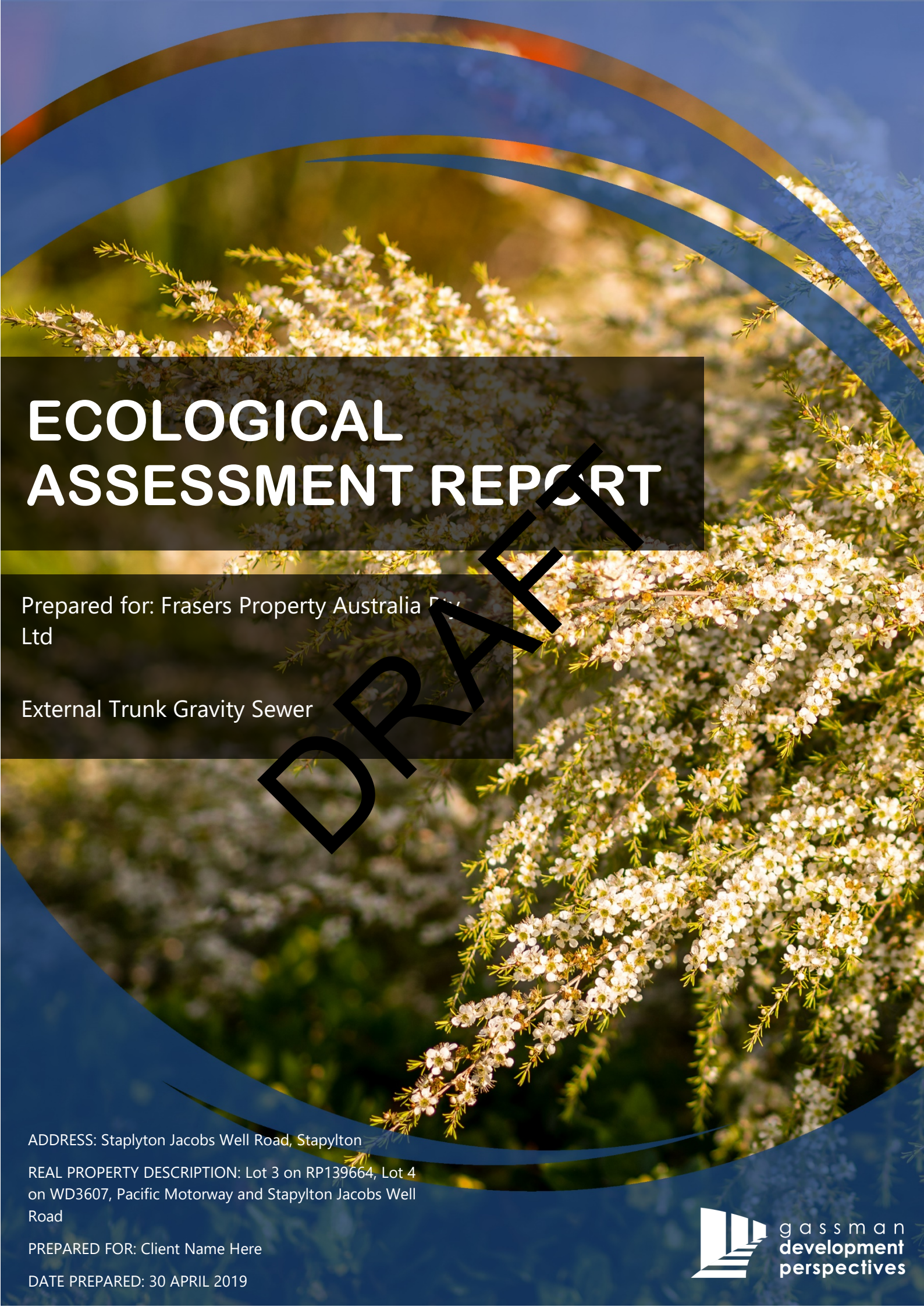




ECOLOGICAL ASSESSMENT REPORT

Prepared for: Frasers Property Australia Pty
Ltd

External Trunk Gravity Sewer

ADDRESS: Staplyton Jacobs Well Road, Staplyton

REAL PROPERTY DESCRIPTION: Lot 3 on RP139664, Lot 4
on WD3607, Pacific Motorway and Staplyton Jacobs Well
Road

PREPARED FOR: Client Name Here

DATE PREPARED: 30 APRIL 2019



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GDP Document Control

Originating Office: Yatala	Job Number: 5941
Physical Address: 76 Business Street	Job Name: External Sewer
Yatala	Project Manager: Mitchell Gassman
QLD 4207	Document Title: Ecological Assessment
Postal Address: PO Box 392	Author: Kathryn Tibbles
BEENLEIGH.Q. 4207	Client: Frasers Property Australia
Phone: +61 7 3807 3333	Pty Ltd
Fax: +61 7 3287 5461	Client Contact: Paul Solomon
Email: mail@gassman.com.au	Client Reference:
Web: www.gassman.com.au	

Revision / Checking History

No.	Author	Reviewer
V1.0	Kathryn Tibbles	Mitchell Gassman

Approval for Issue

Version	Name	Position	Signature	Date
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Gold Coast City Council	1 electronic copy
State Assessment Referral Agency	1 electronic copy

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DRAFT

1 Introduction

1.1 Purpose

Gassman Development Perspectives Pty Ltd (GDP) has been engaged by Fraser Property Pty Ltd to prepare an Ecological Assessment Report facilitate the installation of a proposed external trunk sewer pipeline conditioned by the Stage 1 Reconfiguration of Lot approval for an industrial estate development on Lot 501 SP295994 (previously described as Lots 1 on RP6882 and 240 on W31320) with the council reference ROL201800079.

The proposed trunk gravity external sewer line is located adjacent to Staplyton Jacobs Well Road, the Pacific Motorway, and through the front portion of freehold Lot 4 on WD3607 and Lot 3 on RP139664. The proposed development will be seeking approvals for Operational Works - Vegetation Clearing, Operational Works – Civil Works, and any permits required for works occurring within a state-controlled road.

This report has been provided to guide the client in development planning and to assist regulatory authorities in the assessment of the ecological values within the proposed sewer impact corridor and the potential impacts of the proposal on these values.

The report will provide the results of ecological surveys conducted on the subject site, in addition to considering mapped ecological values identified by relevant Local Government, State Government and Federal Government mapping and resources.

The objectives of the report are:

- Undertake desktop searches of local, state and federal fauna and flora databases.
- Review database records of listed flora and fauna known to occur or potentially occurring within the vicinity of the subject site.
- Report results of ecological site surveys to acknowledge fauna and flora species identified at the site.
- Assess the ecological impacts of the proposed development on any local matters of environmental significance identified by the relevant local government planning scheme provisions.
- Assess the ecological impacts of the proposed development on the flora and fauna listed under the *Nature Conservation Act 1992* (NCA).
- Assess the ecological impacts of the proposed development on any environmental matters requiring referral to the State Assessment Referral Agency.
- Assess the ecological impacts of the proposed development on any Threatened Ecological

Communities (TECs) present on site and species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA); and

- Propose offset strategies to adequately mitigate any environmental losses resulting from the proposed development.

1.2 Structure of Report

The report is structured as follows:

- Introduce the site and proposed development.
- Provide a desktop review of relevant ecological components of the site.
- Provide details of the methods implemented to gather on site ecological data.
- Summarise ecological assessment.
- Provide an ecological impact analysis; and
- Provide mitigation strategies.

DRAFT

2 Site Details

2.1 Location

The proposed sewer corridor (also referred to as 'the impact corridor') is located adjacent to parts of the Pacific Motorway and Stapylton Jacobs Well Road, within the locality of Stapylton in the City of Gold Coast Council local government area. The impact corridor crosses various parcels of road reserve land, and two freehold lots as outlined below.

Road Reserve Parcels

- Segment 35068, parcel 25 (state-controlled road)
- Segment 35069, parcel 18 (state-controlled road)
- Segment 35069, parcel 74 (state-controlled road)
- Segment 35069, parcel 20 (state-controlled road)
- Segment 35131, parcel 3 (state-controlled road)

Freehold Lots

- Lot 4 on WD3607
- Lot 3 on SP139664

Lot 4 on WD3607 and Lot 3 on SP139664 are mapped within the Open Space Zone of the City of Gold Coast City Plan. The proposed impact corridor runs directly under the Pacific Motorway, and down Stapylton Jacobs Well Road, before crossing Stapylton Jacobs Well Road and terminating in the road reserve adjacent to Lot 31 on SP2995994. The general location of the proposed sewer corridor is shown in Figure 1. The proposed sewer corridor runs for approximately 850m in length and will have an impact corridor 10m wide.

The proposed sewer corridor will traverse road reserve parcels with predominantly planted vegetation, exotic weeds or exotic grasses, as can be seen in Figure 2. The front portion of Lot 4 on WD3607 contains mature native vegetation. Surrounding land uses to the north of the impact corridor largely consist of existing rural uses, with some industrial and residential uses to the south.



Client:

FRASERS PROPERTY
(Australia) PTY. LTD.

Site Address:

Stapylton-Jacobs Well
Road, Yatala

RPD:

Lot: .

Plan: .

Local Authority: City of Gold Coast

Level Datum: .

Meridian: .

Contour Interval: .

PSM: .

RL: .

Associated Consultants:

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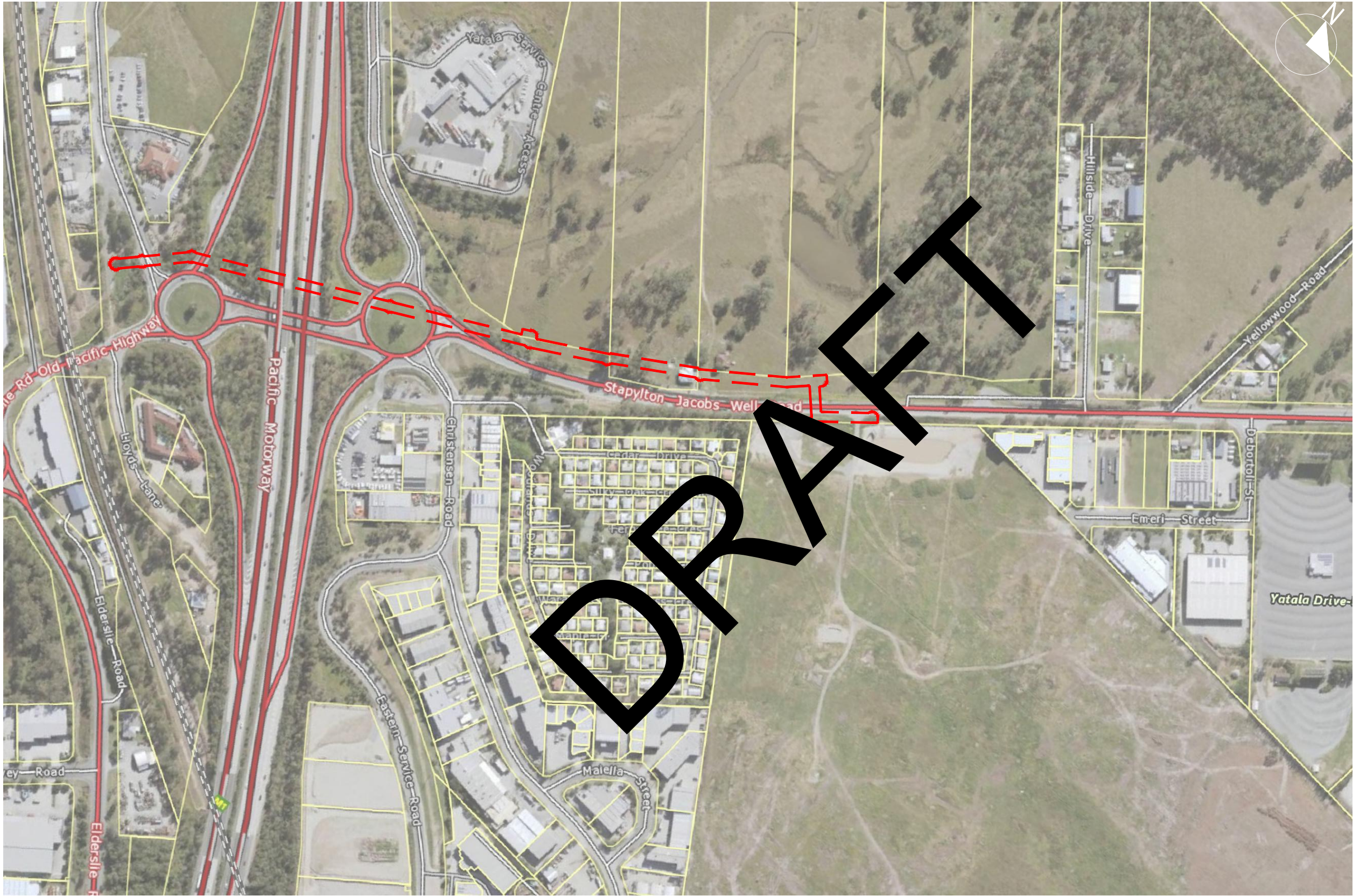
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LOCALITY
PLAN

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Client:
FRASERS PROPERTY
(Australia) PTY. LTD.

Site Address:
Stapylton-Jacobs Well
Road, Yatala

RPD:
Lot: .
Plan: .
Local Authority: City of Gold Coast

Level Datum: .
Meridian: .
Contour Interval: .
PSM: .
RL: .

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SITE PLAN

3 Proposed Development

The proposed involves the installation of a trunk sewer pipeline that will traverse multiple parcels of road reserve, and two freehold lots. In order to install the trunk sewer pipeline, areas within the impact corridor will require vegetation clearing.

This vegetation clearing will development approval for the following development aspects:

- Development Permit for Operational Works for Vegetation Clearing.

