Road Crossings
- Shared Path Network (indicative only)
- Acoustic Wall (indicative only)
- Swale Corridor (indicative only)
- Proposed Terraced Active Node (indicative only)
- Proposed Open Node (indicative only)
- Proposed Bio-retention Basin (indicative only)

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Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 2 | PARK CORRIDOR PLAN	Double Jump Road, Victoria Point	715-0859-00-D001	01	17.11.2020	DG	PM	PM	NTS

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Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 2 | Open Space Masterplan - DRAFT ONLY	Double Jump Road, Victoria Point	715-0859-00-D001	01	11.11.2020	DG	PM	PM	NTS

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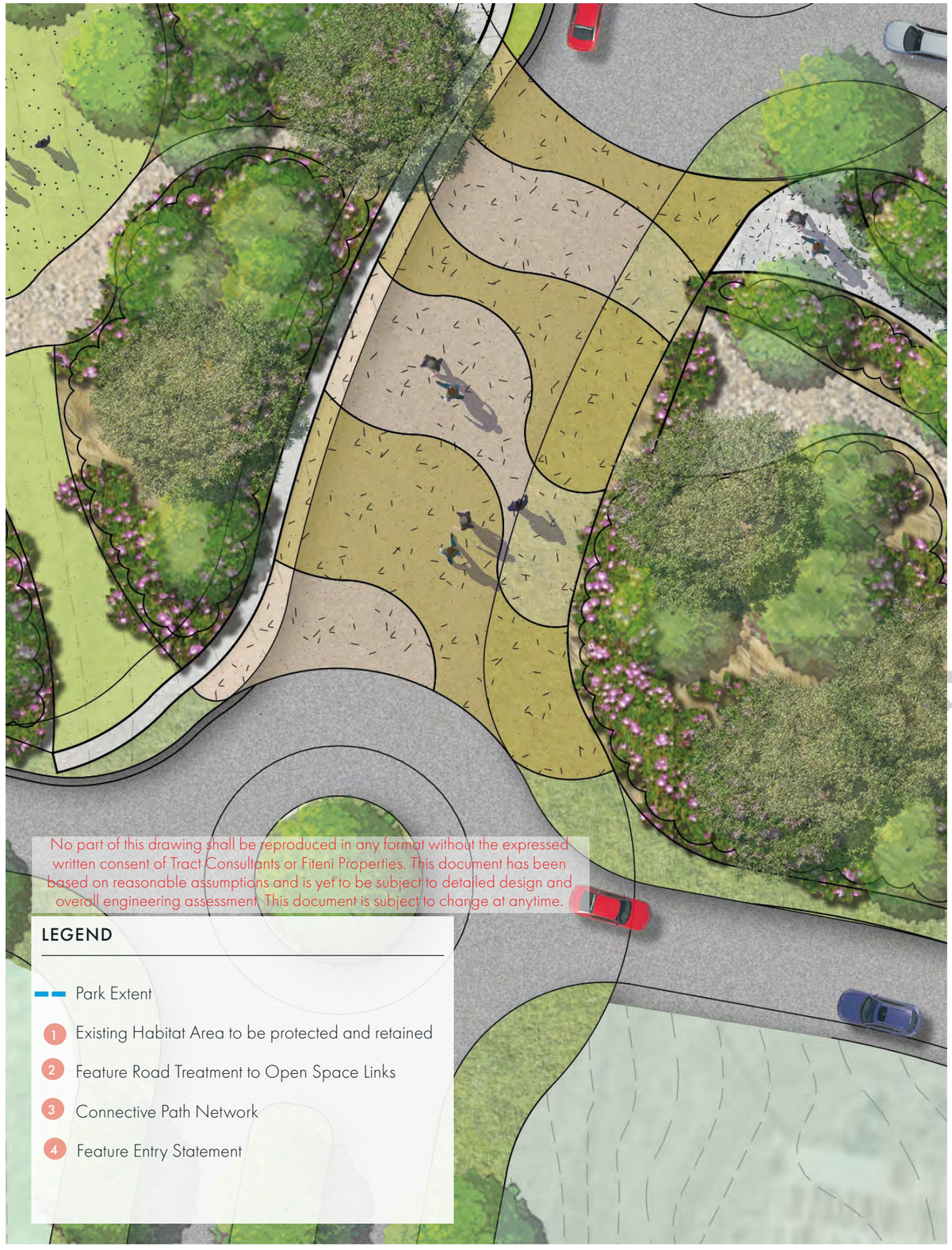
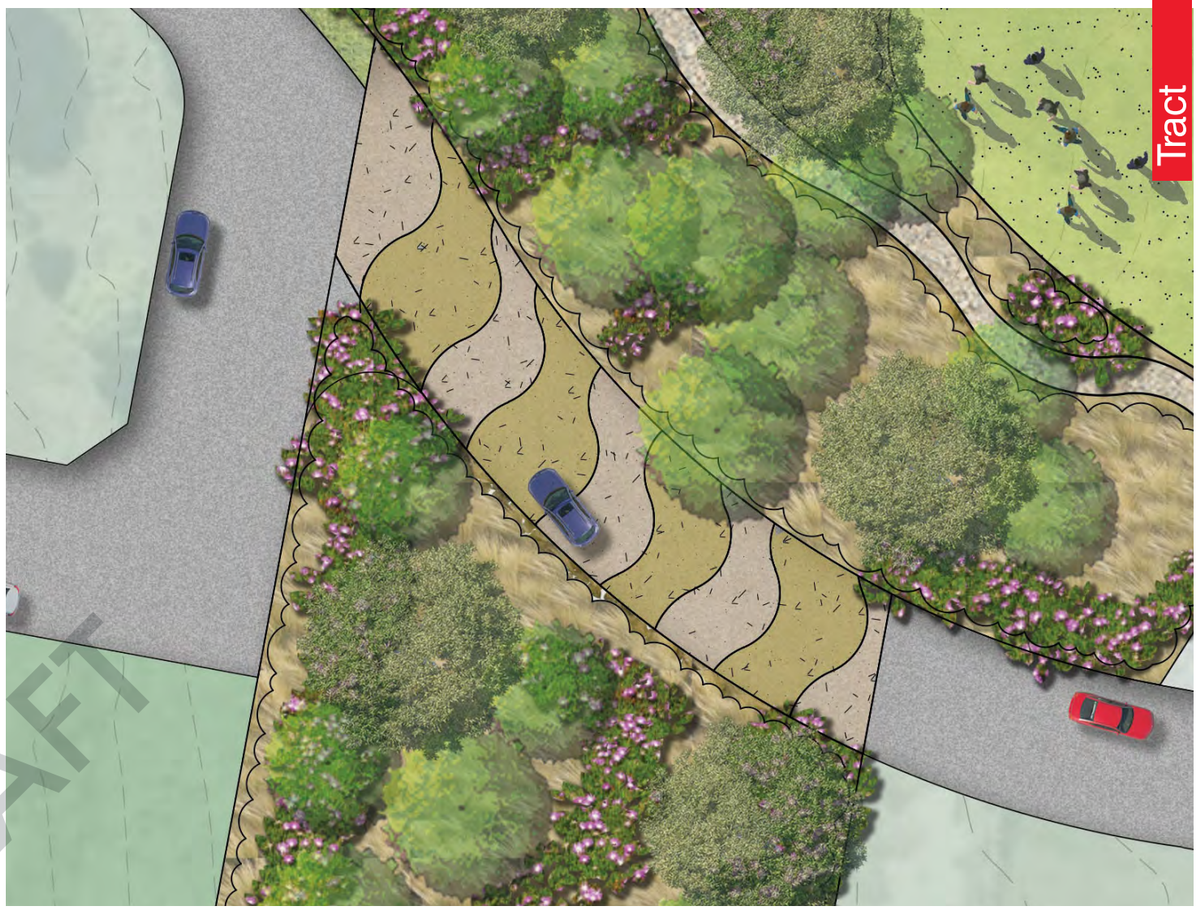
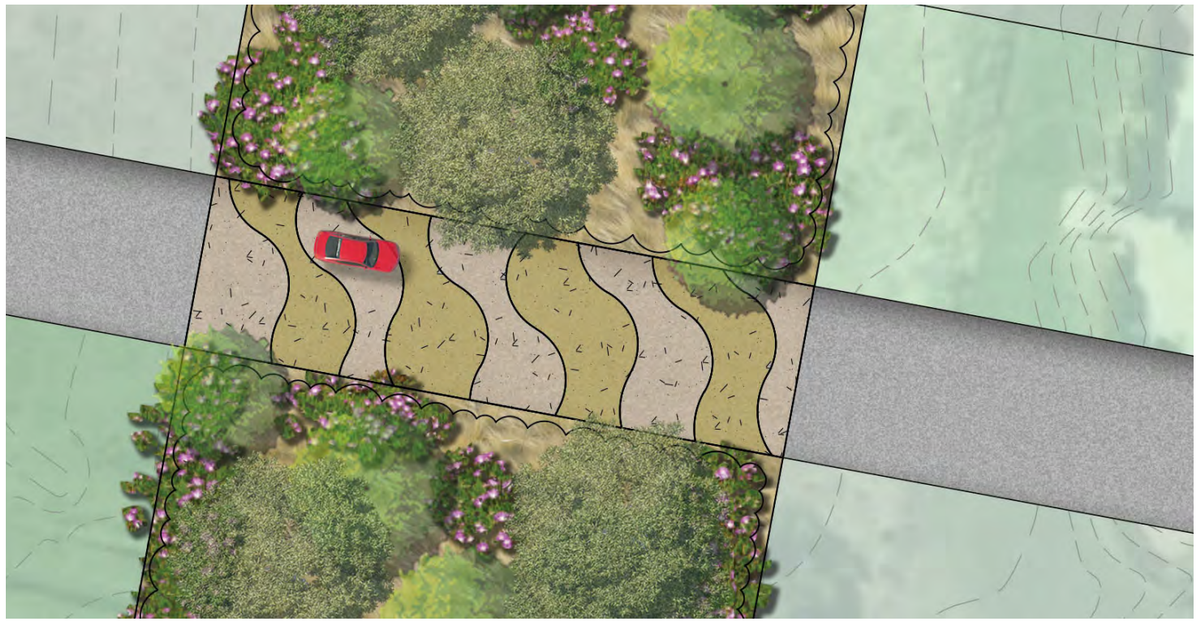
LEGEND

- Park Extent
- 1 Existing Habitat Area to be protected and retained
- 2 Open grass multi-use kick-about space
- 3 Shelter
- 4 Major Path Network
- 5 Rock Lined Drainage Swale
- 6 Shaded Senior Playground
- 7 Nature Play integrated into existing dam wall location to utilise a terraced activity approach amongst naturally shaded environment
- 7 Junior and Toddler Playground
- 8 Fitness Station
- 9 Rest Area with Bench Seating
- 10 Deck Bridge/Lookout
- 11 Informal Nature Trail Pathway

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Stage 2 | Local Park Landscape Concept	Double Jump Road, Victoria Point	715-0859-00-D001	01	11.11.2020	DG	PM	PM	1:1000 @ A3