The proposed sewer impact corridor is approximately 10m wide, and 850m in length. The proposed sewer line will be installed through the following combination of techniques:

- micro tunnelling.
- tunnel boring; and
- open trenching.

The proposed sewer alignment and respective installation techniques are shown in the Gravity Sewer Installation Plan shown in Appendix 1.

DRAFT

4 Flora assessment

4.1 Introduction

This section outlines the methods used in flora surveys of the subject site and presents the results of the findings. A full list of flora species recorded on site is provided in Appendix 2.

4.2 Methods

4.2.1 Database searches

A database search was conducted using the Federal Protected Matters Search feature which lists all potential occurrences of EPBCA-listed threatened species and EECs. The search was conducted of an area within a 5km radius of the subject site.

The Department of Environment and Heritage Protection (EHP) Wildlife Online Database was also searched for NCA-listed species known to occur within a 5km radius of the subject site. The results of these searches are included in Appendix 4 to this report.

4.2.2 Regional ecosystem

The Department of Natural Resources and Mines (DNRM) RE mapping was obtained from the Queensland Government website using the lot and plan number of the free hold lot, and the use of a central coordinate to capture the impact corridor. This was used to identify regulated and remnant vegetation areas of state significance on site.

4.2.3 Site surveys

Field surveys were undertaken to identify vegetation species and communities present on site. Site flora values were investigated on 16th, 17th and the 23rd April 2020, for approximately 10 hours in total. Vegetation present in an adjacent to the impact corridor is discussed in the context of the RE Description Database (REDD) provided by DNRM. The aim of the vegetation survey was to identify the species of vegetation that may require removal and confirm, or otherwise, the accuracy of DNRM's mapped vegetation communities and if any protected plant species were present. Random meander flora transects were undertaken across the entire site to identify all flora species incidentally observed until no new species were recorded. All recorded flora species are included in Appendix 2.

The flora sampling regime described above was designed to best describe all species and communities present on the subject site. Methods used were in accordance with those recommended in the New South Wales Threatened Species Survey and Assessment Guidelines (NSW NPWS 2001) and the Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland Version 3.2 (Neldner et. Al., 2012).

When a habitat suitable for a species of conservation significance was located, a specific survey for that species was undertaken. This specific search involved the use of methods discussed in Section 3.0, Step 4 of the New South Wales Threatened Species Survey and Assessment Guidelines (NSW NPWS 2001). The method that was used in this survey was the random meander technique. As the name suggests, this technique involves traversing areas of suitable/target habitat in no set pattern whilst searching for the particular species.

All encountered plants were identified using several taxonomic keys and other reference material for plants in south-east Queensland. For any plant species that could not be identified in the field, a voucher specimen was collected and sent to the Queensland Herbarium for identification.

4.3 Results

4.3.1 Database searches

The EPBCA Protected Matters Search indicated that 21 threatened flora species (considered “*Matters of National Environmental Significance*”), may potentially occur within a 5km radius of the impact corridor. The DES Wildlife Online Search (also within a 5km radius) indicated that 6 state-listed threatened flora species may occur in the proximity of the subject site. A summary of these species is shown in Table 1.

Table 1 – Combined database records (EPBCA and NCA) of threatened species within 5km of the subject site

Scientific Name	Common Name	Status*	
		EPBCA	NCA
<i>Acronychia littoralis</i>	Scented Acronychia	E	E
<i>Arthraxon hispidus</i>	Hairy-joint Grass	V	V
<i>Baloghia marmorata</i>	Marbled Baloghia, Jointed Baloghia	V	V
<i>Bosistoa transversa</i>	Three-leaved Bosistoa	V	LC

<i>Corchorus cunninghamii</i>	Native Jute	E	E
<i>Cryptocarya foetida</i>	Stinking Cryptocarya	V	V
<i>Cupaniopsis newmanii</i>	Longleaved Tuckerroo		NT
<i>Cupaniopsis shirleyana</i>	Wedge-leaved Tuckerroo	V	V
<i>Diploglottis campbellii</i>	Small-leaved Tamarind	E	E
<i>Endiandra floydii</i>	Floyd's Walnut	E	E
<i>Fontainea venosa</i>		V	V
<i>Gossia gonoclada</i>	Angle-stemmed Myrtle	E	E
<i>Lepidium peregrinum</i>	Wandering Pepperbloss	E	LC
<i>Macadamia integrifolia</i>	Macadamia Nut, Smooth-shelled Macadamia	V	V
<i>Macadamia tetraphylla</i>	Rough-shelled Bush Nut, Macadamia Nut	V	V
<i>Mallotus megadontus</i>	Toothed Kanna		V
<i>Marsdenia coronata</i>	Slimmer Milkvine		V
<i>Melaleuca irbyana</i>	Swamp Tea-tree		E
<i>Persicaria elatior</i>	Tall Knotweed	V	V
<i>Phaius australis</i>	Lesser Swamp Orchid	E	E
<i>Planchonella eerwah</i>	Shiny-leaved Condoo	E	E
<i>Randia moorei</i>	Spiny Gardenia	E	E
<i>Samadera bidwillii</i>	Quassia	V	V
<i>Sophora fraseri</i>	Brush Sophora	V	V
<i>Thesium australe</i>	Toadflax	V	V

*EPBCA/NCA Status: - E = Endangered, V = Vulnerable, NT = Near Threatened, LC = Least Concern

No listed flora species were observed to occur on the subject site during ecological surveys.

4.3.2 Threatened ecological communities

The EPBCA Protected Matters search indicated that three (3) TECs, (considered “*Matters of National Environmental Significance*”) may occur within a 5km radius of the subject site. These TECs are:

- Lowland Rainforest of Subtropical Australia (Critically Endangered)
- Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland (Endangered)
- White Box-Yellow Box – Blakely’s Red Gum Grassy Woodland and derived Native Grassland (Critically Endangered)

None of these TECs were observed to occur on the subject site.

4.3.3 Regional ecosystems (Vegetation Management Act 1999)

At the time of application lodgement, the impact corridor is mapped as containing predominantly Category X vegetation (non-remnant vegetation) and a small area of Category B (regulated vegetation) containing Least Concern RE 12.11.5/12.11.24 for the purposes of the Vegetation Management Act 1999.

Least Concern RE 12.11.5/12.11.24

RE 12.11.5

Corymbia citriodora subsp. *variegata* open forest to woodland, usually including *Eucalyptus siderophloia*/*E. crebra* (sub coastal ranges), *E. propinqua* and *E. acmenoides* or *E. carnea*. Other species that may be present and abundant locally include *Corymbia intermedia*, *C. trachyphloia* subsp. *trachyphloia*, *Eucalyptus tereticornis*, *E. microcorys*, *E. portuensis*, *E. helidonica*, *E. major*, *E. longirostrata*, *E. biturbinata*, *E. moluccana* and *Angophora leiocarpa*. *Lophostemon confertus* often present in gullies and as a sub-canopy or understorey tree. Mixed understorey of grasses, shrubs and ferns. Occurs on hills and ranges of Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. (BVG1M: 10b)

RE 12.11.24

Eucalyptus carnea, *E. tindaliae*, *Corymbia intermedia* woodland +/- *E. crebra* or *E. siderophloia*, *Eucalyptus resinifera*, *Eucalyptus major*, *E. helidonica*, *Angophora woodsiana*, *C. trachyphloia*, *E. microcorys*, *Corymbia citriodora* subsp. *variegata*, *C. henryi*. Occurs on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics usually at altitudes <300 metres. (BVG1M: 9g)

Vegetation management preclearing regional ecosystem mapping indicates that that impact corridor could also pass through areas that also once contained Least Concern RE 12.3.5 and OF Concern RE 12.3.11.

Least Concern RE 12.3.5

Melaleuca quinquenervia open forest to woodland. Understorey depends upon duration of water logging; sedges and ferns, especially Blechnum indicum, in wetter microhabitats and grasses and shrubs in drier microhabitats. Ground layer species include the grasses Leersia hexandra and Imperata cylindrica, the sedges/rushes, Baumea rubiginosa, Gahnia sieberiana, Lepironia articulata, Schoenus brevifolius and Schoenus scabripes and the fern Lygodium microphyllum. Other tree species that may be present as scattered individuals or clumps include Lophostemon suaveolens, Eucalyptus robusta, E. tereticornis, E. bancroftii, E. latisinensis, Corymbia intermedia, Melaleuca salicina, Livistona australis, Casuarina glauca, Endiandra sieberi. Melastoma malabathricum subsp. malabathricum, Glochidion sumatranum and Melicope eleryana are often in understorey. Occurs on Quaternary alluvium in coastal areas. (BVG1M: 22a)

Of Concern RE 12.3.11

Palustrine wetland (e.g. vegetated pond).

Eucalyptus tereticornis +/- E. siderophloia and Corymbia intermedia open forest to woodland. Corymbia tessellaris, Lophostemon suaveolens and Melaleuca quinquenervia frequently occur and often form a low tree layer. Other species present in scattered patches or low densities include Angophora leiocarpa, E. exserta, E. grandis, C. trachyphloia, C. citriodora subsp. variegata, E. latisinensis, E. tindalii, E. racemosa and Melaleuca sieberi. E. seeana may be present south of Landsborough and Livistona palm trees may occur in scattered patches or low densities in the Glenbar SF and Wongi SF areas. Occurs on Quaternary alluvial plains and drainage lines along coastal lowlands. Rainfall usually exceeds 1000mm/y. (BVG1M: 16c)

4.3.4 Vegetation communities

Ecological investigations revealed that the subject site contained three (3) vegetation communities. The location and extent of these vegetation communities is shown in the map of Vegetation Communities found within Appendix 3. A full species list of flora observed on site is found in Appendix 2. These communities are described as follows:

Community 1 –Disturbed and planted roadside vegetation

Location

This community is located along most of the proposed sewer corridor alignment.

Composition

This area contains largely represented by disturbed and planted roadside vegetation. Some vegetation within the area is native but appears to have been planted as part of landscaping works following the construction of the Pacific Motorway. Various exotic grasses and invasive weeds such as *Lantana camara*, *Erythrina crista-galli* and *Sphagneticola trilobata* dominant this community. Native species throughout this community include *Melaleuca viminalis*, *Melaleuca quinquenervia*, *Melaleuca linariifolia*, *Acacia disparrima* sub sp *disparrima*, and some isolated *Eucalyptus tereticornis* and *Corymbia citriodora* subsp. *variegata*.

Significant species

No EPBC or NCA significant species were observed.

Conservation status

As the area consists of only regrowth, planted or exotic vegetation, it is not considered to have a conservation status.

Photos



Community 2 – Eucalyptus tereticornis and Eucalyptus siderophloia woodland

Location

This community is in the eastern portion the proposed impact corridor in associated with the front of Lot 4 on WD3607.

Composition

This community is largely dominated by *Eucalyptus tereticornis* and *Eucalyptus siderophloia*, with occasional *Corymbia intermedia*. Some individual Ficus species also occur in proximity to the impact corridor

Significant species

No EPBC and NCA significant species were observed.

Conservation status

This portion of this community that occurs on the front of Lot 4 on WD3607 near the proposed impact corridor is mapped as Least Concern RE remnant vegetation.

Photos



Community 3 – Palustrine Wetland

Location

This community outside but adjacent to the proposed impact corridor.

Composition

This area contains a combination of historical pasture areas, native wetland sedges and grasses, and scattered *Eucalyptus tereticornis*, *Eucalyptus siderophloia*, and dead stags.

Significant species

No EPBC or NCA significant species were observed.

Conservation status

As the area has been disturbed and is mapped as non-remnant according the vegetation management mapping, it is not considered to have a particular conservation status.

Photos



4.3.5 Consistency with regional ecosystem mapping

Community 2 – Eucalyptus tereticornis and Eucalyptus siderophloia woodland is the only vegetation community in the impact corridor that is mapped as remnant vegetation within vegetation management regional ecosystem mapping. The regional ecosystem describes this vegetation as RE12.11.5 / RE 12.11.24, however the site investigations indicate that potentially this area of vegetation is better described as an ecotone or transitional zone between RE 12.11.5 / RE 12.11.24 and RE 12.3.11, due to the proximity to the alluvial wetland area, and the presence of *Eucalyptus tereticornis* and *Eucalyptus siderophloia* as the most dominant species.

5 Fauna assessment

5.1 Introduction

This section describes methods used to investigate fauna species and the likelihood they use the subject site. It also discusses the results of the fauna assessment. This fauna assessment involved an opportunistic investigation of fauna that were present on the site during the site survey and a habitat assessment of the site which indicate likely fauna use.

5.2 Methods

5.2.1 Database searches

A database search was conducted using the Protected Matters Search tool which lists all potential occurrences of EPBCA-listed fauna species. The search was conducted for a 5km radius of the subject site.

The DES Wildlife Online Database was also searched for conservation-listed species known to occur within a 5km radius of the subject site (Appendix 1).

The Atlas of Living Australia (ALA) was also consulted for species records from around the area of the subject site.

The City of Gold Coast fauna and flora database search tool was also utilised, focusing on records from within 5km of the subject site.

5.2.2 Habitat assessment

Fauna habitat values were investigated on 16th, 17th and the 23rd April 2020, for approximately 10 hours in total. This site assessment investigated a range of habitat features. Opportunistic fauna records were taken during the daylight flora surveys, with fauna observations also made at different times of the day.

A general fauna habitat assessment, including a description of the habitat values of the site and the surrounding area was undertaken. Specific habitat assessments for any flora and fauna species of conservation significance identified in database searches was undertaken including an assessment of their likelihood of occurrence.

5.3 Results

5.3.1 Database searches

The EPBCA Protected Matters search indicated that 51 threatened fauna species and 46 migratory species may potentially occur within a 5km radius of the subject site. The Protected Matters search is a predictive tool only. The DES Wildlife Online search also indicated that 9 significant species were known to occur within a 5km radius of the subject site. Table 3 lists all EPBCA and NCA listed fauna species identified by the database searches. A list of migratory species is provided in Table 4. All migratory species are listed as Special Least Concern under the NCA.

Table 3 – Database records of threatened fauna species with 5km radius of the subject site

Common Name	Scientific Name	EPBCA	NCA
Birds			
Regent Honeyeater	<i>Anthochaera phrygia</i>	E	E
Australasian Bittern	<i>Botaurus poikiloptilus</i>	E	LC
Red Knot	<i>Calidris canutus</i>	E	E
Curlew Sandpiper	<i>Calidris ferruginea</i>	CE	E
Coxen's Fig-Parrot	<i>Cyclopsitta cyanea coxeni</i>	E	E
Eastern Bristlebird	<i>Dasypops podiceps</i>	E	E
Antipodean Albatross	<i>Diomedea antipodensis</i>	V	V
Gibson's Albatross	<i>Diomedea antipodensis gibsoni</i>	V	V
Wandering Albatross	<i>Diomedea exulans</i>	V	V
Red Goshawk	<i>Erythrorhynchus radiatus</i>	V	E
Grey Falcon	<i>Falco hypoleucos</i>		V
Squatter Pigeon (southern)	<i>Geophaps scripta scripta</i>	V	V
White-throated Needletail	<i>Hirundapus caudacutus</i>	V	V
Swift Parrot	<i>Lathamus discolor</i>	CE	E
Bar-tailed Godwit	<i>Limosa lapponica baueri</i>	V	V
Northern Siberian Bar-tailed Godwit	<i>Limosa lapponica menzbieri</i>	CE	E
Southern Giant-Petrel	<i>Macronectes giganteus</i>	E	E
Northern Giant Petrel	<i>Macronectes halli</i>	V	V
Eastern Curlew	<i>Numenius madagascariensis</i>	CE	E
Fairy Prion (southern)	<i>Pachyptila turtur subantarctica</i>	V	LC
Plumed frogmouth	<i>Podargus ocellatus plumiferus</i>		V

Common Name	Scientific Name	EPBCA	NCA
Australian Painted Snipe	<i>Rostratula australis</i>	E	V
Australian Fairy Tern	<i>Sternula nereis nereis</i>	V	
Shy Albatross	<i>Thalassarche cauta cauta</i>	V	V
White-capped Albatross	<i>Thalassarche cauta steadi</i>	V	V
Chatham Albatross	<i>Thalassarche eremita</i>	E	
Campbell Albatross	<i>Thalassarche impavida</i>	V	LC
Black-browed Albatross	<i>Thalassarche melanophris</i>	V	LC
Salvin's Albatross	<i>Thalassarche salvini</i>	V	
Hooded Plover (eastern)	<i>Thinornis rubricollis rubricollis</i>	V	
Black-breasted Button-quail	<i>Turnix melanogaster</i>	V	V
Fish			
Black Rockcod	<i>Epinephelus daemeli</i>	V	
Mary River Cod	<i>Maccullochella niarensis</i>	E	
Frogs			
Fleay's Frog	<i>Mixophyes fleayi</i>	E	E
Insects			
Australian fritillary	<i>Argynnis hyalanthus inconstans</i>	CE	E
Pink Underwing Moth	<i>Phyllosticta imperialis smithersi</i>	E	
Richmond Birdwing	<i>Gnathopetala richmondia</i>		V
Mammals			
Large-eared Pied Bat	<i>Chalinolobus dwyeri</i>	V	LC
Spotted-tail Quoll	<i>Dasyurus maculatus maculatus</i>	E	E
Greater Glider	<i>Petauroides volans</i>	V	V
Koala	<i>Phascolarctos cinereus</i>	V	V
Long-nosed Potoroo	<i>Potorous tridactylus tridactylus</i>	V	LC
New Holland Mouse	<i>Pseudomys novaehollandiae</i>	V	LC
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V	LC
Water mouse, False Water Rat	<i>Xeromys myoides</i>	V	V
Reptiles			
Loggerhead Turtle	<i>Caretta caretta</i>	E	E
Green Turtle	<i>Chelonia mydas</i>	V	V
Collared Delma	<i>Delma torquata</i>	V	LC
Leatherback Turtle	<i>Dermochelys coriacea</i>	E	E

Common Name	Scientific Name	EPBCA	NCA
Hawksbill Turtle	<i>Eretmochelys imbricata</i>	V	E
Olive Ridley Turtle	<i>Lepidochelys olivacea</i>	E	E
Flatback Turtle	<i>Natator depressus</i>	V	V
Three-toed Snake-tooth Skink	<i>Saiphos reticulatus</i>	V	LC

EPBCA/NCA Status: - CE = Critically Endangered E = Endangered, V = Vulnerable, NT = Near Threatened, LC = Least Concern, M = Migratory

Table 4 – Migratory species listed under the EPBCA as potentially occurring in the vicinity of the subject site

Common Name	Scientific Name
Terrestrial Bird Species	
Oriental Cuckoo	<i>Cuculus optatus</i>
White-throated Needletail	<i>Hirundoapus caudacutus</i>
Black-faced Monarch	<i>Monarcha melanopsis</i>
Spectacled Monarch	<i>Monarcha trivirgatus</i>
Satin Flycatcher	<i>Myscega cyanoleuca</i>
Rufous Fantail	<i>Rhipidura rufifrons</i>
Wetland Bird Species	
Common Sandpiper	<i>Actitis hypoleucos</i>
Great Egret	<i>Ardea alba</i>
Cattle Egret	<i>Ardea ibis</i>
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>
Red Knot	<i>Calidris canutus</i>
Curlew Sandpiper	<i>Calidris ferruginea</i>
Pectoral Sandpiper	<i>Calidris melanotos</i>
Latham's Snipe	<i>Gallinago hardwickii</i>
Bar-tailed Godwit	<i>Limosa lapponica</i>
Eastern Curlew	<i>Numenius madagascariensis</i>
Osprey	<i>Pandion haliaetus</i>
Pacific Golden Plover	<i>Pluvialis fulva</i>
Common Greenshank	<i>Tringa nebularia</i>
Marsh Sandpiper	<i>Tringa stagnatilis</i>
Marine Bird Species	
Common Noddy	<i>Anous stolidus</i>

Common Name	Scientific Name
Magpie Goose	<i>Anseranas semipalmata</i>
Fork-tailed Swift	<i>Apus pacificus</i>
Sooty Shearwater	<i>Ardenna grisea</i>
Streaked Shearwater	<i>Calonectris leucomelas</i>
Antipodean Albatross	<i>Diomedea antipodensis</i>
Wandering Albatross	<i>Diomedea exulans</i>
Lesser Frigatebird	<i>Fregata ariel</i>
Great Frigatebird	<i>Fregata minor</i>
Gibson's Albatross	<i>Gibson's Albatross</i>
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>
Pied Stilt	<i>Himantopus himantopus</i>
Southern Giant-Petrel	<i>Macronectes giganteus</i>
Northern Giant Petrel	<i>Macronectes halli</i>
Rainbow Bee-eater	<i>Meropops ornatus</i>
Tasmanian Shy Albatross	<i>Thalassarche cauta</i>
Chatham Albatross	<i>Thalassarche eremita</i>
Campbell Albatross	<i>Thalassarche impavida</i>
Black-browed Albatross	<i>Thalassarche melanophrys</i>
White-capped Albatross	<i>Thalassarche steadi</i>

5.3.2 Habitat assessment

The remaining vegetation in the impact corridor and adjacent the impact corridor is in the form of relatively dense exotic grass and weed growth, with some native species scattered throughout. Most of the impact corridor has been previously cleared of native vegetation, and since been replanted with landscape like plantings around the edges of the Pacific Motorway, and Staplyton Jacobs Well Road. These pockets of vegetation between the major intersections and lanes of the Pacific Motorway hold low habitat values due to their location and limited vegetation. No mature trees with hollows or other habitat features were observed in these areas.

Some aquatic habitat was observed within one of the vegetation pockets adjacent to the Pacific Motorway slip lane entrance. Some water is pooling in this area and draining way through the culverts under the roads through this area, which could provide some habitat for frog species. No habitat for any threatened frog species was observed. The water in this area was limited and of a polluted red-brown colour. Therefore, it would not be expected that this area would provide significant habitat for turtles and freshwater fish.

In the area where the impact corridor passes through the front of Lot 4 on WD3607 there is an area of mature *Eucalyptus tereticornis* and *Eucalyptus siderophloia*. This area has more potential to provide habitat in the form of hollows and termite nests for arboreal hollow nesting birds, possums, gliders and snakes. This area could also be considered potential koala habitat due to the presence of the favoured koala food tree species *Eucalyptus tereticornis* and *Eucalyptus siderophloia*. However due to the limited extent of this area within the vicinity of the impact corridor, it would not be a substantial habitat patch. Random koala scat searches were undertaken at the base of four koala favoured food trees species in this area, however no koala scats were observed. Trees in this area were also searched for fauna scratches, however very few scratches were observed, indicating the area also is not likely to be utilised by koalas, or by possums and other arboreal mammals.

Hollow bearing logs, fallen trees and leaf litter were present throughout the site in various areas, and would provide habitat for small mammals and reptiles. Dense thickets of various exotic weeds such as *Lantana camara* could provide habitat to small birds such as fairy wrens and finches.

No evidence of Macropods use of the site was observed, however, it is possible that some macropod use of the adjacent open pasture areas does occur.

As discussed in the Flora Assessment, an area of Pasture wetland does exist to the north of the proposed impact corridor. This area was observed to contain wetland features and would provide wetland habitat for a variety of birds, frogs and other wetland species. However, this area is well separated from the proposed impact corridor.

5.3.3 Fauna Survey

The site survey recorded minimal fauna, with 15 avian species, two (2) reptile species, and one (1) amphibian species recorded. This does not confirm the presence or absence of other species on the site. The fauna observed on site are listed in Table 5.

Table 5 – Fauna Survey

Scientific Name	Common Name	Method of Detection
Birds		
<i>Anas superciliosa</i>	Pacific Black Duck	Visual
<i>Ardea intermedia</i>	Intermediate Egret	Visual
<i>Cacatua galerita</i>	Sulphur-Crested Cockatoo	Aural
<i>Columba livia</i>	Rock Dove (Feral Pigeon)	Visual
<i>Corvus orru</i>	Torresian Crow	Visual

Scientific Name	Common Name	Method of Detection
<i>Cracticus tibicen</i>	Australian Magpie	Visual
<i>Cracticus nigrogularis</i>	Pied Butcherbird	Visual
<i>Grallina cyanoleuca</i>	Magpie-lark	Visual
<i>Lichmera indistincta</i>	Brown Honeyeater	Aural
<i>Lochura castaneothorax</i>	Chesnut Breasted Mannikin	Visual
<i>Manorina melanocephala</i>	Noisy Miner	Visual
<i>Milvus migrans</i>	Black Kite	Visual
<i>Threskiornis molucca</i>	Australian White Ibis	Visual
<i>Trichoglossus haematodus</i>	Rainbow Lorikeet	Visual
<i>Vanellus miles</i>	Masked Lapwing	Visual
Reptiles		
<i>Amphibolurus nobbi</i>	Nobbi Lizard	Visual
<i>Pseudonaja textilis</i>	Eastern Brown Snake	Visual
Amphibians		
<i>Bufo marinus</i>	Cane Toad	Visual

* Listed as migrator under the EPBCA

5.3.4 Possible occurrences of significant fauna species on site

The following Table provides the likelihood of significant species occurring on the subject site.

Table 6 – Possible occurrences of significant fauna species on the subject site

Name	Status*		Habitat Requirements	Potential to Occur on Site
	EPBC	NCA		
Birds – Threatened and Migratory Species				
<i>Actitis hypoleucos</i> Common Sandpiper	Mi	LC	This species inhabits a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats.	Limited suitable habitat exists on the subject site. Unlikely, but possible occurrence in wetland area outside of impact corridor.
<i>Anous stolidus</i> Common Noddy	Mi	LC	Usually occurs near or near islands, on rocky islets and stacks with precipitous cliffs, or on shoals or cays of coral or sand. They may also nest on the ground in Pigface (<i>Carpobrotus</i> spp.) or grass, on bare rock, on top of rocks protruding above vegetation, on shingle beaches, among coral rubble or in sand close to grassy areas.	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Anseranas semipalmata</i> Magpie Goose	Mi	LC	Tropical floodplains, shallows of dams, irrigated crops, swampy well vegetated margins of deep waterways.	Some suitable habitat exists on the subject site. Possible occurrence in wetland area outside of impact corridor.

<i>Anthochaera phrygia</i> Regent Honeyeater	E	E	This species mostly occurs in dry box-ironbark eucalypt woodland and dry sclerophyll forest associations, wherein they prefer the most fertile sites available, e.g. along creek flats, or in broad river valleys and foothills (Slater et al. 2009).	Suitable habitat does not occur on site. Unlikely to occur.
<i>Apus pacificus</i> Fork-tailed Swift	Mi	LC	Almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher (Higgins 1999). In Australia, they mostly occur over inland plains but sometimes above foothills or in coastal areas. They often occur over cliffs and beaches and over islands and sometimes well out to sea. They also occur over settled areas, including towns, urban areas and cities. They mostly occur over dry open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh. They are also found at treeless grassland and sandpains covered with spinifex, open woodland and inland and coastal sand-dunes. They sometimes occur above rainforests, wet sclerophyll forest or open forest or plantations of pines.	Limited suitable habitat exists on the subject site. Site is within this species known range. Low likelihood to fly over the site at times.
<i>Ardea alba</i> Great Egret, White Egret	Mi	LC	Salt and freshwater marshes, marshy ponds and tidal flats (Marchant and Higgins 1990).	Some suitable habitat exists on the subject site. Possible occurrence in wetland area outside of impact corridor.