DRAFT

Tract

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Stage 2 | Nature Corridor Road Treatments	Double Jump Road, Victoria Point	715-0859-00-D001	01	11.11.2020	DG	PM	PM	NTS

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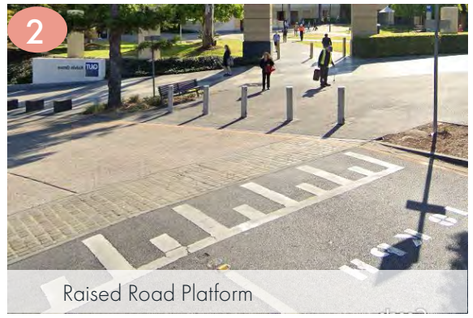
URBAN TREATMENTS TO PROMOTE WILDLIFE AWARENESS

Feature decorative streetprint

Embedded material in road surfacing



Raised Road Platform

Raised Road Platform

Wildlife awareness surface treatment

Wildlife awareness surface treatment

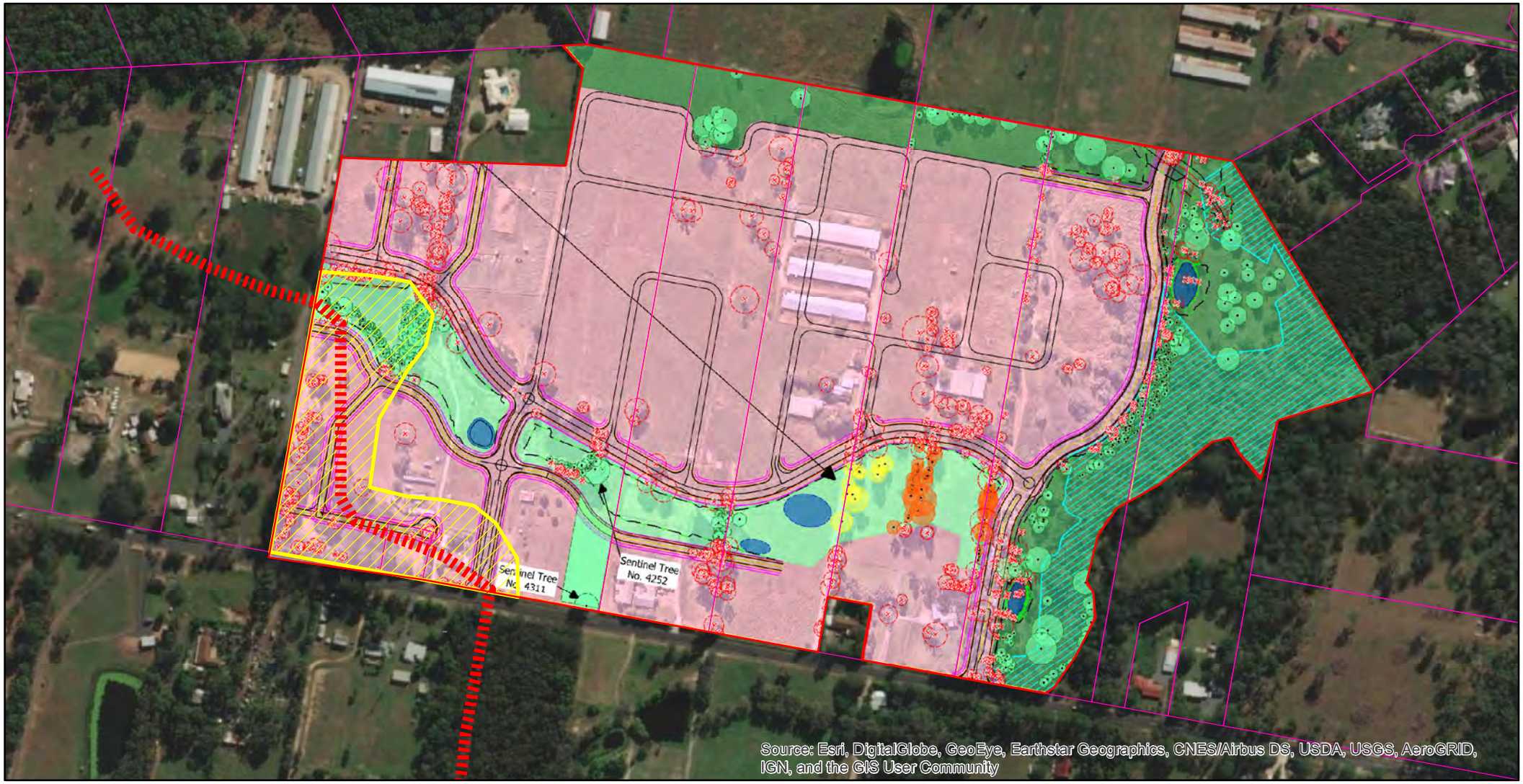
LEGEND

1. Road Treatment
2. Raised Road Platform
3. Wildlife awareness surface treatment
4. Wildlife Signage

Signage to increase community awareness

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
WILDLIFE ROAD CROSSING TREATMENTS	Double Jump Road, Victoria Point	715-0859-00-D001	02	13.11.2020	GH	PM	PM	NTS

Appendix 23 – AD Western Corridor Alignment



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Aerial imagery courtesy of Bing Maps.

LEGEND

Possible western Corrdior

FIGURE 1.1:

Alternative Location of the Western Corridor

Precinct 2 - Sutgold Pty Ltd

Created AD 10/09/21
Job No. 0222

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28ºS
ENVIRONMENTAL

Appendix 6.5: Statement of Evidence

28ºS
ENVIRONMENTAL

Statement of Evidence - Ecology

Planning and Environment Court Appeal No. 1612 of 2020
(Sutgold Pty Ltd v Redland City Council)

Wayne Moffitt (28 South Environmental)

30 September 2021

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1.0 Statement to the Court

In the Planning and Environment Court Appeal No. 1612 of 2020, take notice that:

I, Wayne Moffitt (**WM**) have:

(i) been instructed on behalf of the Appellant to investigate and report on ecology issues that are relevant to the development application that is the subject of this appeal. These matters are within my field of expertise as an ecologist.

(ii) been instructed in accordance with the Planning and Environment Court Rules 2018 and the Uniform Civil Procedures Rule 1999 which I have read and understood. These rules require that an expert has a duty to assist the Court and the duty overrides any obligation the expert may have to the party or any other person who is liable for the expert's fees or expenses.

(iii) not received or accepted any instructions to adopt or reject a particular opinion in relation to an issue in dispute in the proceeding.

I confirm that:

(i) The factual matters stated in this report are, as far as I am aware, true;

(ii) I have made all enquiries considered appropriate;

(iii) The opinions stated in this report are genuinely held;

(iv) My report contains references to all matters that I consider to be significant; and

(v) I understand my duty to the Court and have complied with that duty.

My CV is provided in the Ecology JER.

Wayne Moffitt

30 September 2021

2.0 Background and Purpose of this Report

1. On 18 September 2021, I produced a Joint Experts Report (**JER**) with the Respondent's expert, Dr Andrew Daniel (**AD**) (**JER**). The JER dealt with the Site's environmental planning context, its ecological values, expected impacts of the proposed development, and the issues in dispute in the appeal. We agreed that residential development of the form generally proposed was acceptable,[1] but differed on several matters of detail.

2. We largely steered away from dealing with koala, because koala issues were being dealt with separately by the appointed koala experts, Professor Frank Carrick for the Appellant (**FC**) and Dr William Ellis for the Respondent (**WE**). The **Koala JER** was completed on 1 September 2021.

3. The Site and its ecological values have been adequately described by the JER. I have provided **Figure 1** (Locality) and **Figure 2** (Site) again for reference.

4. The purposes of this individual statement are to:

   (i) clarify or amend matters discussed in the JER;

   (ii) provide my views on the issues that remain in dispute; and

   (iii) as appropriate, comment on matters raised in the Koala JER.

3.0 Clarifications and Amendments

3.1 Amended RaL Plan

5. In Paragraphs 7 and 8 of the JER, I discussed an amendment in relation to the Precinct 1 appeal that was beneficial to Precinct 2. The RaL plan reflecting this change is provided in **Appendix 1**.

[1] Paragraph 153.

3.2 Updated Landscape Design Plans

6. At Appendix 22 (pp. 205-214), the JER included design drawings from the Appellant's urban designer, Tract. These drawings were not the current version relied upon by the Appellant. The correct set of drawings is provided here (as **Appendix 2**) to my individual statement. Two issues arise from this error:

   (i) Design drawing 715-0859-02-DR001 Rev 2 on Page 206 of the JER shows the position of cross-section C through the north-south oriented environmental link. The cross-section plan, drawing 715-0859-02-DR005 REV 2 (Page 208), shows that the environmental link is 30m wide. However, the updated set of drawings (715-0859-02-DR005 REV 6 in **Appendix 2**) show that the environmental link is 35m wide. The increased corridor width improves corridor functionality; and

   (ii) In Paragraph 59(d) of the JER, I discuss my preference for a fauna exclusion fence where the southern end of the enhancement link adjoins Double Jump Road. I did not refer to drawing 715-0859-02-DR01 Rev 2 in Appendix 22 of the JER (p. 206) because it did not show the fence. However, the updated set of drawings (715-0859-02-DR01 REV 6 in **Appendix 2**) shows the position of the fence. The fence will stop road kill of terrestrial species on Double Jump Road.

3.3 Updated Fauna Underpass Plan for the Northern Enhancement Corridor

7. In Paragraph 35 of the JER,[2] I discuss the fauna underpass to be provided on the Northern Enhancement Corridor. The discussion references Appendix 17 (Lambert and Rehbein drawing No. B18480-CSK260 (Rev A). Similar discussion is provided in Paragraph 125.[3] An updated version of the Plan (drawing No. B18480-CSK260 (Rev B)) should have been used. A comparison of the plans is provided here in my individual statement as **Appendix 3**. As shown, the culvert lengths are reduced in the Rev B drawing. This change was made to improve the functionality of the culverts. I note that AD did not take issue with the longer culverts proposed by the Rev A design.

[2] p. 14.
[3] p. 39.

3.4 Engineering Basis of the Impacts Plan

8. Figure 5 of the JER is a plan that I prepared showing non-juvenile koala habitat trees to be removed and retained. The plan was based on an engineering design drawing prepared by Lambert and Rehbein showing areas of cut and fill. The plan (drawing no. B18480-CSK262) is provided in **Appendix 4**.

3.5 Notice of Position of the Respondent

9. The JER attached the incorrect version of the Grounds for Refusal. Despite attaching the incorrect version, we had regard to the correct grounds. Provided as **Appendix 5** are the correct grounds, being the Respondent's Revised Reasons for Refusal dated 19 February 2021.