<i>Ardea ibis</i> Cattle Egret	Mi	LC	Tropical and temperate grasslands, wooded lands and terrestrial wetlands (Marchant and Higgins 1990). Occasionally seen in arid and semi-arid regions however this is rare. High numbers observed in moist, low-lying poorly drained pastures with an abundance of high grass. Avoids low grass pastures. It has been recorded on earthen dam walls and ploughed fields. Commonly associated with the habitat of farm animals, particularly cattle, but also pigs, sheep, horses and deer. Known to follow earth-moving machinery and has been located at rubbish tips. It uses predominantly shallow, open and fresh wetlands including meadows and swamps with low emergent vegetation and abundant aquatic flora.	Some suitable habitat exists on the subject site. Possible occurrence in wetland area outside of impact corridor.
<i>Ardenna grisea</i> Sooty Shearwater	Mi	LC	The Sooty Shearwater forages in pelagic (open ocean) sub-tropical, sub-Antarctic and Antarctic waters. The Sooty Shearwater breeds mainly on subtropical and sub-Antarctic islands, as well as on the mainland of New Zealand. Birds nest in burrows or rock crevices on coastal slopes, ridges and cliff tops in herb fields, tussock grassland or forest.	Suitable habitat does not occur on site. Unlikely to occur.
<i>Botaurus poiciloptilus</i> Australasian Bittern	E	LC	Preferred habitat is comprised of wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from	Limited suitable habitat exists on the subject site.

			platforms or mats of vegetation over deep water. It favors permanent and seasonal freshwater habitats, particularly those dominated sedges, rushes and reeds (e.g. Phragmites, Cyperus, Eleocharis, Juncus, Typha, Baumea, Bolboschoenus) or cutting grass (Gahnia) growing over a muddy or peaty substrate (Marchant and Higgins, 1990).	Unlikely, but possible occurrence in wetland area outside of impact corridor.
<i>Calidris acuminata</i> Sharp tailed Sandpiper	Mi	Special LC	Fresh or saltwater wetlands – the muddy edges of lagoons, swamps, lakes, dams, soaks, sewage farms or temporary floodwaters (Morcombe 2000)	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor.
<i>Calidris canutus</i> Red Knot	E	E	Preferred habitats tidal sands, mudflats. Rare inland	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Calidris ferruginea</i> Curlew Sandpiper	CE	E	Mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. (Higgins & Davies 1996).	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor.

<i>Calidris melanotos</i> Pectoral Sandpiper	Mi		Prefers shallow fresh to saline wetlands. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor.
<i>Calonectris leucomelas</i> Streaked Shearwater	Mi	LC	Pelagic seas, shelf waters	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Cuculus optatus</i> Oriental Cuckoo	Mi	LC	This species displays preference for habitats such as forests, woodlands, thick riverine vegetation (Slater et al. 1999).	No suitable habitat present on the subject site. Unlikely to occur.
<i>Cyclopsitta diophthalma coxeni</i> Coxen's Fig-Parrot	E	E	Rainforest habitats including subtropical rainforest, dry rainforest, littoral and developing littoral rainforest, and vine forest (Coxen's Fig-Parrot Recovery Team 2001; Holmes and Templeton 1992).	No suitable habitat present on the subject site. Unlikely to occur.
<i>Dasyornis brachypterus</i> Eastern Bristlebird	E	E	Found in widely scattered heaths, sedges, blady grass and overgrown watercourses (Slater et al. 2009).	Minimal suitable habitat occurs on the subject site. Low potential for occurrence.

<i>Diomedea antipodensis</i> Antipodean Albatross	V	V	The Antipodean Albatross is marine, pelagic and aerial. The Antipodean Albatross nests in open patchy vegetation, such as among tussock grassland or shrubs on ridges, slopes and plateaus (BirdLife International 2009; Warham & Bell 1979).	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Diomedea antipodensis gibsoni</i> Gibson's Albatross	V	V	Gibson's Albatross is marine, pelagic and aerial.	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Diomedea exulans</i> Wandering Albatross	V	V	The Wandering Albatross is marine, pelagic and aerial (Falla 1937; Hicks 1973).	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Erythrotriorchis radiatus</i> Red Goshawk	V	E	Prefers forest and woodland with a mosaic of vegetation types, large prey populations (e.g. possums) and permanent water (Marchant and Higgins 1993). The vegetation types include eucalypt woodland, open forest, tall open forest, gallery rainforest, swamp forest, hill forest, and rainforest margins. The Red Goshawk nests in large trees, frequently the tallest and most massive in a tall stand, and nest trees are invariably within one kilometre of permanent water.	Some suitable habitat exists on the subject site. Low potential for occurrence.
<i>Falco hypoleucos</i> Grey Falcon		V	Open Woodland and scrub types, usually in the more arid zones (Simpson and Day, 2010)	
<i>Fregata ariel</i>	Mi	LC	Airspace over tropical seas, usually pelagic. Over shelf waters, inland over continental coastlines.	Suitable habitat does not exist on the subject site.

Lesser Frigatebird				Unlikely to occur.
<i>Fregata minor</i> Great Frigatebird	Mi	LC	Tropical seas, pelagic inshore shelf waters	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Gallinago hardwickii</i> Latham's Snipe Japanese Snipe	Mi	LC	Occurs in permanent and ephemeral wetlands up to 2000m above sea-level (Naarding 1981). They usually inhabit open, freshwater wetlands with low, dense vegetation.	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor.
<i>Geophaps scripta</i> <i>scripta</i> Squatter Pigeon (southern)	V	V	Occurs mainly in grassy woodlands and open forests that are dominated by eucalypts (Frith 1982). It has also been recorded in sown grassland with scattered remnant trees, disturbed habitats (i.e. around stockyards, along roads and railways, and around settlements), in scrub and acacia growth, and remains common in heavily-grazed country north of the tropic of Capricorn. The species is commonly observed in habitats that are located close to bodies of water. It has been observed foraging along roads and railways and around settlements with domestic fowl.	Minimal suitable habitat on site. Not considered likely to occur on site
<i>Haliaeetus leucogaster</i> White Bellied Sea-Eagle	Mi	V	Found in coastal habitats (especially those close to the seashore) and around terrestrial wetlands in tropical and temperate regions of mainland Australia and its offshore	Suitable habitat does exist on subject site. Possible occurrence in wetland

			islands. The habitats occupied by the sea-eagle are characterised by the presence of large areas of open water (larger rivers, swamps, lakes, the sea). Birds have been recorded in (or flying over) a variety of terrestrial habitats	area outside of impact corridor.
<i>Himantopus himantopus</i> Pied Stilt	Mi		Freshwater and saltwater marches.	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor.
<i>Hirundapus caudacutus</i> White-throated Needletail	Mi	LC	In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable (Cramp 1985), but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland (Higgins 1999). They also commonly occur over heathland, but less often over	Limited suitable habitat exists on the subject site. Site is within this species known range. Low likelihood to fly over the site at times.

			treeless areas, such as grassland or swamps. When flying above farmland, they are more often recorded above partly cleared pasture, plantations or remnant vegetation at the edge of paddocks. In coastal areas, they are sometimes seen flying over sandy beaches or mudflats and often around coastal cliffs and other areas with prominent updraughts, such as ridges and sand dunes. They are sometimes recorded above islands well out to sea.	
<i>Lathamus discolor</i> Swift Parrot	CE	E	This species is found in forests, woodlands, plantations, parks and gardens. This species has a distinct preference for the largest Blue gums (<i>Eucalyptus tereticornis</i>) primarily in Brisbane's western suburbs (Slater et al. 1999).	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor where large Blue gums occur.
<i>Limosa lapponica baueri</i> Bar-tailed Godwit	V	V	Intertidal flats and sandbanks	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Limosa lapponica menzbieri</i> Northern Siberian Bar-tailed Godwit	CE	E	Intertidal flats and sandbanks	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Macronectes giganteus</i> Southern Giant-Petrel	E	E	Oceans and bays, scavenging off ships	Suitable habitat does not exist on the subject site.

				Unlikely to occur.
<i>Macronectes halli</i> Northern Giant-Petrel	V	V	Oceans and bays, scavenging off ships	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Merops ornatus</i> Rainbow Bee-eater	Mi	LC	Occurs mainly in open forests and woodlands, shrublands, and in various cleared or semi-cleared habitats, including farmland and areas of human habitation (Jiggins 1999). It usually occurs in open, cleared or lightly-timbered areas that are often, but not always, located near permanent water. It also occurs in inland and coastal sand dune systems, and in mangroves in northern Australia, and has been recorded in various other habitat types including heathland, sedgeland, vine forest and vine thicket, and on beaches. This species occurs in open woodlands and shrublands, including mallee, and in open forests that are usually dominated by eucalypts. It also occurs in grasslands and, especially in arid or semi-arid areas, in riparian, floodplain or wetland vegetation assemblages.	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor.
<i>Monarcha melanopsis</i> Black-faced Monarch	Mi	LC	Found down the entire Eastern seaboard of Australia, inhabiting rainforests, moist eucalypt forests and gullies (Pizzey and Knight 1997).	No suitable habitat occurs on site. Low likelihood of occurrence.
<i>Monarcha trivirgatus</i> Spectacled monarch	Mi	LC	Found down the entire Eastern seaboard of Australia, inhabiting rainforests, moist eucalypt forests and gullies	No suitable habitat occurs on site.

			(Pizzey and Knight 1997).	Low likelihood of occurrence.
<i>Myiagra cyanoleuca</i> Satin flycatcher	Mi	LC	Primarily considered to frequent thick forested gullies (Slater et al. 2009).	No suitable habitat on site. Not considered likely to occur on site.
<i>Numenius madagascariensis</i> Eastern Curlew	CE	E	Coastal Estuaries, mudflats, mangroves, sandspits	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Pachyptila turtur subantarctica</i> Fairy prion (southern)	V	LC	Oceans, coastal breeding islands	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Pandion haliaetus</i> Osprey	Mi	LC	This species is known to inhabit coastal and coastal habitats and terrestrial wetlands in tropical and temperate Australia and offshore islands (Marrinant and Higgins 1993).	Some suitable habitats on site. Possible occurrence on the subject site.
<i>Pluvialis fulva</i> <i>Pacific Golden Plover</i>	Mi	LC	Inhabits coastal habitats, though it occasionally occurs around inland wetlands. Pacific Golden Plovers usually occur in beaches, mudflats and sandflats (sometimes in vegetation such as mangroves, low saltmarsh such as <i>Sarcocornia</i> , or beds of seagrass) in sheltered areas including harbours, estuaries and lagoons, and in evaporation ponds in saltworks.	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor.

<i>Podargus ocellastus plumiferus</i> Plumed Frogmouth		V	River edge gallery forest, monsoon forest, rainforest, adjoining Eucalypt or melaleuca forests and woodlands and in patches of sub-tropical lowland rainforest at altitudes up to 800m.	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Rostratula australis</i> Australian Painted Snipe	E	V	The Australian Painted Snipe is usually found in shallow inland wetlands, either freshwater or brackish, that are either permanently or temporarily filled (Marchant and Higgins 1993). It is a cryptic bird that is hard to see and often overlooked. Usually only single birds are seen, though larger groups of up to 30 have been reported. It nests on the ground amongst tall reed-like vegetation near water, and feeds near the water's edge and in mudflats, taking invertebrates, such as insects and worms, and seeds.	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor.
<i>Rhipidura rufifrons</i> Rufous Fantail	Mi	LC	Most often observed in thickets and undergrowth close to the ground in rainforest and forests (Slater et al. 2009).	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Sternula nereis nereis</i> Australian Fairy Tern	V		Habitat consists of coasts and estuaries. Breeds on sandy beaches and sand spits (Simpson and Day 2010)	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Thalassarche cauta</i> Shy Albatross	V	V	Oceanic, coastal, follows trawlers	Suitable habitat does not exist on the subject site. Unlikely to occur.

<i>Thalassarche cauta steadi</i> White-capped Albatross	V	V	Oceanic, coastal, follows trawlers	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Thalassarche eremite</i> Chatham Albatross	E		Oceanic, coastal, follows trawlers	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Thalassarche impavida</i> Campbell Albatross	V	LC	Oceanic, coastal, follows trawlers	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Thalassarche melanophris</i> Black-browed Albatross	V	LC	Oceanic, coastal, follows trawlers	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Thalassarche salvini</i> Salvin's Albatross	V		Oceanic, coastal, follows trawlers	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Thinornis rubricollis rubricollis</i> Hooded Plover (eastern)	V		Mainly occurs on wide beaches backed by dunes with large amounts of seaweed and jetsam, creek mouths and inlet entrances. Nests are found above the high-water mark on flat beaches, on stony terraces, or on sparsely vegetated dunes.	Suitable habitat does not exist on the subject site. Unlikely to occur.

<i>Tringa nebularia</i> Common Greenshank	Mi	LC	Diverse inland and coastal, permanent and temporary wetlands, billabongs, swamps, lakes, floodplains, sewage farms, mudflats, mangroves and muddy shallows	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor.
<i>Tringa stagnatilis</i> Marsh Sandpiper	Mi	LC	Lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, salt pans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and regularly at sewage farms and saltworks.	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor.
<i>Turnix melanogaster</i> Black-breasted Buttonquail	V	V	This species is found in dense rainforests, vine thickets, scrubby open wetlands and Lantana thickets (Slater et al. 2009).	Suitable habitat does not exist on the subject site. Unlikely to occur
Fish – Threatened Species				

<i>Epinephelus daemeli</i> Black Rockcod	V		Adult Black Rockcod are known to occur in caves, gutters and on rocky reefs from near shore environments to depths of at least 50 m (Heemstra and Randall 1993). Recently settled small juveniles are occasionally found in intertidal rock pools along the NSW coastline and larger juveniles are generally captured by anglers on rocky reefs in estuary systems.	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Maccullochella mariensis</i> Mary River Cod	E	E	Ideal habitat is described as deep, shaded, slow flowing pools with plenty of snags and log-piles. Mary River Cod form pairs and spawn annually around spring	Translocated population known to occur within area Possible occurrence
Frogs – Threatened Species				
<i>Mixophyes fleayi</i>	E	E	<i>Mixophyes fleayi</i> Frog is associated with montane rainforest (Corben & Ingram 1997) and open forest communities adjoining rainforest (Hines 2000, pers. 40etic.). The species occurs along stream habitats from first to third order streams (i.e. small streams close to their origin through to permanent streams with grades of 1 in 50) and is not found in ponds or ephemeral pools. Adults may be found in leaf litter and along watercourses in rainforest and adjoining wet sclerophyll forests (Hines & SEQTFRT 2002).	Suitable habitat does not exist on the subject site. Unlikely to occur.