4.0 Issues that Remain in Dispute

4.1 Width of the Northern Enhancement Corridor

10. At Paragraphs 64-65, **AD** provides his view on the width of the Northern Enhancement Corridor and its capacity to accommodate recreation uses. Further discussion is provided in Paragraphs 148-152. Concern is expressed that "*acceptance of an 80m corridor is already a compromise on Council's stated desire for these corridors to be 100m wide*."[4] In the koala JER, **WE** also expresses concern regarding adequacy of the Northern Enhancement Link.[5]

11. However, it is important to note that the (80m) corridor width was set by the Respondent as part of its dealings to resolve the Urbex appeal to the north.[6] It is also important to note that the Appellant has taken steps to improve the functionality of the Northern Enhancement Corridor, namely by:

    (i) removing the pinch point at far western end of the corridor;[7] and

[4] Paragraph 65.
[5] Paragraph 5.2 (p. 6).
[6] Urbex was required to dedicate a 40m revegetated strip along the southern boundary of its site (50% of the desired corridor), leaving the Appellant to provide the remaining 40m along its northern boundary to complete the corridor.
[7] Refer Paragraphs 7 and 8 of the JER, and the layout plan provided in **Appendix 1** to this individual statement.

(ii) creating a more direct and logical connection between the Eastern Enhancement Corridor and Northern Enhancement Corridor than sought by the Wildlife Connections Plan. This was achieved by shifting development occupying unconstrained land in the Site's northeast to the west, in turn creating consolidated development and conservation (corridor) areas.[8]

12. At Paragraph 34 of the JER,[9] I discuss how one part of the Northern Enhancement Corridor remains unresolved. This area is also described as a pinch or choke point by **WE** [10] and **FC**[11] in the koala JER. At the time of preparing the JER, I saw no easy resolution for this area. It was outside of the Appellant's control, and I questioned whether the Appellant should be compelled to secure the land in circumstances where the Respondent has the opportunity to do so (at no cost) as part of the Urbex appeal. However, I am now instructed that a development application is to be lodged over the land. This would once again seem to provide the Respondent with an opportunity to secure the land and complete the corridor.

4.2 Recreation and Stormwater Infrastructure in Corridors Generally

13. **AD** expresses concern that paths and breakout spaces on the edge of corridors reduces their functionality, [12] and requests that information be provided at the application rather than detailed design (operational works) stage to ensure that impacts are appropriately quantified.[13] **WE** expresses a more general concern in the Koala JER.[14]

14. In an effort to address **AD's** concern about quantifiable impacts, I proposed detailed approval conditions for paths and breakout spaces on the edges of corridors[15]. The conditions were intended to build on the high-level concept plan provided by the Appellant's urban designer, Tract.[16] Ultimately, I believe that **AD** accepts some extent of low-level infrastructure at the edge of corridors if these also provide grazing areas

[8] The improvement can be appreciated by cross referencing the Wildlife Connections Plan on p. 128 of the JER with my Habitat Connectivity Plan on p. 55 of the JER.
[9] p.14.
[10] At p.5; Paragraph 5.2 (p.6); and p.13.
[11] p. 12 and p.20.
[12] Paragraph 148.
[13] Paragraph 65.
[14] p.14; p.18.
[15] Paragraph 132.
[16] Provided as Appendix 18 to the JER (p.194).

for wallabies.[17] If these path and breakout spaces maintained existing koala habitat trees, established new koala habitat trees, and did not hinder koala movement, [18] then it would seem that they could also be acceptable to **WE**.

15. At Paragraph 44 of the JER, I discuss establishment of vegetated stormwater biobasins at the edge of corridors. My proposal is for well-vegetated (bushland style) planting as shown in the identified Water by Design Guidelines.[19] The Appellant's stormwater expert, Dr Trevor Johnson advises that the desired planting outcome is achievable.

16. Based on agreement in the Ecology JER for the Sutgold Stage 1 appeal, [20] I understood that **AD** accepted that such basins could be placed in corridors. However, **AD** expressed concern regarding the size and position of the biobasins, an issue that seems to have arisen from disagreement between the stormwater experts on these matters. **AD** was of the view that the size and location of the basins was not a matter for conditioning.[21] In the Koala JER, **WE** expresses concern regarding the occurrence of biobasins in the Multi-function spine,[22] but not elsewhere. Again though, based on negotiations in the JER for the Sutgold Stage 1 appeal, I understood that **WE** accepted well-vegetated (bushland style) biobasins at the edge of corridors.[23]

17. The engineering design underpinning the vegetation impacts plan (**Appendix 4**) shows the precise location and size of stormwater biobasins along the western edge of the Moogurupum Creek Conservation Area. The size, shape, and position of these basins is well understood, because I worked with Lambert and Rehbein to locate them in a way that minimised tree loss and maintained corridor functionality. I disagree that there is a lack of certainty regarding these basins.

18. The remaining biobasins are located in the Multi-function spine. These basins are shown conceptually, because at the time of preparing the JER, engineering design for this area had not been fully resolved. I recognised **AD's** concern regarding this

[17] Paragraph 152.
[18] Refer discussion at Paragraph 61(b) of the JER, and Plates 13-16.
[19] Refer green highlighted text and photo in Appendix 19 of the JER (p. 198).
[20] Paragraphs 114 and 127 of that particular JER.
[21] Paragraph 65, 87and 150.
[22] p.11
[23] Paragraph 59 of that particular JER.

uncertainty and proposed conditions to guide the more detailed design.[24] I believe that the proposed conditions provide a certain outcome.

19. I discuss provision of fauna underpasses on the connection road crossing the Northern Enhancement Corridor,[25] and at the southern end of the Eastern Enhancement Corridor (at its crossing by Double Jump Road).[26] **AD** agrees that the underpass locations are suitable,[27] and that the design parameters are generally acceptable.[28] I also understand that the koala experts are more or less supportive of the proposed fauna underpasses.[29] I am instructed that the Appellant has entered into a binding agreement with Urbex to deliver the connection road (including the underpass) between the Urbex land and the Site.

4.3 The Western Enhancement Corridor

20. The Wildlife Connections Plan shows an Enhancement Corridor traversing the western edge of the Site.[30] The need for this corridor, the extent to which it is already compromised, and the value of the proposed Multi-function spine as an alternate habitat link to the northwest were matters of debate in the JER, and in the Koala JER.

21. My position in relation to the Western Enhancement Corridor is provided in Section 4.2.1.3 of the JER. I describe how the final leg of the corridor has been severed by a dressage arena sitting squarely within the corridor, and how this requires alternate connections to the north to be found. [31]

22. As noted, the Appellant intends to rely on the Eastern (Moogurupum Creek) and then Northern Corridors to provide the primary alternate north-south habitat connection. The Appellant's commitment to this connection is demonstrated by the design changes made to improve its functionality,[32] and by provision of fauna underpasses at each of roads that it crosses.

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[24] Paragraphs 136 and 137.
[25] Paragraphs 35 and 36.
[26] Paragraphs 47-49.
[27] Paragraphs 67 and 70.
[28] Paragraph 146.
[29] Refer comments by **WE** at pp.16, 22; **FC** at pp. 16, 23, 24; and agreement at p.25.
[30] Refer extract of the Wildlife Connections Plan on p.128 of the JER.
[31] Paragraphs 51-54 (including Inset 3).
[32] Refer Section 4.1 of this individual statement.

23. While less direct than the Western Enhancement Corridor, this is not of concern in circumstances where the goal is to facilitate exchange of genetic material along the corridor through a series of overlapping home ranges. A major advantage of the Appellant's Eastern (Moogurupum Creek) connection is its ability to resolve the barrier / threat to movement created by Double Jump Road. My investigations indicate that this outcome cannot be achieved for the Western Enhancement Corridor.[33] The Moogurupum Creek corridor establishes certainty.

24. **AD** in the general ecology JER, and **WE** in the Koala JER are critical of the Multi-function spine's habitat and corridor functionality. The Multi-function spine will not provide the degree of habitat connectivity that would be provided by a wider, fully vegetated corridor, but it is not intended to do so. It is provided as a secondary connection to the north that is subordinate to the more secure eastern and northern connections, and in circumstances where connectivity to the north is otherwise completely lost due to the dressage arena.

25. In my view, **AD** and **WE** too readily to dismiss the potential values of the Multi-function spine. As noted in the JER,[34] it will (with considered design) provide habitat for more than the most generic of species (possums, magpies, crows, and noisy miners). Conservation significant species such as koala and grey-headed flying fox will use the Multi-function spine, and will not (in my view) be seriously dissuaded from doing so by a well-vegetated park setting with small canopy gaps, paths, and the like. Descriptions of koala occurrence on the Respondent's website suggest this to be the case.[35] Grey-headed flying fox is commonly encountered in well-vegetated park settings, as are other conservation significant species. I see no reason why most other species known from the locality could not also use the Multi-function spine's vegetation as living or stepping stone habitat.

26. During the course of the JER, **AD** identified his preference for an 80m wide corridor through the southwestern corner of the Site. While **AD's** proposal would save some

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[33] Refer Paragraphs 59(c)-(g) of the JER.
[34] Paragraph 56.
[35] "*Redlands Coast is home to a significant koala population, and many of them can be found in our urban areas and even in our Cleveland business district. Residents and visitors can enjoy the sights of koalas in our bushlands, parklands, street trees, schoolyards, urban backyards and in some shopping centre car parks*." Under the heading of where do koalas live….. "*They live all over Redlands, especially in our urban areas*."
https://www.redland.qld.gov.au/info/20254/wildlife_in_redlands_coast/623/koala#koala-live

additional koala habitat trees and provide additional capacity for offsets,[36] I did not consider either outcome to be strong justifications for its adoption. The extent to which **AD's** proposal constrains cleared land that it otherwise suitable for infill development is a matter for others in the appeal.

27. One aspect of **AD's** proposal in which I saw value was its ability to resolve the potential for fauna strike at the entry road's crossing point of the Multi-function spine. This issue had been raised in the JER by AD, [37] and was also raised in the Koala JER by **WE**.[38] Inset 4 of the JER,[39] identifies how the same outcome can be achieved by a simple "flip" of the entry road and revegetated enhancement link. I recommended that this amendment be adopted.[40] Further, I recommend that the amended design should seek to limit road crossings of the re-positioned link, and ensure that the road services the smallest possible number of lots.

28. **AD** identifies that the Western Enhancement Link establishes a reasonably continuous connection south to Bayview Conservation Reserve. That is true, but the eastern connection through the Moogurupum Creek Conservation Area also provides a link south that takes in several large bushland patches on only a slightly more circuitous route to Bayview Reserve.[41] Importantly, this route connects to the *Moogurupum Creek to Kindilan/Days Road Established Corridor*.[42]

29. A concern I hold in regard to the Western Enhancement Corridor is that it will not be a fully functioning corridor. My investigations with the Appellant's engineer found that there are very serious technical difficulties with establishing an underpass from vegetated land south of Double Jump Road into the Site. This appears to be reflected in the Respondent's conceptual design plans for the Double Jump Road upgrade, which show koala exclusion fencing on both sides of the road,[43] and provision for an aerial bridge only (no underpass).[44]

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[36] AD's markup plan in Appendix 23 of the JER shows that some additional koala habitat trees could be saved by his proposal. It also shows that the largely cleared land would have capacity to accommodate offsets, but this capacity is not required because the offset obligation can already be comfortably met in the Northern Corridor and Moogurupum Creek Conservation Area.
[37] Paragraph 84 of the JER.
[38] Paragraph 5.5 (p.6); p.11
[39] p.20.
[40] Paragraph 134 of the JER.
[41] Refer Inset 5 on p. 22.
[42] The thick light green to south east of the Site shown in Appendix 12 (p. 123) of the JER.
[43] A style of fencing that will restrict movement of most terrestrial species across the road.
[44] Refer bottom left-hand corner of the design plan on Page 202 of the JER.

30. **AD** contends that a resolution for the underpass is likely in the future; I'm less optimistic. In my view, if an underpass was considered necessary or achievable, the Respondent's concept design plans would have shown it. It also seems reasonable to assume that the design plans represent the foreseeable future for the road design.

31. The lack of an underpass for Double Jump Road speaks of an intent for the Western Enhancement Corridor to serve only mobile species (birds and bats); species that can glide across the road in a single movement (squirrel glider); and species that will use rope bridges or other gantry structures to cross the road (e.g., possums). In my mind, there is no question that terrestrial fauna should be left to run the gauntlet of Double Jump Road.[45] The Eastern (Moogurupum Creek) connection will still be required to facilitate north-south movement for the broad range of terrestrial species that cannot cross Double Jump Road further west.

32. The 35m wide connection north from Double Jump Road to the gully, and its generally wider continuation then west can provide living or stepping stone habitat for most species already occurring in this landscape. A wider connection could support some additional species, but considered design facilitating a diversity of habitats can also improve species diversity. Further discussion is provided in Section 4.4. A wider corridor would reduce edge effects, but I question how susceptible many species that already use this fragmented landscape are to this impact. For the truly sensitive species, the Eastern (Moogurupum Creek) and Northern corridors provide wide north-south connections

4.4 Necessary Enhancements for the Multi-function spine

33. The concerns of **AD** and **WE** appear to, in part, arise from a lack of detail on tree retention and revegetation proposals for the Multi-function spine. I was able to address this issue with **AD** in the (general ecology) JER,[46] but **WE** had no visibility of my proposals. I provided the following recommendations regarding tree retention:

    (i) Figure 5 of the JER[47] identified trees to be retained and removed. The engineering design available to me at the time of the JER did not provide certainty regarding retention/loss of trees at the eastern end of the Multi-

[45] Refer crossing point shown by Plate 11 of the JER.
[46] Paragraphs 59-63 (pp.19-25) and recommendations at Paragraphs 134-139 (p.42).
[47] Page 56

function spine. I addressed **AD's** concern regarding this uncertainty by proposing that a condition be imposed requiring retention of the Scribbly gums (the yellow-shaded trees).[48] I have assumed that the remaining trees will be removed, and have accounted for their loss in my offset calculations.

(ii) The current engineering design establishes road batters that require removal of koala habitat trees in some areas.[49] In Section 5.3 of my report, I recommend that the engineering design be refined to allow greater tree retention;[50]

(iii) Dams within the multi-function spine are to be filled. **AD** expresses concern that the filling could cause loss of trees surrounding the dam, and identified this as an uncertainty regarding provision of koala habitat tree offsets.[51] I agree that insensitively filling the dams could affect the trees that surround them, but my previous experience is that tree retention can be achieved with careful design. In the JER, I describe how I have engaged an arborist to investigate this issue further,[52] and I make recommendations for approval conditions (which include more detailed investigation).[53] As noted, changes to the engineering design may be required.

(iv) Filling of the dams will occur during the early stages of proposed development. Koala habitat trees that decline over time can be captured as offset trees before completion of the project. There is significant capacity in the offset areas to capture these small additional losses.

(v) Figure 5 of the JER shows that three stormwater biobasins will be located in the Multi-function spine. The basin locations and designs are conceptual, but are shown to illustrate that there is ample capacity to locate them in cleared land. Like elsewhere, my proposal is for well-vegetated (bushland style) planting as shown in the identified Water by Design Guidelines.[54] The Appellant's stormwater expert, Dr Trevor Johnson has advised that the desired planting outcome is achievable.

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[48] Paragraph 138
[49] Refer Figure 5 on p. 56 of the JER.
[50] Paragraph 135.
[51] Paragraph 83
[52] Paragraph 28(b)(ii).
[53] Paragraph 136.
[54] Refer green highlighted text and photo in Appendix 19 of the JER (p. 198).

(vi) Save for road crossings, the enhancement link between Multi-function spine gully and Double Jump Road will be fully revegetated. An amended design could reduce the number of road crossings and increase opportunities for planting.

(vii) Finally, I propose that the overland flow path that is to run the length of the Multi-function spine be constructed and revegetated in accordance with the Natural Channel Design guidelines. Using this method, the Appellant has achieved good revegetation outcomes on a similar scale at nearby Gordon Road, Redland Bay.[55]

4.5 Capacity to deliver a no-net-loss of koala habitat trees outcome

34. The Appellant is required to establish 2,475 koala offset trees.[56]

35. **AD** and I have approached the offset capacity of the Site's offset areas in different ways. **AD** utilises a method that combines the density of koala habitat trees occurring in the emergent, canopy and sub-canopy layers of the pre-clear regional ecosystem for the land on which the offset planting is to occur (RE planting model).[57] This method is commonly used, but at the Site, establishes quite significant differences in the planting density of adjacent offset units. For example, offset areas planted at the RE 12.9-10.4 density of 483 trees/hectare would be established next to areas planted at 1,547 trees/hectare (the RE 12.12.14 density)[58]. The high-density *cheek by jowl* planting of the latter areas would, in my view, lead to loss of a significant number of offset trees as the planting area matures.

36. My preference is to establish offset planting at a consistent 625 trees/hectare (4m spacing model). This density is commonly accepted by Councils in South East Queensland, and has been recently accepted by the Respondent in relation to a nearby offset area.[59] The fairness of my proposal is reflected in the offset capacity calculations for the Moogurupum Creek Conservation Area, which show that 1,213 fewer trees would be established in the available planting areas than under **AD's** preferred RE density model.

---

[55] Refer Plates 18-20 of the JER (pp. 67-68).
[56] Refer discussion in Paragraph 97 of the JER.
[57] WE also proposes use of the RE Planting Model (refer Paragraph 5.1.4 of the Koala JER (p.9).
[58] The latter being more than 3 times the planting density of the former.
[59] Appeal No. 2171 of 2018 (Wigan v Redland City Council) requiring RE 12.9-10.4 offset planting.

37. Figure 6a of the JER[60] illustrates areas with and without offset potential. The offset potential of cleared land (e.g., the Northern Corridor) is self-evident. The offset potential of land supporting native regrowth is more contentious. Figure 6b of the JER[61] illustrates how offset planting can be accomodated in the variably disturbed regrowth of the Moogurupum Creek Conservation Area. **AD** contends that areas mapped as bushland habitat for koala in the Moogurupum Creek Conservation Area should not be used for offsets. The applicable offset policy[62] does not require this, but it is an issue that needs to be approached with common sense.

38. My assessment of the mapped bushland habitat areas found that significant components lacked koala habitat trees, or supported only low densities of such trees and were otherwise degraded.[63] Removing weeds and providing infill planting of koala habitat will clearly provide a very strong uplift in value for koala and other native species. Areas where there is strong regeneration of koala habitat trees, or where only minor work is required to achieve such regeneration, have been deemed unsuitable for offsets. These areas will be managed to facilitate continued regeneration of koala habitat trees.

39. Like **AD**, **WE** questions the suitability of the Moogurupum Creek Conservation Area for offsets. His analysis is provided in Paragraphs 5.6-5.13 [64] of the Koala JER. The crux of the argument at Paragraph 5.12 suggests that offsets should not be placed in the Moogurupum Creek Conservation Area, because there is already an obligation to conserve this area for habitat connectivity. While there may be a requirement to conserve the Moogurupum Creek habitats for koala connectivity purposes, the Appellant has adopted the ordinary approach of using offsets to consolidate otherwise fragmented habitats that are to provide a long-term conservation outcome. The Appellant is not "double-dipping" the Moogurupum Creek Conservation Area to provide conservation obligations that should be provided separately.

40. I have adopted a conservative position regarding the offset capacity of the proposed offset areas, which still demonstrates that a koala habitat tree no-net-loss outcome can

[60] p.57.
[61] p.58.
[62] Version 4.1
[63] Refer detailed analysis in Figure 6b.
[64] pp.7-9.

be achieved for the Site. A no-net-loss outcome was considered important by both koala experts.[65] The benefits of habitat consolidation should also be considered.[66]

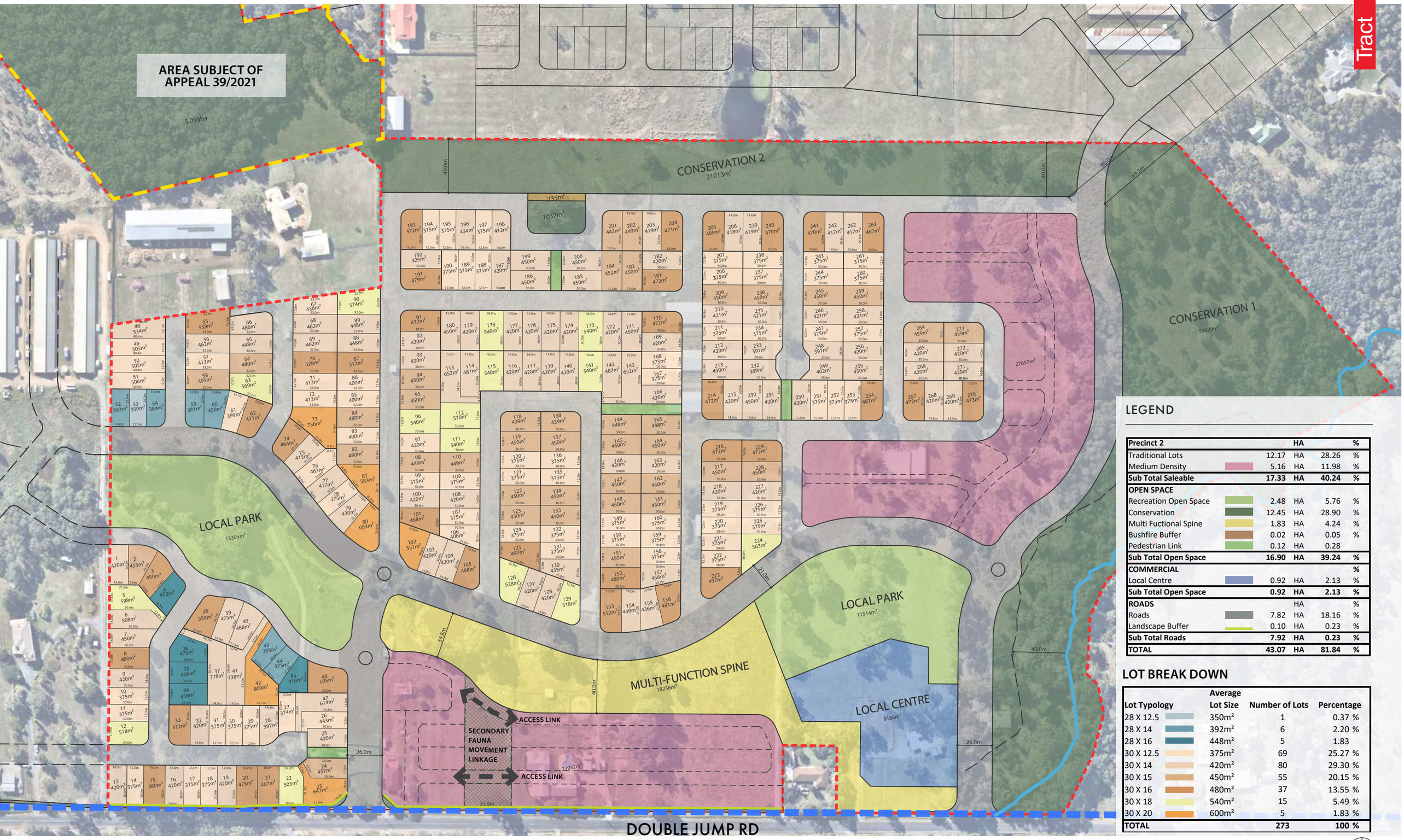
[65] **WE** at pp.14 and 27 of the Koala JER; and **FC** at pp. 5 and 18 of the Koala JER.
[66] Refer Paragraph 109 of the JER.