Insects – Threatened Species				
<i>Argynnis hyperbius inconstans</i> Australian Fritillary	CE	E	River estuaries or swampy coastal areas at or near sea level. Restricted to open, swampy, coastal areas where the larval food plant, <i>Viola betonicifolia</i>, grows as a small, insignificant ground herb in association with <i>Lomandra longifolia</i> (long leaved matrush) and grasses, especially the grass <i>Imperata eticulates</i> (bladey grass). This habitat is called Melaleuca wetlands. This is also sometimes found in disturbed areas (e.g. the drainage ditches of sugarcane farms) or in association with water course plant communities where its food plant <i>Viola betonicifolia</i> is present.	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor
<i>Phyllodes imperialis smithersi</i> Pink Underwing Moth	E		The Pink Underwing Moth is found below the altitude of 600 m in undisturbed, sub-tropical rain forest on rich volcanic soils and fertile alluvium. It occurs in association with the vine <i>Carronia multisulcata</i>, a collapsed shrub that provides the food and habitat the moth requires in order to breed (Clarke & Spier-Ashcroft 2003; NSW DECC 2005ag). Where <i>C. multisulcata</i> attains an upright form, the association with the moth does not occur	Suitable habitat does not exist on the subject site. Unlikely to occur.

<i>Ornithoptera richmondia</i> Richmond Birdwing		V	Lives in subtropical rainforest where its larval host plants grow.	Suitable habitat does not exist on the subject site. Unlikely to occur.
Mammals – Threatened Species				
<i>Chalinolobus dwyeri</i> Large-eared Pied Bat	V	LC	This species prefers dry sclerophyll forests and woodlands of western facing slopes and interiors (Ryan 1995).	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Dasyurus maculatus maculatus</i> Spotted-tailed Quoll	E	E	This species is found in high altitude rainforests and wet sclerophyll forest (TSSC 2004).	Suitable habitat does not exist on the subject site. Unlikely to occur.
<i>Petauroides volans</i> Greater Glider	V	V	Typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows (Andrew et al., 1994; Smith et al., 1994, 1995; Kavanagh 2000; Eyre 2004; van der Ree et al., 2004; Vanderschueren et al., 2012). The distribution may be patchy even in suitable habitat (Kavanagh 2000). The greater glider inhabits forests with a diversity of eucalypt species, due to seasonal variation in its preferred tree species (Kavanagh 1984).	Limited suitable habitat occurs on the subject site. Possible occurrence in wetland area outside of impact corridor, where large Blue gums may contain large hollows.
<i>Phascolarctos cinerus</i>	V	V	Koalas naturally inhabit a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities	Some suitable habitat on site.

Koala			dominated by Eucalyptus species (Martin & Handasyde 1999). Koala habitat can be broadly defined as any forest or woodland containing species that are known koala food trees, or shrubland with emergent food trees. The distribution of this habitat is largely influenced by landscape elevation, annual temperature and rainfall patterns, soil types and the resultant soil moisture availability and fertility. Preferred food and shelter trees are naturally abundant on fertile clay soils.	Possible occurrence on the subject site particularly in associated with Eucalyptus tereticornis and Eucalyptus siderophloia occurrences.
<i>Potorous tridactylus</i> <i>tridactylus</i> Long-nosed Potoroo	V	LC	This species prefers wet, high altitude forests with dense ground cover (Menkhorst and Knight 2011).	No suitable habitat on site. Not considered likely to occur on site.
<i>Pseudomys novaehollandiae</i> New Holland Mouse	V	LC	This species is most found in dry sclerophyll forest with sparse ground or shrub cover (Menkhorst and Knight 2011).	Minimal suitable habitat on site. Low likelihood of occurrence.
<i>Pteropus poliocephalus</i> Grey-headed Flying-	V	LC	Usually inhabits dense vegetation in rainforest gullies in large camps (Menkhorst and Knight 2011).	Some suitable habitat on site, potential food source trees confirmed on site. Possible Occurrence.

fox				
<i>Xeromys myoides</i> Water mouse, False Water Rat	V	V	In south-east Queensland, water mouse habitat includes mangrove communities and adjacent sedgeland, grasslands and freshwater wetlands.	Suitable habitat does exist on subject site. Possible occurrence in wetland area outside of impact corridor
Reptiles – Threatened Species				
<i>Caretta caretta</i> Loggerhead Turtle	E	E	Loggerhead Turtles nest on open, sandy beaches (Spotila 2004). Hatchlings enter the open ocean and begin feeding on small animals. Small Loggerhead Turtles live at or near the surface of the ocean and move with the ocean currents.	No suitable habitat on site. Not considered likely to occur on site.
<i>Chelonia mydas</i> Green Turtle	V	V	Green Turtles spend their first five to ten years drifting on ocean currents. The shallow foraging habitat of adults contains seagrass beds or algae mats on which Green Turtles mainly feed (Marsick & Limpus 1997; Poiner & Harris 1996; Robins et al. 2002; Whiting 2000a).	No suitable habitat on site. Not considered likely to occur on site.
<i>Delma torquata</i> Collared Delma	V	LC	This species inhabits eucalypt or acacia dominated woodland and open forest where it is associated with suitable microhabitats (exposed rocky outcrops, or a sparse	Minimal suitable habitat on site.

			understorey of tussock grass, shrubs or semi-evergreen vine thickets) (Wilson and Swan 2008).	Low likelihood of occurrence.
<i>Dermochelys coriacea</i> Leatherback Turtle	E	E	The Leatherback Turtles is a highly pelagic species, venturing close to shore mainly during the nesting season (Sarti Martinez 2000). Leatherback Turtles require sandy beaches to nest, with some evidence that coarser sand is more conducive to successful hatching than finer sand (Limpus et al. 1984).	No suitable habitat on site. Not considered likely to occur on site.
<i>Eretmochelys imbricate</i> Hawksbill Turtle	V	E	Hawksbill Turtles spend their first five to ten years drifting on ocean currents (Carr 1987a; Limpus et al. 1994e). Once Hawksbill Turtles reach 30 to 40 cm curved carapace length, they settle and forage in tropical tidal and sub-tidal coral and rocky reef habitat.	No suitable habitat on site. Not considered likely to occur on site.
<i>Lepidochelys olivacea</i> Olive Ridley Turtle	E	E	Female Olive Ridley Turtles lay clutches of eggs on sandy beaches, hatchlings disperse into offshore currents and have a pelagic phase of unknown length (Musick & Limpus 1997). Small juveniles through to adults reside in coastal zones along the northern coast of Australia.	No suitable habitat on site. Not considered likely to occur on site.
<i>Natator depressus</i> Flatback Turtle	V	V	Adults inhabit soft bottom habitat over the continental shelf of northern Australia, extending into Papua New Guinea and Irian Jaya (Spring 1982; Zangerl et al. 1988)	No suitable habitat on site. Not considered likely to occur on site.

			Nesting habitat includes sandy beaches in the tropics and subtropics with sand temperatures between 25 °C and 33 °C at nest depth (Limpus 1995a).	
<i>Coeranoscincus reticulatus</i> Three-toed Snake-Tooth Skink	V	LC	This species is known to occur in montane rainforest areas and sometimes low-lying sandy areas (Watson and Swan 2008).	No suitable habitat on site. Not considered likely to occur on site.

*EPBCA/NCA Status: - CE = Critically Endangered, E = Endangered, V = Vulnerable, NT = Not Threatened, Mi = Migrant

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6 Relevant Legislation

6.1 Commonwealth Legislation

6.1.1 Introduction

The EPBCA is the Australian Government's primary article of environmental legislation. The EPBCA provides a legal structure that aims to safeguard and administer nationally and internationally significant flora, fauna, ecological communities and heritage places which are defined in the EPBCA as 'matters of national environmental significance'.

The eight matters of national environmental importance to which the EPBCA applies are:

- World heritage sites.
- National heritage places.
- Wetlands of international importance (known as 'Ramsar' wetlands after the international treaty under which these wetlands are listed).
- Nationally threatened species and ecological communities.
- Migratory species.
- Commonwealth marine areas.
- The Great Barrier Reef Marine Park; and
- Nuclear actions.

A person must not take any actions that may have a significant effect on any of these eight categories without approval under the Act.

6.1.2 Matters relevant to the subject site

Matters from the EPBCA that are relevant to the subject site are listed in bold below:

- a) Declared World Heritage Areas.
- b) National Heritage Place.
- c) **Declared Ramsar wetlands.**
- d) **Listed threatened species.**
- e) **Listed threatened ecological communities; and**
- f) **Listed migratory species.**

6.1.3 Threatened Ecological Communities

The EPBCA Protected Matters search indicated that three (3) TECs, (considered “*Matters of National Environmental Significance*”) may occur within a 5km radius of the subject site. These TECs are:

- Lowland Rainforest of Subtropical Australia (Critically Endangered)
- Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland (Endangered)
- White Box-Yellow Box – Blakely’s Red Gum Grassy Woodland and derived Native Grassland (Critically Endangered)

None of these TECs were observed to occur on the subject site.

6.1.4 Wetlands of International Significance (Ramsar)

The site is within the Ramsar-listed Moreton Bay wetlands catchment. The proposed development is not considered to represent any likely impact upon these wetlands because of the small scale and lineal nature of the proposed impact corridor, and the areas of development that already exist between this site and the wetlands.

6.1.5 Listed threatened and migratory species

Several fauna species listed as threatened or migratory under the EPBCA were determined to potentially occur within the site.

The site is mapped as containing Koala habitat, and favoured koala food trees *Eucalyptus tereticornis* and *Eucalyptus siderophloia* were recorded as part of vegetation surveys. These favoured koala food trees were searched for signs of koala presence as part of the ecological surveys described in Section 5 of this report. No visible signs of Koala presence were detected on site during ecological fauna surveys (visual, scats, scratches). No recorded koala sightings were found within 2km of the subject site on either the ALA database. The COCG flora and fauna database searches shows one record of Koala located within 2km of the impact corridor. Preferred Koala food trees such as *Eucalyptus tereticornis* and *Eucalyptus siderophloia* are present on the site, however largely as part of a limited small patch of vegetation located on Lot 4 on WD3607. The proposed impact corridor will affect an area of less than 2Ha of koala habitat. Therefore, according the EPBC Act Referral Guidelines for Koala, the scale clearing within the proposed impact corridor is not considered significant enough to require referral from EPBC Act Koala matters.

As detailed in Section 5.3.3 of this report, some other threatened and migratory species were noted to have the potential to occur within the wetland area that occurs to the north of the

proposed impact corridor. This area outside of the proposed sewer impact corridor and therefore no impact on these species (if present) is anticipated.

In summary, no threatened or migratory species were observed on site, and the area of palustrine wetland habitat, which has been assessed as most likely place to provide habitat for threatened and migratory species that may occur in the area, is not proposed to be impacted by the sewer line. In addition, the proposed impact corridor is limited in width to 10m wide, and traverses' areas already largely disturbed areas without native vegetation and viable habitat for native species. Therefore, it is considered that the proposed impact corridor required for installing the sewer line will not have an impact on any threatened or migratory species.

As such there are no matters of national environmental importance present on the site which will require referral to the Department of Environment for assessment.

6.2 State Legislation

6.2.1 Threatened species

The NCA categorises flora and fauna that are Presumed Extinct, Endangered, Vulnerable, Near Threatened and restricted in Queensland. It outlines the reasons for their significance and details the declared management intent and the principles to be observed in any taking and use for each group. No threatened flora or fauna species were detected on the subject site. As discussed in previous section, no evidence of Koala presence was observed on the subject site.

6.2.2 Protected Plants under the Nature Conservation Act

As discussed in 6.2.1, no threatened flora species were detected on in or adjacent to the impact corridor. The entirety of the impact corridor also sits wholly outside of the protected plant flora survey trigger map. Therefore, no protected plant flora survey or permits are required. The extent of protected plant mapping outside of the impact corridor is shown in the state environmental constraints map shown at the end of this section.

6.2.3 Vegetation Management Act 1999

The VMA identifies native vegetation in Queensland and outlines management requirements for this vegetation. The impact area is mapped as containing Category B vegetation, which is described Least Concern RE's 12.11.5/12.11.24. Therefore, a referral to the State Assessment Referral Agency (SARA) for Vegetation Management matters and assessment against SDAP

Code 16 is required for clearing of this area. This will also be considered as part of the assessment of the proposed development against SDAP Code 16.

While the remainder the vegetation within the proposed impact corridor is mapped as Category X (non-remnant vegetation), due it being within road reserve, all native vegetation within these areas is also considered to be assessable, unless an exemption applies. If authorisation for clearing in this area is obtained by DTMR then clearing of Category X areas within the proposed sewer corridor may be considered exempt for the purposes of the Vegetation Management Act. The area of Category B Least Concern remnant vegetation is shown within the State Environmental Constraint Map at the end of this section.

6.2.4 Fish Habitat Waterway

The site is not mapped as containing a mapped waterway for waterway barrier works.

6.2.5 South East Queensland Koala Habitat Areas

On 7 February 2020, The Nature Conservation and Other Legislation (Koala Protection) Amendment Regulation commenced. This regulation implemented new mapping of Koala Habitat Areas and Priority Koala Areas, and introduced strict new clearing restrictions, prohibiting clearing of koala habitat areas within Koala Priority Areas, and a new state referral trigger for any clearing of mapped Koala Habitat Areas outside of Koala Priority Areas.