28ºS
ENVIRONMENTAL

Attachment 1

LEGEND

- SITE BOUNDARY
- AREA SUBJECT OF APPEAL 39/2021



LEGEND

Precinct 2		HA		%
Traditional Lots	12.17	HA	28.26	%
Medium Density	5.16	HA	11.98	%
Sub Total Saleable	**17.33**	**HA**	**40.24**	**%**
OPEN SPACE				
Recreation Open Space	2.48	HA	5.76	%
Conservation	12.45	HA	28.90	%
Multi Fuctional Spine	1.83	HA	4.24	%
Bushfire Buffer	0.02	HA	0.05	%
Pedestrian Link	0.12	HA	0.28	
Sub Total Open Space	**16.90**	**HA**	**39.24**	**%**
COMMERCIAL				%
Local Centre	0.92	HA	2.13	%
Sub Total Open Space	**0.92**	**HA**	**2.13**	**%**
ROADS		HA		%
Roads	7.82	HA	18.16	%
Landscape Buffer	0.10	HA	0.23	%
Sub Total Roads	**7.92**	**HA**	**0.23**	**%**
TOTAL	**43.07**	**HA**	**81.84**	**%**

LOT BREAK DOWN

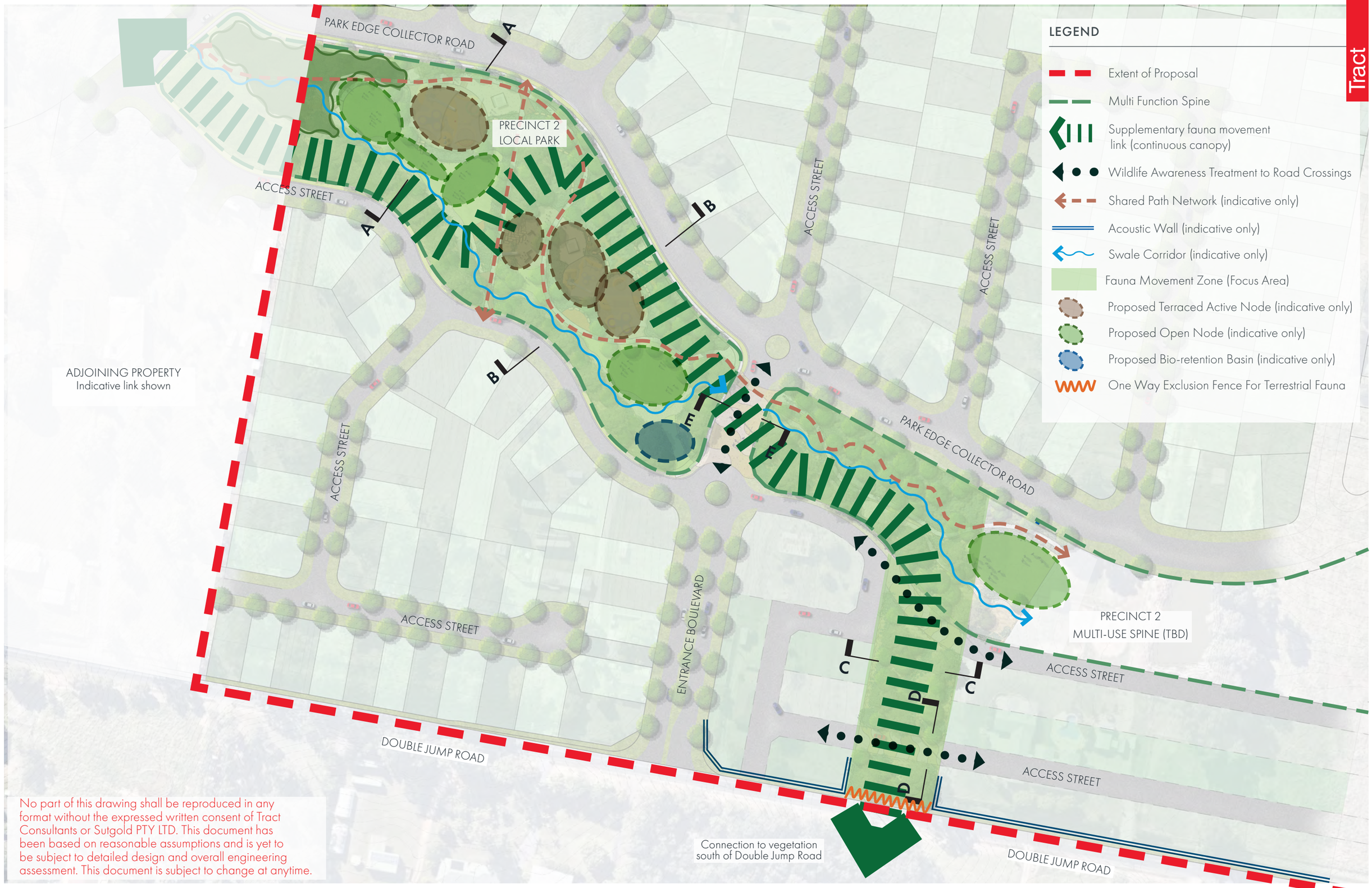
Lot Typology	Average Lot Size	Number of Lots	Percentage
28 X 12.5	350m²	1	0.37 %
28 X 14	392m²	6	2.20 %
28 X 16	448m²	5	1.83
30 X 12.5	375m²	69	25.27 %
30 X 14	420m²	80	29.30 %
30 X 15	450m²	55	20.15 %
30 X 16	480m²	37	13.55 %
30 X 18	540m²	15	5.49 %
30 X 20	600m²	5	1.83 %
TOTAL		273	100 %

Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
PRECINCT 2 - RAL DESIGN	DOUBLE JUMP ROAD, VICTORIA POINT	0715-0859-11 DR02	04	26.08.2021	GH	PM	SP	1:2500 (A3)

0 25 50 100

28ºS
ENVIRONMENTAL

Attachment 2



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Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 2 | Environmental Linkage Option 1	Double Jump Road, Victoria Point	715-0859-02-DR01	06	23.09.2021	SE	PM	PM	NTS

TYPICAL SECONDARY ENVIRONMENTAL LINKAGE TO DOUBLE JUMP ROAD SECTION C-C | 1:200 @ A3

TYPICAL SECONDARY ENVIRONMENTAL LINKAGE THROUGH ACCESS STREET TO DOUBLE JUMP ROAD SECTION D-D | 1:200 @ A3

TYPICAL ENVIRONMENTAL LINKAGE THROUGH BOULEVARD SECTION E-E| 1:200 @ A3

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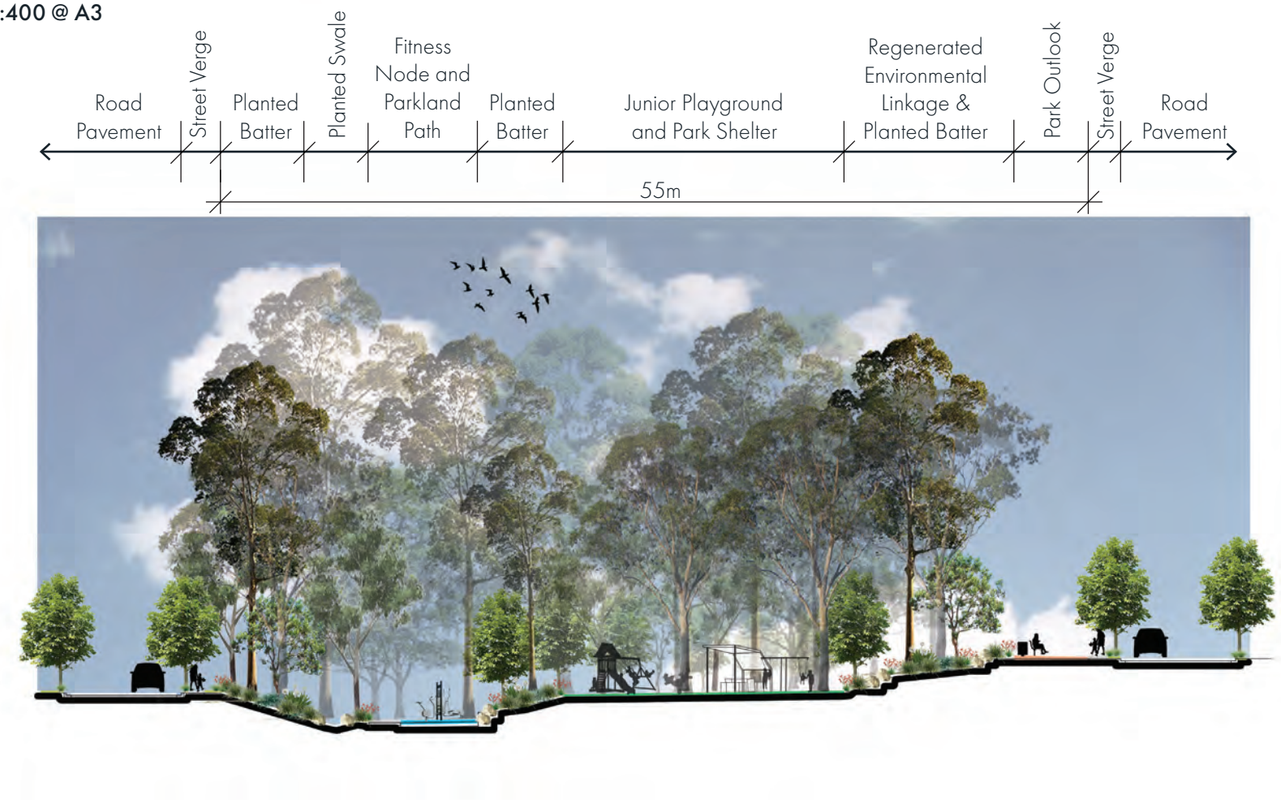
Drawing Title	Project Name	Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 2 | Habitat Linkage Sections	Double Jump Road, Victoria Point	715-0859-02-DR005	06	23.09.2021	SE	PM	PM	As shown

TYPICAL 'UPPER' LOCAL PARK CORRIDOR SECTION A-A | 1:400 @ A3

TYPICAL 'LOWER' LOCAL PARK CORRIDOR SECTION B-B | 1:400 @ A3



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Drawing Title	Project Name		Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 2 | Local Park Landscape Concept Sections	Double Jump Road, Victoria Point	FiteniProperties	715-0859-02-DR004	06	23.09.2021	SE	PM	PM	As shown

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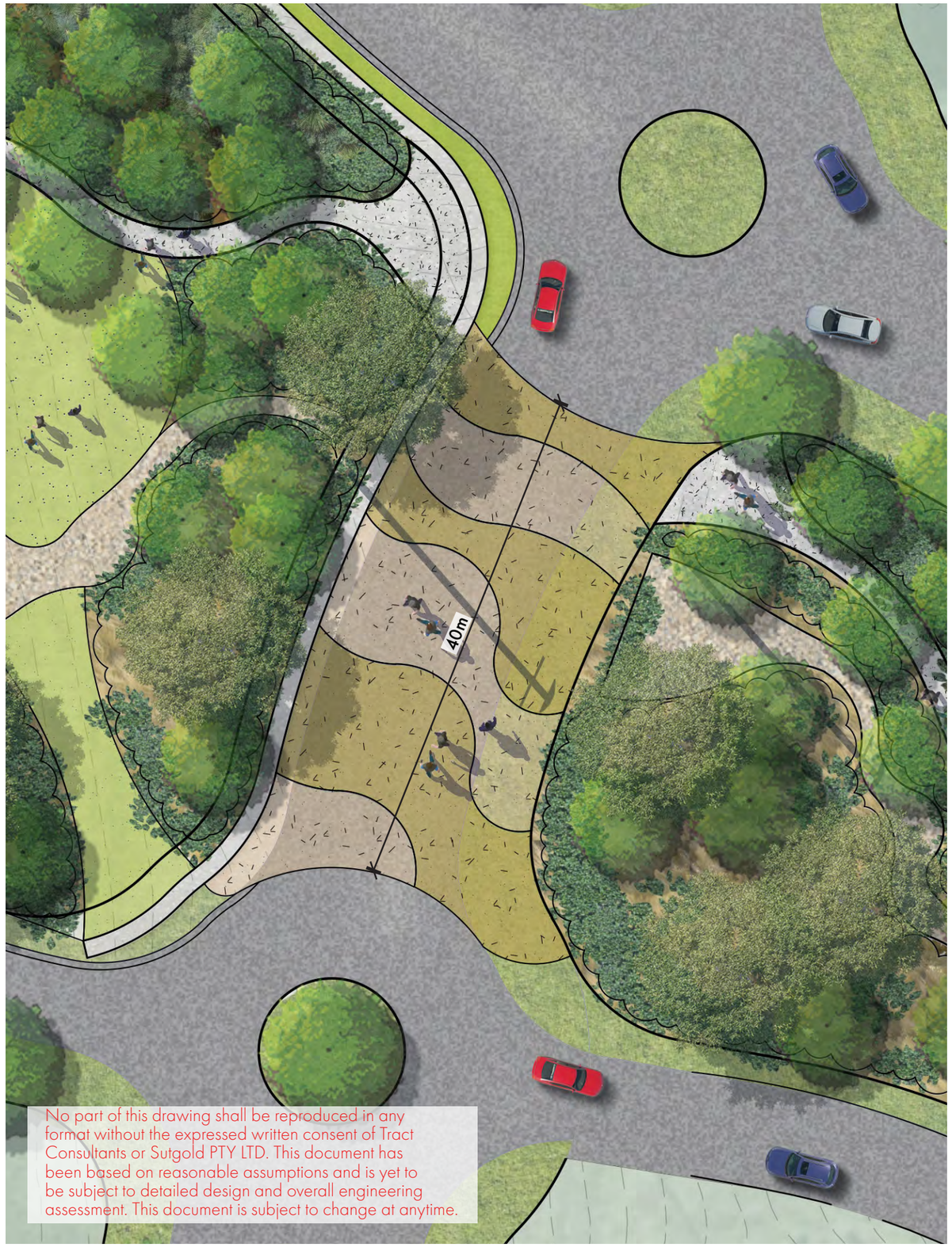
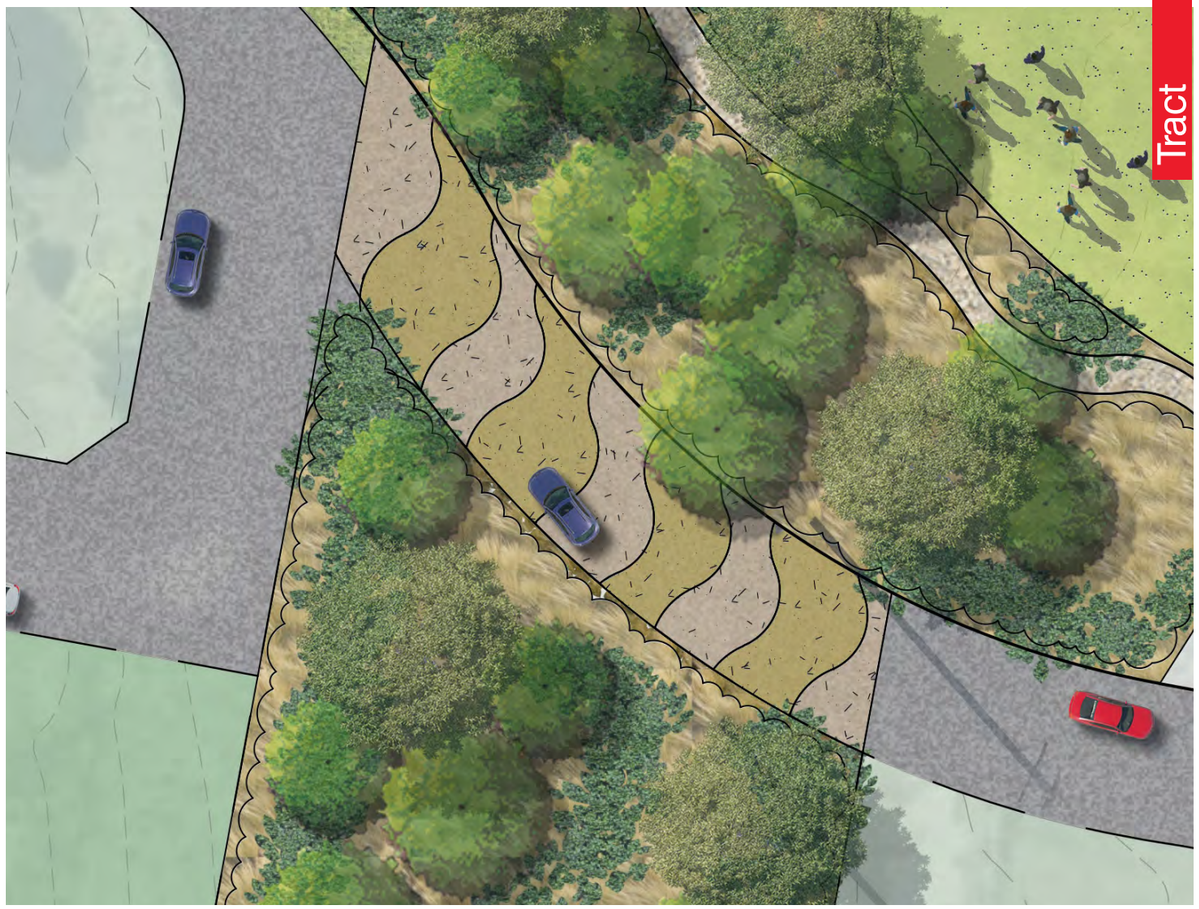
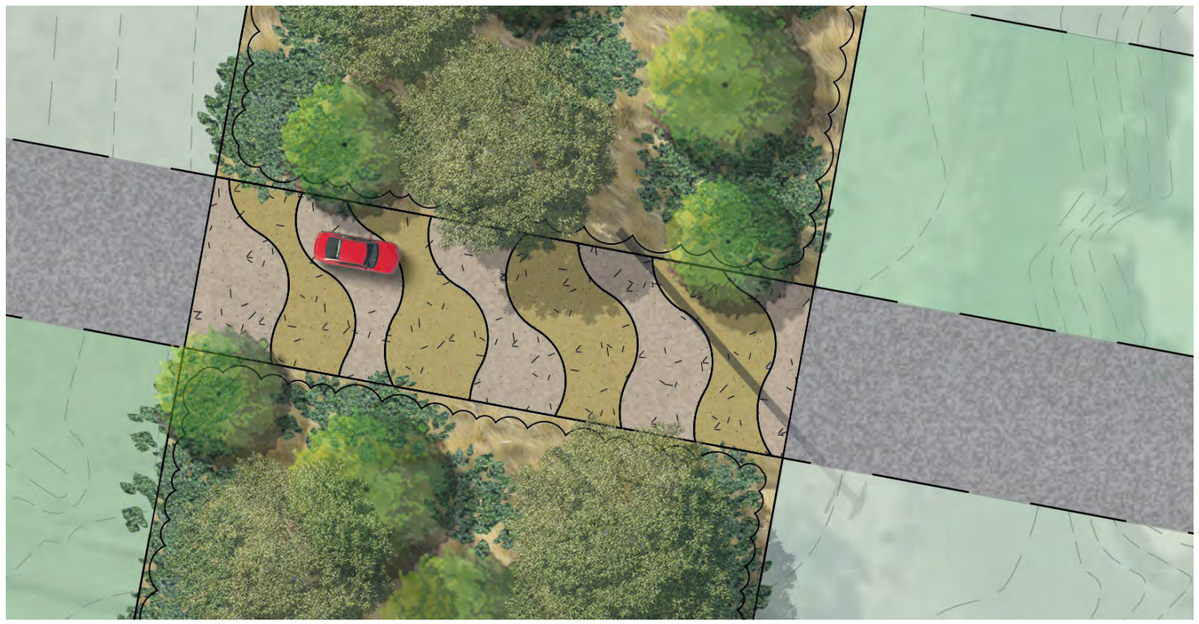
LEGEND