The subject site is not located within a Koala Priority Area, therefore there is no prohibition on clearing Koala Habitat Areas.

The site does contain an area of mapped Koala Habitat located on Lot 4 on WD3607. The proposed sewer impact corridor will require clearing of this mapped koala habitat. Therefore, a referral to SARA for clearing of koala habitat areas and assessment against SDAP Code 25 is required for clearing within this area. The area of mapped koala habitat is shown within the State Environmental Constraint Map at the end of this section.

6.2.6 State Planning Policy

The Queensland Government implemented the State Planning Policy (SPP) in December 2013 to bring all matters of state interest in relation to land use planning and development into one overarching document. The SPP replaced several state planning policies which previously existed.

The SPP is intended to inform local governments in developing and amending local planning schemes and assessing development applications. It is also intended to assist developers in the preparation of development applications.

As planning schemes in Queensland are updated to reflect and incorporate matters of state interest, the SPP only needs to be specifically addressed in cases where planning schemes have not yet been updated. Gold Coast City Council has incorporated the appropriate elements of the SPP into the City Plan Version 7. It is therefore considered that addressing state interests is adequately catered for in the following Local Legislation section of this report.

6.2.7 State Legislation Summary

No threatened flora or fauna species were observed on site during ecological surveys. However, the proposed sewer corridor will require referral to DARR for Vegetation Management and Koala Habitat matters. High Risk Protected Plant Flora Survey trigger mapping does occur nearby, however the proposed sewer impact corridor is outside of the mapped high risk protected plant areas. Therefore, no additional protected plant survey or permit is required. The state environmental constraints discussed above are shown in the the State Environmental Constraint Map below, and responses to the relevant SWAP Codes are contained within Appendix 6.

DRAFT

Legend

--- EXT SEWER Extent of Works

PROPOSED SEWER LINE

— Micro-tunnelling

— Open Trench

— Underbore

▨ Koala Habitat Area

■ Protected Plant Flora Survey Trigger Map

Vegetation Management Regional Ecosystem Map

□ non_remnant

■ rem_leastc

■ water

□ DCDB

Google Satellite

NOTE: Plan for Concept Design Only.
Final alignment and installation
method is subject to detailed design
and confirmation of existing services
alignments and depths.

Frasers Property
(Australia) Pty Ltd

Pacific Motorway and
Stapylton Jacobs Well Road,
Stapylton

Lot: 4; 3
Plan: WD3607; SP139664
Parish:
County:
Local Authority: City of Gold Coast Council
Level Datum: MGA

Associated Consultants:

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	30-04-20	ORIGINAL ISSUE	KT	MG
Issue	Date	Description	DRN	

Scale at A3: 1:2500

Date: 30-04-2020

Design: KT
Drawn: KT
Checked: MG

Drawing Title:

State Environmental Constraint
Map

Drawing No:
5941 ENV SEC 00

0 100 200 m



6.3 Local Government Legislation

6.3.1 City of Gold Coast Council City Plan

The impact corridor lies within the City of Gold Coast City Plan jurisdiction. The freehold lot 4 on WD3607 is zoned as 'Open Space' within the Gold Coast City Plan Version 7. The site is constrained by ecological aspects of the Planning Scheme relevant to the subject site which are discussed in the following sections.

6.3.2 Planning and development constraint overlays

The City Plan Maps as found in the Gold Coast City Plan Version 7 indicate that the free hold Lot 4 on WD3607 is mapped with several environmental overlays including:

- Environmental Significance – vegetation management
- Environmental Significance – wetlands and waterways

Environmental Significance – Vegetation Management

The sewer impact corridor contains mapped General Priority Vegetation areas. The Local Environmental Constraints Map located at the end of this section shows the General Priority Vegetation areas which are to be impacted by the sewer corridor. The small areas of native vegetation proposed to be removed by the sewer corridor have been appropriately detailed in the Vegetation Management Plan. A response to the Environmental Significance Code is provided in Appendix 5.

Environmental Significance – Wetlands and Waterways

The proposed sewer corridor is mapped as traversing one minor waterway (see Local Environmental Constraints Map). Ecological surveys of this area indicate that the waterway branch coming from under Stapylton Jacobs Well Road and into Lot 3 on SP139664 is more accurately described as a heavily modified drainage line that predominantly contains pasture grasses and a clump of *Lantana camara*. See photos of mapped water way line below:

Photo of Mapped Waterway: Looking North centred on waterway line



Photo of Mapped Waterway: Looking East at culverts under Stapylton Jacobs Well Road



Photos of Mapped Waterway: Highly modified upstream section on the other side of Stapylton Jacobs Well Road



A mapped locally significant wetland area also occurs to the north of the proposed sewer corridor (see Local Environmental Constraint Map). Ecological surveys of this area indicate that it is accurately mapped as a locally significant wetland. The proposed sewer corridor extent of works is located outside of the wetland area by a minimum distance of 35m.

A response to the Environmental Significance Code addressing the Wetlands and Waterways Code is provided in Appendix 5.

6.3.3 Local Legislation Review Summary

Desktop analysis of the site revealed several possible ecological elements on which 'ground truthing' investigations were focused.

Several local environmental considerations were mapped over the subject site within the Gold Coast City Plan Version 7 mapping. These values are shown in the mapped of local environmental constraints continued below in the Local Environmental Constraint Map. The mapped minor waterway line was confirmed on the ground to consists of culverts channelling the significantly modified drainage line from the southern side of Stapylton Jacobs Well Road. The locally significant wetland was found to be accurately mapped but located well outside of the proposed sewer extent of works zone. Responses to the relevant local government overlay codes have been provided within Appendix 5.

DRAFT

Legend

EXT SEWER Extent of Works

PROPOSED SEWER LINE

Micro-tunnelling

Open Trench

Underbore

COGC Overlays

COGC_Wetlands and Waterways Overlay

COGC_Vegetation Management Overlay

General priority vegetation

Medium priority vegetation

COGC_Local Significant Wetlands

DCDB

Google Satellite

NOTE: Plan for Concept Design Only.
Final alignment and installation
method is subject to detailed design
and confirmation of existing services
alignments and depths.

Frasers Property
(Australia) Pty Ltd

Pacific Motorway and
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Date: 30-04-2020

Design: KT
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Checked: MG

Drawing Title:

Local Environmental Constraint
Map

Drawing No:
5941 ENV LEC 00

0 100 200 m



7 Impacts

7.1 Direct Impacts

The proposed sewer impact corridor is no more than 10m wide and travels for approximately 850m in total length. The total area proposed to be impacted by the sewer corridor 8600 m², or 0.86 Ha.

The direct impacts of the sewer installation will be limited to vegetation clearing in the areas of the alignment where vegetation still exists. Of the total 8600m² proposed to be impacted, the impact corridor traverses large sections of land that is for the most part already disturbed, is adjacent to a major motorway corridor, or contains limited to no areas of native vegetation. Therefore, the proposed vegetation clearing, as further detailed in the accompanying Vegetation Management Plan, is considered to represent a very minor ecological impact.

It is noted that some sections of the sewer pipeline will be installed through micro-tunnelling and under boring. It is anticipated that action surface ground level and vegetation disturbance may be zero to minimal in these areas as a result of the installation techniques. Some root disturbance in these areas may still occur, therefore some vegetation dieback is still possible. However, the amount of vegetation cleared within these areas will be reduced compared to the areas of open trenching.

The primary area where necessary vegetation clearing will have a direct impact on the ecological values identified by this report occurs on the freehold Lot 4 on WD3607, where proposed clearing of mapped state Category B Least Concern vegetation, state Koala Habitat, and local government General Priority Vegetation areas is proposed in order to facilitate the installation of the sewer pipe section via open trenching. Table 7 on the following page summarises the proposed clearing impact areas within these ecological values.

Additional potential impacts of tree clearing works could include increased weed incursions into adjacent areas in response to disturbance caused by earth works, and increased risks of erosion and sedimentation.

Table 7: Summary of Direct Impacts

State Environmental Constraints	
Mapped Ecological Value	Impact
Mapped Category B Least Concern RE 12.11.5/12.11.24	465m ²
Koala Habitat Areas – adjusted to also include adjacent area of ground truthed koala food trees surveyed as part of accompanying Vegetation Management Plan	540 m ² containing 55 individual koala food trees
Local Constraints: City of Gold Coast – Environmental Significance Overlays	
Constraint	Impact
General Priority Vegetation	465m ²
Minor Waterway - Ground truthed on site to be highly modified drainage outlet and does not contain native vegetation.	10m wide disturbance corridor across mapped waterway line

7.2 Impacts on Threatened Flora

No threatened flora were observed on the subject site. As a result, no impacts on threatened flora are anticipated.

7.3 Impacts on Threatened Fauna

No threatened fauna were observed on the subject site. Areas where threatened fauna would most likely be found, such as within the areas associated with the locally significant wetland area are proposed to be retained.

As discussed in Section 7.1, a small area of vegetation proposed to be cleared is mapped as habitat for the threatened species, Koala (*Phascolarctos cinereus*). In particular, the area where clearing of mapped and ground truthed koala habitat containing *Eucalyptus tereticornis* and *Eucalyptus siderophloia* occurs, is where open trenching is proposed on Lot 4 on WD3607.

The total clearing area of ground truthed Koala habitat is limited to approximately 540m² containing 55 individual koala food trees.

No scats, scratches or other visual evidence of koalas being present on the site was observed throughout the ecological surveys. No records of koala were found within 2km of the impact area. Therefore, it is considered that the proposed impact corridor will not have a significant residual impact on Koala's.

Consequently, it is not considered that the proposed development will represent a threat to any threatened fauna.

7.4 Impacts on Habitat Connectivity

The proposed sewer pipeline corridor is not considered to impact on the connectivity of any ecologically significant areas. This is due to the limited area of disturbance required (<10m wide), and because the impact corridor travels through an area adjacent to major road corridors with little native vegetation remaining.

Therefore, the proposed sewer pipeline will not have an impact on the connectivity of habitat areas through the impact area and into adjacent properties. The ability of fauna to move through the site into other areas will be maintained.

7.5 Impacts on Wetland and Waterway Areas

As discussed in Section 6.3, Council Gold Coast City Plan Overlays shown an area of locally significant wetland occurring to the north of the proposed sewer extent of works corridor, and a minor waterway mapped as running across the sewer corridor in one section.

Ecological surveys of the mapped waterway indicate that the waterway branch coming from under Stapylton Jacobs Well Road and into Lot 3 on SP139664 is more accurately described as a heavily modified drainage line that predominantly contains pasture grasses and a clump of *Lantana camara* in the area where open trenching for the sewer installation will occur. The area of disturbance will be limited to 10m wide, directly adjacent to Stapylton Jacobs Well Road and the existing culverts. Therefore, it is considered that the proposed disturbance of this area will have a negligible impact on the surrounding ecological values.

As discussed in Section 6.3, a mapped locally significant wetland area also occurs to the north of the proposed sewer corridor. Ecological surveys indicate that this area is accurately mapped as a locally significant wetland. The proposed sewer corridor extent of works is located outside of the wetland area by a minimum distance of 35m. Given the surrounding modified pastureland is already cleared of native vegetation, and the limited impact area of the sewer corridor, is

considered that this minimum buffer distance of 35m will be more than adequate to protect the ecological values of the locally significant wetland.

7.6 Impacts on Adjacent Ecological Values

Impacts to retained vegetation or ecological values adjacent to the sewer extent of works corridor will be prevented through the vegetation protection measures identified in the submitted Vegetation Management Plan. Appropriate Stormwater Management and Erosion and Sediment Control measure discussed in the Mitigation Measures section below will also help ensure that additional impacts on retained vegetation and adjacent wetland areas do not occur.

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8 Mitigation Measures

8.1 Koala Habitat Clearing

There is the potential for SARA to require that some compensatory planting or financial offset be provided for the clearing of 55 individual koala food trees within the 540m² of mapped Koala Habitat Areas under the new state SDAP Code 25. This will be confirmed following the assessment process once the Operational Works application for Vegetation Clearing is referred to the State Assessment Referral Agency.

Chapter 2A of the Queensland Environmental Offsets Policy states that a significant residual impact on koala habitat in SEQ is described in the State guidelines to be the removal of one non-juvenile koala habitat tree.

Based on this definition the proposed clearing of 55 individual koala habitat trees would constitute a significant residual impact and require an offset to be provided.

The overall impact of the proposed disturbance corridor is not considered to be significant, due to the large amount of already disturbed and cleared area within the corridor, the proximity of the corridor to major road corridors, and the limited amount of native vegetation proposed to be removed. In addition, large sections of the corridor are utilising under boring or micro-tunnelling techniques which may reduce the amount of vegetation that is cleared on the ground to install the sewer.

8.2 Significant Flora

No EPBC or NCA listed significant flora were detected on the subject site. Consequently, mitigation measures for significant flora are not considered to be required.

8.3 Significant Fauna

No EPBC or NCA listed significant fauna were detected on the subject site. The most likely potential habitat for threatened fauna located on the subject is proposed to fully retained. Consequently, additional mitigation measures for significant fauna are not considered to be required.

8.4 Habitat Connectivity

The proposed sewer pipeline will not have an impact on the connectivity of habitat areas due to the limited width of the impact corridor, and the limited extent of disturbance. The ability of fauna to move through the site into other areas will be maintained. Therefore, it is considered that no additional mitigation measures are required to maintain habitat connectivity values.

8.5 Vegetation Management Plan

A Vegetation Management Plan (VMP) has been prepared and submitted in association with this Ecological Report to support the Operational Works component of the application. The VMP has clearly identified the vegetation proposed to be removed and associated habitat values. The VMP has specified the process for how clearing is to occur, and the measures required to ensure protection of the vegetation which is to be retained.