- Park Extent
- 1 Existing Habitat Area to be protected and retained
- 2 Open grass multi-use kick-about space
- 3 Shelter
- 4 Major Path Network
- 5 Rock Lined Drainage Swale
- 6 Shaded Senior Playground
- 7 Nature Play integrated into existing dam wall location to utilise a terraced activity approach amongst naturally shaded environment
- 8 Junior and Toddler Playground
- 9 Fitness Station
- 10 Rest Area with Bench Seating
- 11 Deck Bridge/Lookout
- 12 Informal Nature Trail Pathway

Drawing Title	Project Name		Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 2 | Local Park Landscape Concept	Double Jump Road, Victoria Point	FiteniProperties	715-0859-02-DR004	06	23.09.2021	SE	PM	PM	1:1000 @ A3







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Drawing Title	Project Name		Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Stage 2 | Nature Corridor Road Treatments	Double Jump Road, Victoria Point	FiteniProperties	715-0859-00-D001	06	23.09.2021	SE	PM	PM	NTS

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Drawing Title	Project Name		Drawing No.	Revision	Date	Drawn	Checked	Project Principal	Scale
Precinct 2 | Open Space Masterplan - DRAFT ONLY	Double Jump Road, Victoria Point	FiteniProperties	715-0859-02-DR002	06	23.09.2021	SE	PM	PM	NTS

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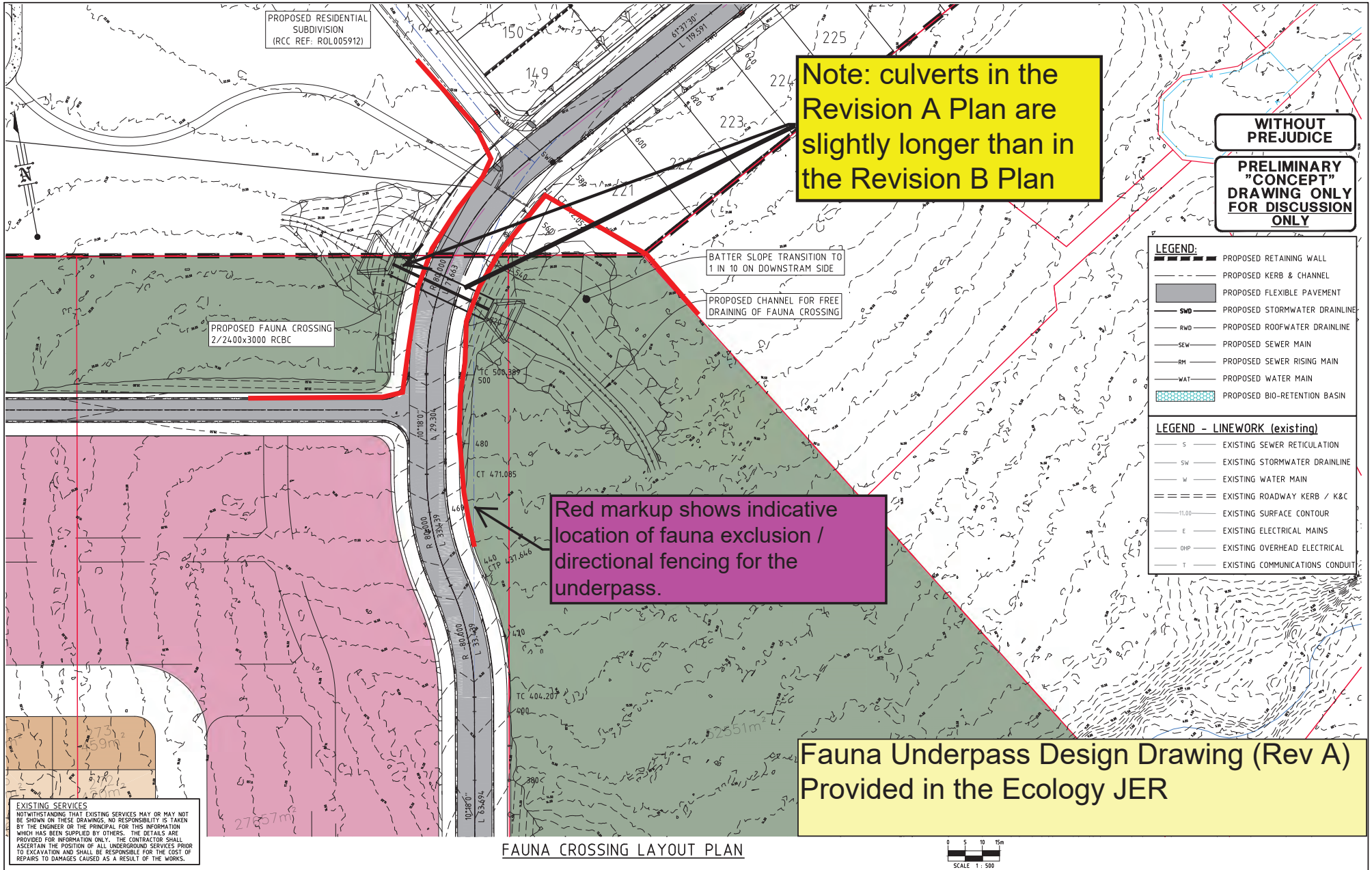
ENVIRONMENTAL

Attachment 3



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R.P.D.
Lot 2 RP169475, Lot 1RP57455, Lot3 RP148004, Lot 1 RP86773, Lot 2 RP86773, Lot 5 SP293881, Lot 2 RP165178, Lot 801 SP261302
LEVEL DATUM
PM 135915
RL 15.258 AHD

No.	Date	By	Amendment	Checked
A	16.02.21	S.G.	ORIGINAL ISSUE	

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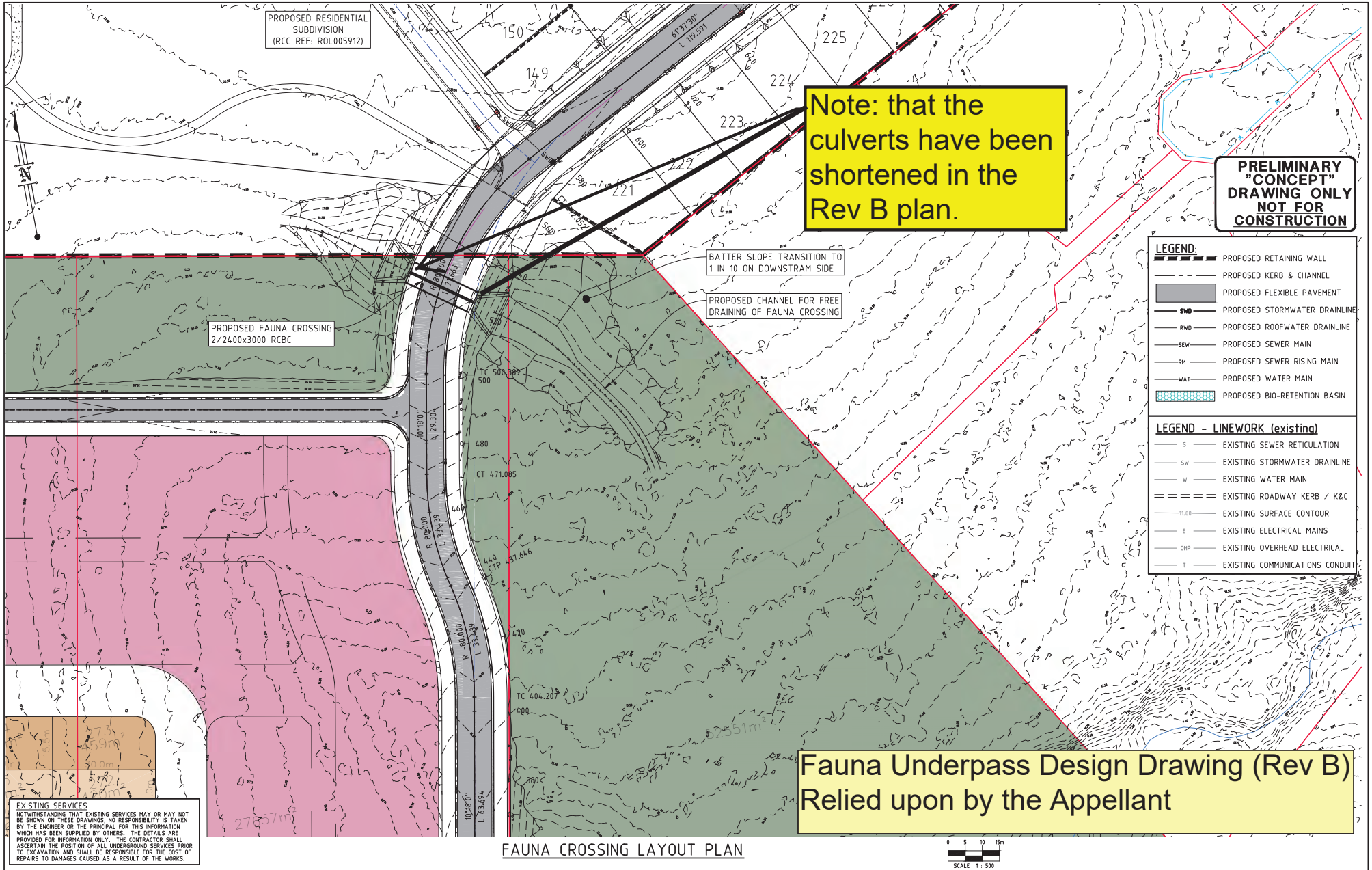
Project: PROPOSED RESIDENTIAL SUBDIVISION
36-40,42,44,48,50,52 & 56 DOUBLE JUMP ROAD, VICTORIA POINT

Title: FAUNA CROSSING LAYOUT PLAN

Client: SUTGOLD PTY LTD

Draftsperson: S.G.	Checked: D.L.	Sheet Size: A1	Drawing No. B18480-CSK260
Designer: S.G.	Approved: CJHURLEY RPEQ No: 15957		
Scale: AS SHOWN	Date: FEB 2021	A	



FAUNA CROSSING LAYOUT PLAN

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Title: FAUNA CROSSING LAYOUT PLAN

Client: SUTGOLD PTY LTD

Draftsperson: S.G.	Checked: D.L.	Sheet Size: A1	Drawing No. B18480-CSK260
Designer: S.G.	Approved: CJHURLEY RPEQ No: 15957		
Scale: AS SHOWN	Date: FEB 2021	A	B

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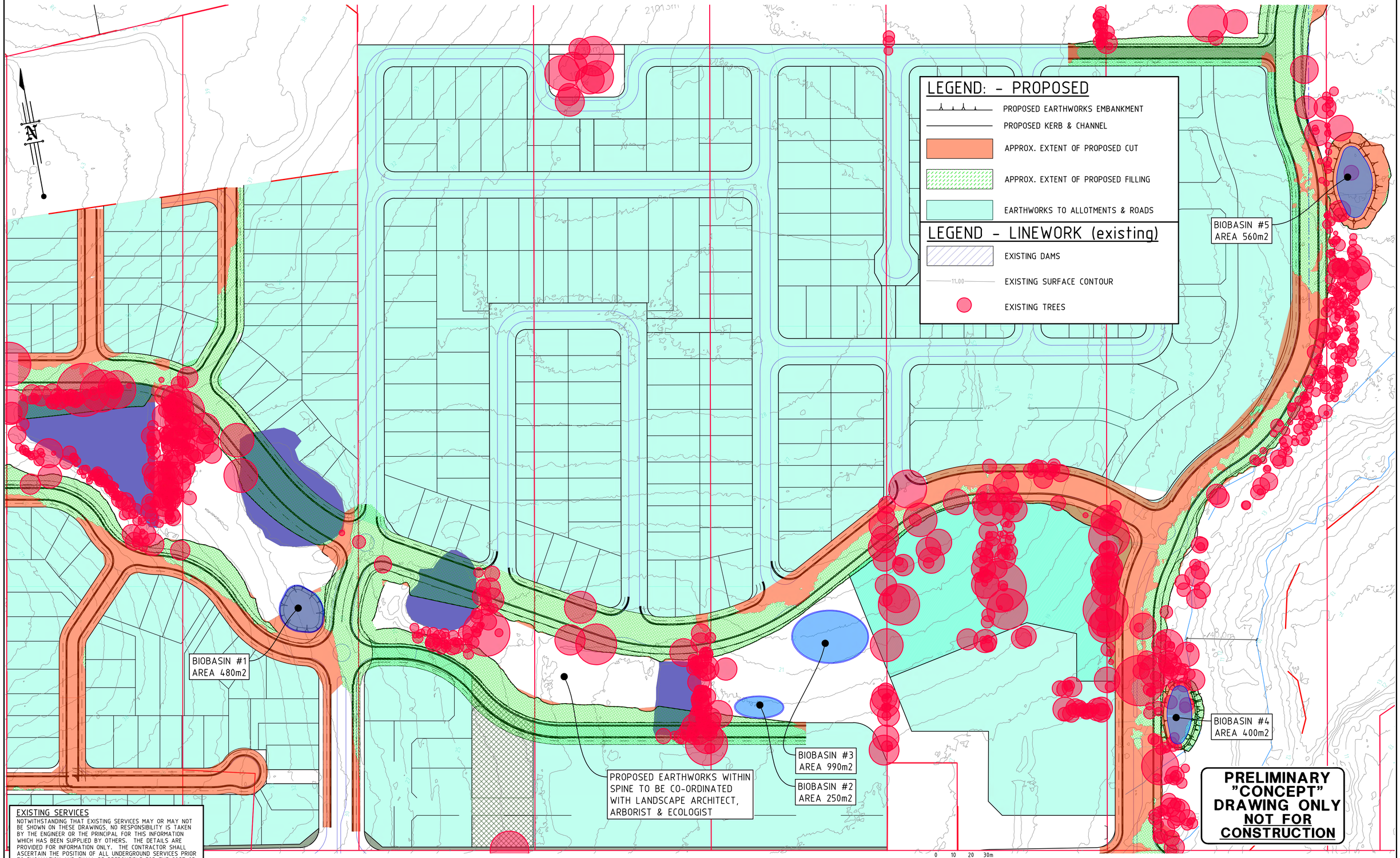
Attachment 4



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APPROXIMATE EARTHWORKS DISTURBANCE AREA

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LEVEL DATUM
PM 135915
RL 15.258 AHD

No.	Date	By	Amendment	Checked
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A	16.02.21	S.G.	ORIGINAL ISSUE	

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Project: PROPOSED RESIDENTIAL SUBDIVISION 36-40,42,44,48,50,52 & 56 DOUBLE JUMP ROAD, VICTORIA POINT

Title: APPROXIMATE EARTHWORKS DISTURBANCE AREA

Client: *SUTGOLD PTY LTD*

Draftsperson: S.G.	Checked: D.L.	Sheet Size: A1	Drawing No.: B18480-CSK262
Designer: S.G.	Approved: C.HURLEY RPEQ No: 15957		
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Attachment 5

In the Planning and Environment Court No. 1612/20
Held at: Brisbane

Between:	**SUTGOLD PTY LTD**	Appellant
And:	**REDLAND CITY COUNCIL**	Respondent
And:	**CLAY GULLY PTY LTD**	Co-Respondent by Election

NOTICE OF POSITION OF RESPONDENT

Pursuant to paragraph 2 of the Order of His Honour Judge Williamson QC dated 2 February 2021 the Respondent provides its response to the development application the subject of the appeal as amended by the Appellant's minor change application declared by the Court to be minor. The Respondent continues to contend that the application ought be refused.

The Respondent provides its Revised Reasons for Refusal as "Annexure A" and addresses each of the reasons identified in the Respondent's Reasons for Refusal filed 7 August 2020 ("**Reasons for Refusal**") as follows:

1. As to reason 1(a), the Respondent states this reason is still applicable so far as it relates to the protection and enhancement of environmental values and not promoting climatically response sites or building design.
2. As to reason 1(b), the Respondent states this reason is still applicable.
3. As to reason 1(c), the Respondent states this reason is still applicable.
4. As to reason 1(d), the Respondent states this no longer applies as a reason to refuse the proposed development application.
5. As to reason 1(e), the Respondent states this reason is still applicable.

Redland City Council

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A: Form of the Development

Environmental Values

6. As to paragraph 2, the Respondent states this no longer applies as a reason to refuse the proposed development application.
7. As to paragraph 3, the respondent states this reason is only applicable in respect of adequate provision of natural corridors to the west of the subject site.
8. As to paragraphs 4 to 5, the Respondent states the reasons are still applicable.

Walkable Neighbourhoods

9. As to paragraph 6, the Respondent states this no longer applies as a reason to refuse the proposed development application.
10. As to paragraph 7, the Respondent states the reason is still applicable and in so far as it fails to demonstrate that impacts upon retained ecological corridors are minimised.

Lot Orientation and Climatically Responsive Site and Building Design

11. As to paragraph 8, the Respondent states this reason is still applicable.

B: Infrastructure Delivery

Waste Water

12. As to paragraphs 9 and 10, the Respondent states the reasons are still applicable.

Traffic

13. As to paragraph 11, the Respondent states the reasons are still applicable particularly in respect of Double Jump Road.
14. As to paragraph 12, the Respondent states this no longer applies as a reason to refuse the proposed development application.

Stormwater

15. As to paragraph 13, the Respondent states the reasons are still applicable.

C: Structure Planning

16. As to paragraph 14, the Respondent states the reasons are still applicable, however, the issue of the delineation of environmental corridors is limited to the west of the subject site.

D: Bushfire

17. As to paragraph 15, the Respondent states this no longer applies as a reason to refuse the proposed development application.

E. Other Relevant Matters

18. As to paragraphs 16 to 19, the Respondent states these reasons are still applicable.

F. Advancing the purpose of the Act

19. As to paragraph 20, the Respondent states these reasons are still applicable.

.....

Redland City Council
Solicitor for the Respondent

Dated: 19 February 2021

"ANNEXURE A"

In the Planning and Environment Court No. 1612/20
Held at: Brisbane

Between:	**SUTGOLD PTY LTD**	Appellant
And:	**REDLAND CITY COUNCIL**	Respondent
And:	**CLAY GULLY PTY LTD**	Co-Respondent by Election

RESPONDENT'S REVISED REASONS FOR REFUSAL

Pursuant to paragraph 2 of the Order of His Honour Judge Williamson QC made 2 February 2021 the Respondent notifies the following matters to be relied upon to support refusal of the Appellant's proposed development:

1. The proposed reconfiguration of a lot is not supported as it:
   (a) Does not protect and enhance environmental values and does not promote climatically responsive sites or building design;
   (b) Inadequately considers infrastructure delivery, being neither integrated nor sequenced to deliver a complete community in a timely and enduring manner;
   (c) Ad hoc development which would compromise the coordinated and efficient development of the wider area as a well-designed future urban community; and
   (d) Approval of the proposed reconfiguration would not advance the purposes of the *Planning Act 2016*.

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A: Form of the Development

Environmental Values

2. The development does not adequately make provision for natural corridors in the western part of the subject site where there are opportunities for environmental enhancement activities to support significant ecosystems, protect koala habitat and improve natural corridor linkages.

3. The proposed multi-function link is not adequate for the safe movement of Koalas and other fauna as its multi-function nature includes storm water, a neighbourhood park and active transport outcomes in the form of pathways and cycle ways which is detrimental to achieving this outcome. The proposed neighbourhood recreation park and residential lots would sever the ability to create safe corridors.

4. The development has not adequately demonstrated that stormwater detention and infrastructure and other future development lots protect, enhance, manage and minimize impacts on the environmental values of the site.

Walkable Neighbourhoods

5. The proposed development provides inadequate linear open space and connectivity between the parks and open space network, whilst demonstrating that impacts upon retained ecological corridors are minimised as part of the wider structure plan area, particularly its connectivity through to the north, forming part of a planned network of linear open space.

Lot Orientation and Climatically Responsive Site and Building Design

6. The proposed pattern of development promotes the majority of lots with an east-west facing orientation which is not considered to be a climatically responsive site design, which maximises solar access to the north in winter and minimising solar access to the west in summer.

B: Infrastructure Delivery

Waste Water

7. The proposed reconfiguration relies upon the mechanical pumping of wastewater which is unacceptable having regard to the whole-of-lifecycle cost of pumping infrastructure.

8. The development does not provide for the necessary upgrades to the sewerage treatment network and would result in a higher capacity than planned for in the Local Government Infrastructure Plan.

Traffic

9. It has not been demonstrated how the impacts from the proposed reconfiguration may have upon the local road network, more specifically Double Jump Road, can be managed.

Stormwater

10. It has not been demonstrated that the resultant stormwater drainage impacts will not trigger downstream flooding impacts.

C: Structure Planning

11. The development would compromise the coordinated and efficient growth of the area as a well-designed future urban community. Specifically, the delineation of environmental corridors to the west of the subject site, infrastructure provision and sequencing across all of the landholdings in the emerging community area require an informed, coordinated planning approach across the wider structure plan area.

E. Other Relevant Matters

12. The subject land is located outside the Priority Infrastructure Area of the Respondent's Local Government Infrastructure Plan.

13. The proposed reconfiguration does not adequately facilitate the regeneration of desired environmental corridors.

14. The proposed reconfiguration does not adequately address the provision and sequencing of infrastructure.

15. The proposed reconfiguration does not accord with the Council's coordinated structure planning approach to plan making and the growth of new urban areas within Redland City.

F. Advancing the purpose of the Act

16. Approving the proposed reconfiguration does not advance the purpose of the Planning Act as:

    (a) It does not take into account the short and long-term environmental effects of the proposed reconfiguration;

    (b) It does not avoid or otherwise minimise the adverse environmental effects of the proposed reconfiguration; and

    (c) It does not supply infrastructure in a coordinated, efficient and orderly way.

.....

Redland City Council
Solicitor for the Respondent

Dated: 19 February 2021