8.6 Fauna Management

A Fauna Management Plan (FMP) will be required to further detail the measures to be implemented to ensure fauna found within the proposed clearing area are safely relocated out of the clearing zone into appropriate nearby suitable habitat. In addition, a preclearing survey will be required to more specifically identify what fauna are likely to be present within the clearing area close to the time of clearing. A suitably qualified Fauna Spotter/Catcher will be required to supervise all clearing activities on site during the vegetation removal phase of the project.

8.7 Sediment and Erosion Control

Due to the location of the proposed development adjacent to wetland areas, water runoff from the proposed development will need to be appropriately managed in accordance with a Sediment and Erosion Control plan. This will ensure that there are no adverse impacts on adjacent retained vegetation or wetlands area both during, and following construction of the proposed development. Details for the proposed sediment and erosion control measures are contained within the engineering plans to be submitted as part of the Operational Works – Civil Works application.

9 Conclusion

Gassman Development Perspectives has been engaged by Frasers Property Australia Pty Ltd to prepare an ecological assessment report in support of the installation of the trunk gravity sewer conditioned by City of Gold Coast Council in ROL201800079. The proposed trunk gravity external sewer line is located adjacent to Staplyton Jacobs Well Road, the Pacific Motorway, and through the front portion of freehold Lot 4 on WD3607 and Lot 3 on RP139664.

This report has assessed the ecological values on the subject site, including the habitat values for flora and fauna, and corridor values that represent movement opportunities for fauna within and adjacent to the subject site. The proposed development on the site is assessed in the context of relevant Commonwealth, State and Local laws and regulations.

The site was observed to contain limited native vegetation species, and none of these are considered EPBC listed species. In addition, no significant impact on commonwealth threatened species or habitat values are proposed. Therefore, this application does not require referral to the Department of Environment.

Several environmental considerations were raised as occurring over the subject site by City of Gold Coast and the State Assessment Referral Agency (SARA). These considerations have been addressed within the responses to the codes within Appendices 5 and 6.

In total, approximately 0.86 Ha is proposed to be disturbed in order to complete the trunk gravity sewer installation. Of this, many areas do not contain any native vegetation. The proposed sewer extent of works and sewer installation methodologies will adequately preserve and protect the ecological values currently present around the proposed impact corridor, whilst delivering a positive development outcome for the area.

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Appendix 1 – Proposed Sewer Installation Plan

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Legend

- EXTENT OF WORKS ---
- PROPOSED SEWER LINE
- Micro-tunnelling —
- Open Trench —
- Underbore —
- DCDB
- Google Satellite

NOTE: Plan for Concept Design Only. Final alignment and installation method is subject to detailed design and confirmation of existing services alignments and depths.

Frasers Property
(Australia) Pty Ltd

Pacific Motorway and
Stapylton Jacobs Well Road,
Stapylton

Lot: 4; 3
Plan: WD3607; SP139664
Parish:
County:
Local Authority: City of Gold Coast Council
Level Datum: MGA

Associated Consultants:

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Issue	Date	Description	DRN	CHK

Scale at A3: 1:2500

Date: 30-04-2020

Design: KT
Drawn: KT
Checked: MG

Drawing Title:
Concept Plan
Gravity Sewer Installation Plan

Drawing No:
5941 ENV SIT 00

0 75 150 m



Appendix 2 – List of Flora Observed on Site

Scientific Name	Common Name	Status
<i>Acacia disparrima</i> subsp. <i>disparrima</i>	Hickory Wattle	
<i>Acacia podalyriifolia</i>	Silver Wattle	
<i>Acacia leiocalyx</i>	Early Black Wattle	
<i>Ageratum houstonianum</i>	Blue Billygoat Weed	*
<i>Allocasuarina littoralis</i>	Black She Oak	
<i>Alphitonia excelsa</i>	Soap Tree	
<i>Araucaria cunninghamii</i>	Hoop Pine	
<i>Bidens Pilosa</i>	Cobblers Pegs	*
<i>Chloris virgata</i>	Feather Grass Rhodes Grass	*
<i>Commelina benghalensis</i>	Hairy Commelina	*
<i>Corymbia citriodora</i> subsp. <i>variegata</i>	Spotted Gum	
<i>Corymbia intermedia</i>	Pink Bloodwood	
<i>Corymbia tessellata</i>	Morletton Bay Ash	
<i>Corymbia torelliana</i>	Cadaghi	*
<i>Cupaniopsis anacardioides</i>	Tuckeroo	
<i>Cyperus papyrus</i>	Papyrus	*
<i>Erythrina crista-galli</i>	Cockspur Coral Tree	*
<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	
<i>Eucalyptus siderophloia</i>	Grey Ironbark	
<i>Eucalyptus tereticornis</i>	Queensland Blue Gum	
<i>Ficus watkinsonia</i>	Strangler Fig	
<i>Ficus obliqua</i>	Small-leaved Fig	
<i>Gomphocarpus physocarpus</i>	Balloon Cotton Bush	*

Scientific Name	Common Name	Status
<i>Hypolepis muelleri</i>	Harsh Ground Fern	
<i>Imperata cylindrica</i>	Blady Grass	
<i>Ipomoea indica</i>	Morning Glory	*
<i>Lantana camara</i>	Lantana	*
<i>Leucaena leucocephala</i>	Leucaena	*
<i>Lomandra longifolia</i>	Lomandra	
<i>Macroptilium atropurpureum</i>	Siratro	*
<i>Melaleuca quinquenervia</i>	Coastal Paperbark	
<i>Melaleuca viminalis</i>	Weeping Bottlebrush	
<i>Melaleuca linariifolia</i>	Snow in Summer	
<i>Melaleuca salicina</i>	Willow Bottlebrush	
<i>Melinis repens</i>	Red Natal Grass	*
<i>Mimosa diplotricha</i> var. <i>diplotricha</i>	Giant Sensitive Plant	*
<i>Parsonia straminea</i>	Monkey Ropevine	
<i>Passiflora foetida</i>	Money Passionflower	*
<i>Pinus elliottii</i>	Slash Pine	*
<i>Senecio madagascariensis</i>	Fireweed	*
<i>Setaria sphacelata</i> syn. <i>Setaria anceps</i> , <i>Setaria splendida</i>	South African pigeon grass	*
<i>Solanum chrysotrichum</i> ssp. <i>Solanum hispidum</i>	Giant Devils Fig	*
<i>Solanum mauritianum</i>	Wild Tobacco	*
<i>Solanum seaforthianum</i>	Brazilian Nightshade	*
<i>Sphagneticola trilobata</i>	Singapore Daisy	*
<i>Typha orientalis</i>	Bulrush, Cumbungi	

* = exotic species

Appendix 3 – Vegetation Community Map

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Legend

EXT SEWER Extent of Works

PROPOSED SEWER LINE

Micro-tunnelling

Open Trench

Underbore

EXT SEW

EXT SEWER_Vegetation Communities

Disturbed and planted roadside vegetation

Eucalyptus tereticornis Open Woodland

Palustrine Wetland

DCDB

Google Satellite

NOTE: Plan for Concept Design Only.
Final alignment and installation
method is subject to detailed design
and confirmation of existing services
alignments and depths.

Frasers Property
(Australia) Pty Ltd

Pacific Motorway and
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Issue	Date	Description	DRN	CHK

Scale at A3: 1:2500

Date: 30-04-2020

Design: KT
Drawn: KT
Checked: MG

Drawing Title:

Vegetation Community Map

Drawing No:
5941 ENV VCM 00

0 100 200 m



Appendix 4 – Desktop Searches

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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: 23/04/20 16:22:10

[Summary](#)

[Details](#)

[Matters of NES](#)

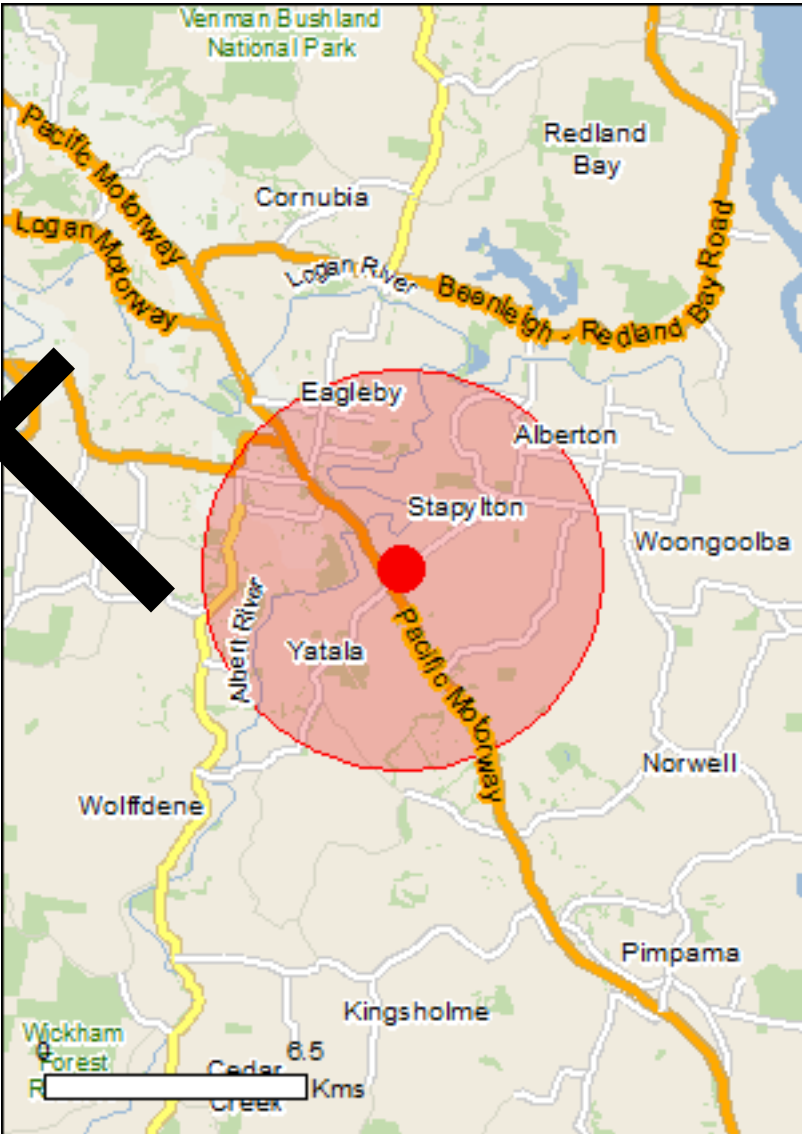
[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

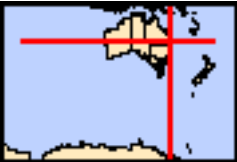
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[Coordinates](#)

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:	72
Listed Migratory Species:	46

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 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:	50
Whales and Other Cetaceans:	2
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:	None
Regional Forest Agreements:	None
Invasive Species:	40
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)		[Resource Information]
Name	Proximity	
Moreton bay	Within 10km of Ramsar	

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
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may 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 likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat likely to 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 habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Erythrotriorchis radiatus Red Goshawk [942]	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
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	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
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
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta cauta Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Species or species habitat 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 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

Name	Status	Type of Presence
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]	Vulnerable	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area
Fish		
Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat may occur within area
Maccullochella mariensis Mary River Cod [83806]	Endangered	Translocated population known to occur within area
Frogs		
Mixophyes fleayi Fleay's Frog [25960]	Endangered	Species or species habitat likely to occur within area
Insects		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
Phyllodes imperialis smithersi Pink Underwing Moth [86084]	Endangered	Species or species habitat may occur within area
Mammals		
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
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat likely to 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 likely to occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to 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		
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat may occur within area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Baloghia marmorata Marbled Balogia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat may occur within area
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
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat may occur within area
Diploglottis campbellii Small-leaved Tamarind [21484]	Endangered	Species or species habitat may occur within area
Endiandra floydii Floyd's Walnut [52955]	Endangered	Species or species habitat likely to occur within area
Fontainea venosa [24040]	Vulnerable	Species or species habitat known to occur within area
Gossia gonoclada Angle-stemmed Myrtle [78866]	Endangered	Species or species habitat likely to occur within area
Lepidium peregrinum Wandering Pepper-cress [14035]	Endangered	Species or species habitat may occur within area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [11326]	Vulnerable	Species or species habitat known 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
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat known to occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area
Planchonella eerwah Shiny-leaved Condoo, Black Plum, Wild Apple [17340]	Endangered	Species or species habitat likely to occur within area
Randia moorei Spiny Gardenia [10577]	Endangered	Species or species habitat known to occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area
Sophora fraseri [8836]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat 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	Species or species habitat 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	Species or species habitat known to occur within area
Saiphos reticulatus Three-toed Snake-tooth Skink [88328]	Vulnerable	Species or species habitat likely to occur within area
Sharks		
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding 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 may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat may 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

Name	Threatened	Type of Presence
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		habitat likely to occur within area Species or species habitat likely 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
Thalassarche cauta 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*	Species or species habitat likely to occur within area
Migratory Marine Species		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat 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	Species or species habitat 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
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species

Name	Threatened	Type of Presence
Orcaella heinsohni Australian Snubfin Dolphin [81322]		habitat known to occur within area Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely 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]	Vulnerable	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 known 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
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely 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 may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		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
Pandion haliaetus Osprey [952]		Species or species

Name	Threatened	Type of Presence
Pluvialis fulva Pacific Golden Plover [25545]		habitat known to occur within area Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat 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]	DRAFT	Species or species habitat known to occur within area	
Anous stolidus Common Noddy [825]		Species or species habitat may 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]		Species or species habitat known to occur within area	
Ardea ibis Cattle Egret [59542]		Breeding likely to occur within area	
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	
Calidris canutus Red Knot, Knot [855]		Endangered	Species or species habitat likely 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 may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species	

Name	Threatened	Type of Presence
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	habitat known to occur within area 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 likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	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
Limosa lapponica Bar-tailed Godwit [844]		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
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 known 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

Name	Threatened	Type of Presence
Pachyptila turtur Fairy Prion [1066]		within area Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area
Puffinus griseus Sooty Shearwater [1024]		Species or species habitat may 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 known to occur within area
Thalassarche cauta 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*	Species or species habitat likely to occur within area
Thinornis rubricollis rubricollis Hooded Plover (eastern) [66726]	Vulnerable	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur

Name	Threatened	Type of Presence
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	within area Species or species habitat 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	Species or species habitat known to occur within area

Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area

Extra Information

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 Resource 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

Name	Status	Type of Presence
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 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
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		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
Asparagus africanus Climbing Asparagus, Climbing Asparagus Fern [66907]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		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

Name	Status	Type of Presence
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		habitat may occur within area Species or species habitat likely to occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913] Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		 Species or species habitat likely to occur within area Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		 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] Opuntia spp. Prickly Pears [82753]		 Species or species habitat likely to occur within area 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
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		 Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calandrinia and S.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 Water Moss, Kariba Weed [13665]		 Species or species habitat likely to occur within area
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

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

-27.73416 153.2312

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.



Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point

Species: All

Type: Native

Status: Rare and threatened species

Records: All

Date: All

Latitude: -27.7341

Longitude: 153.2312

Distance: 5

Email: ktibbles@gassman.com.au

Date submitted: Thursday 23 Apr 2020 16:41:45

Date extracted: Thursday 23 Apr 2020 16:50:02

The number of records retrieved = 15

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	birds	Apodidae	<i>Hirundapus caudacutus</i>	white-throated needletail		V	V	4
animals	birds	Ardeidae	<i>Botaurus poiciloptilus</i>	Australasian bittern		E	E	1
animals	birds	Falconidae	<i>Falco hypoleucos</i>	grey falcon		V		1
animals	birds	Podargidae	<i>Podargus ocellatus plumiferus</i>	plumed frogmouth		V		1
animals	birds	Psittacidae	<i>Lathamus discolor</i>	swift parrot		E	CE	1
animals	birds	Rostratulidae	<i>Rostratula australis</i>	Australian painted snipe		E	E	7
animals	birds	Scolopacidae	<i>Calidris ferruginea</i>	curlew sandpiper		E	CE	2
animals	insects	Papilionidae	<i>Ornithoptera richmondia</i>	Richmond birdwing		V		1
animals	mammals	Phascolarctidae	<i>Phascolarctos cinereus</i>	koala		V	V	166
plants	land plants	Apocynaceae	<i>Marsdenia coronata</i>	slender milkvine		V		4/4
plants	land plants	Euphorbiaceae	<i>Mallotus megadontus</i>			V		2/2
plants	land plants	Myrtaceae	<i>Melaleuca irbyana</i>			E		2/2
plants	land plants	Myrtaceae	<i>Gossia gonoclada</i>			E	E	2/2
plants	land plants	Proteaceae	<i>Macadamia integrifolia</i>	macadamia nut		V	V	2/2
plants	land plants	Sapindaceae	<i>Cupaniopsis newmanii</i>	long-leaved tuckeroo		NT		1/1

CODES

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

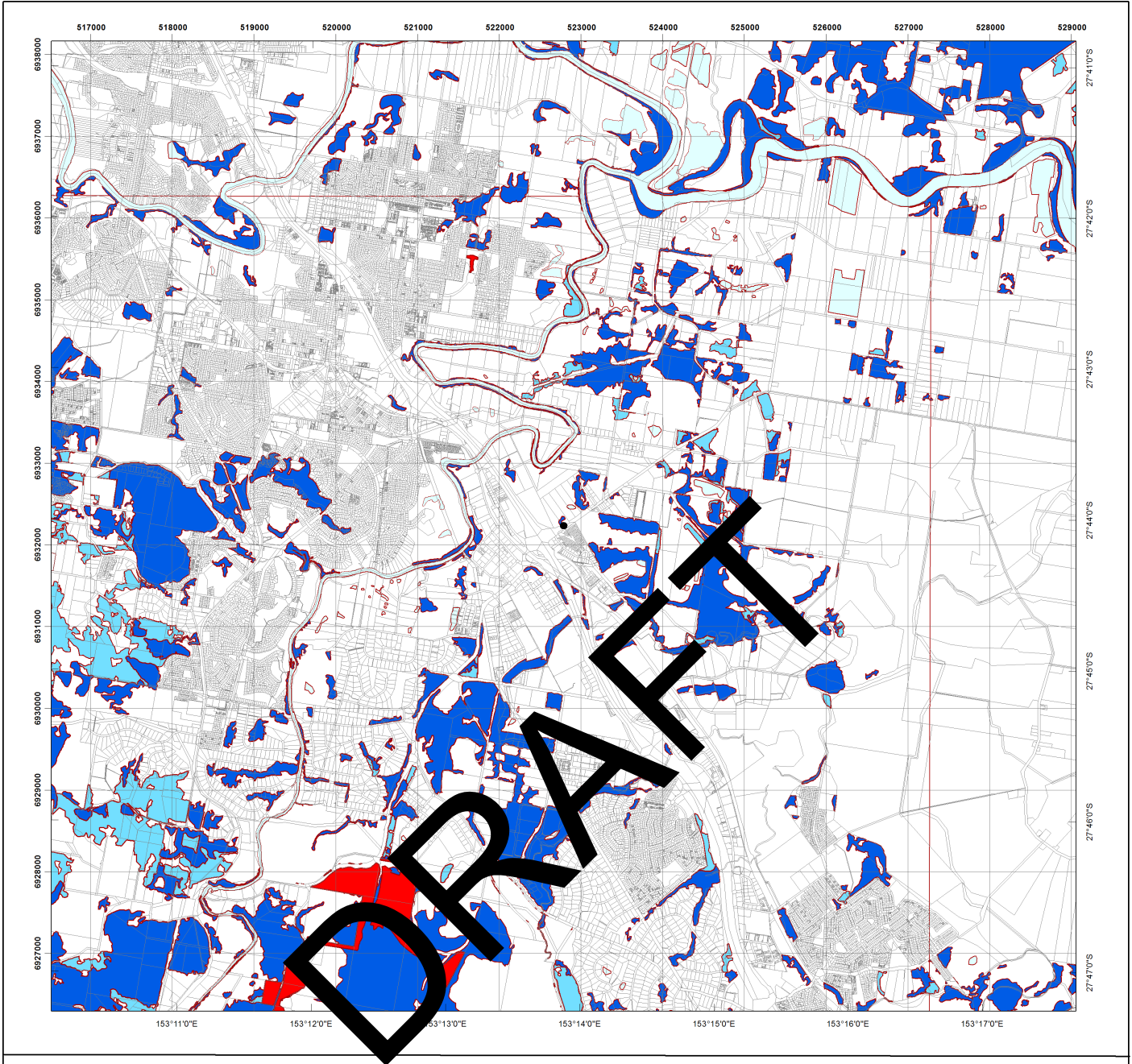
Q - Indicates the Queensland conservation status of each taxon under the *Nature Conservation Act 1992*. The codes are Extinct in the Wild (PE), Endangered (E), Vulnerable (V), Near Threatened (NT), Least Concern (C) or Not Protected ().

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 type 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.

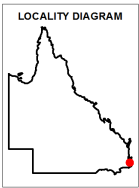
This number is output as 999 if it equals or exceeds this value.



Regulated Vegetation Management Map

Legend

- Coordinates
- 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
- Other land parcel boundaries



0 675 1,350 2,025 2,700 3,375 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.

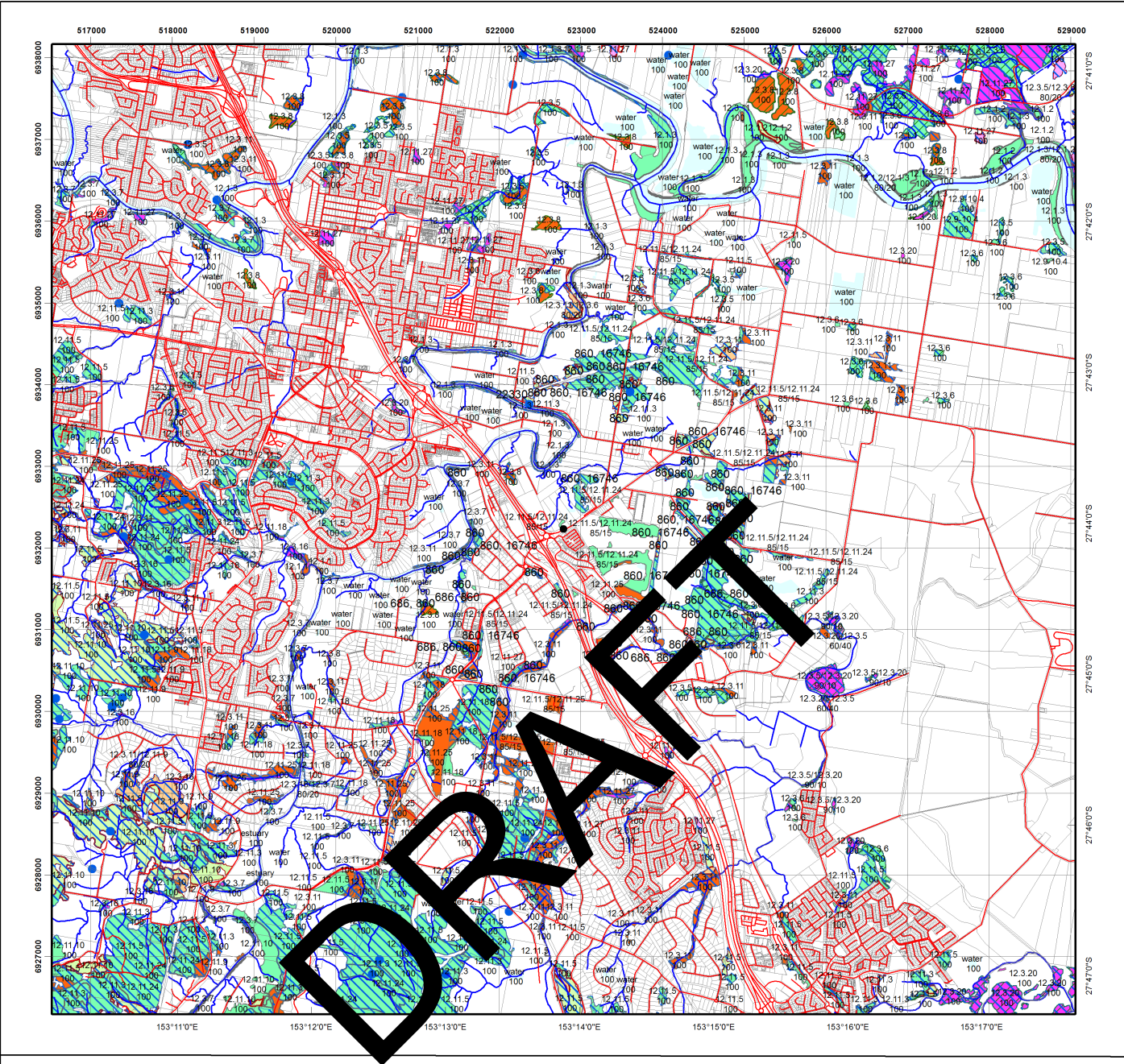
Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.dnrme.qld.gov.au or contact the Department of Natural Resources, Mines and Energy.

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

Land parcel boundaries are provided as locational aid only.

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





Vegetation Management Supporting Map

Legend

- Coordinates
- 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 or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R 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
- Category X area
- 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
- Other land parcel boundaries



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

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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.dnrm.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/>

Land parcel boundaries are provided as locational aid only.



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.dnrm.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

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
860	Phascolarctos cinereus	koala	V	SEQ: Open eucalypt forest and woodland that has: a) multiple strata layers containing Eucalyptus, Corymbia, Angophora, Lophostemon or Melaleuca trees that-at 1.3 metres above the ground-have a diameter both greater and less than 30 centimetres; and b) at least 1 of the following species: Eucalyptus tereticornis, E. fibrosa, E. propinqua, E. umbra, E. grandis, E. microcorys, E. tindaliae, E. resnifera, E. populnea, E. robusta, E. nigra, E. racemosa, E. olebra, E. exserta, E. seeana, Lophostemon confertus, E. suaveolens, Melaleuca quinquenervia. Outside SEQ: Open eucalypt forest and woodland that contains Eucalyptus and/or Corymbia. Tree species used for food varies across State and include Eucalyptus tereticornis, E. camaldulensis, E. coolabah; E. drepanophylla, E. platyphylla, E. adaphilla, E. thozetiana, E. melanophloia, E. populnea, E. citriodora, E. dealbata, E. microtheca, E. olebra, E. exserta, E. amyli, E. papuana, Corymbia melliana, E. citriodora, Melaleuca quinquenervia, M. leucandera.	Sea level to 1000m.	None	Riparian areas, plains and hill/escarpment slopes.
16746	Macadamia integrifolia	Queensland nut, macadamia nut	V	dry vine thicket; complex notophyll vine forest; Acaecarian notophyll vine forest	0 to 700 m	red to brown loam to silty clay or skeletal soil	scree slope or lower to upper hill slope often steep or along watercourse
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 to hard water. (e.g. M. quinquenervia) areas, sedge/lowland, wet and dry heathland (e.g. Banksia, 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
13637	Cupaniopsis newmanii	long-leaved tuckeroo	N	Open sclerophyll forest with understorey of closed forest species; simple notophyll to complex notophyll vine forest sometimes with Eucalyptus grandis or Lophostemon confertus emergents	0 to 1000 m	sandy alluvium or clay to clay loam soil	rocky hill slope, creek bank, river terrace
22330	Mallotus megadontus	None	V	rainforest; gallery forest	0 to 300 m	clay loam	creek bank, rocky hill slope

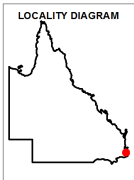
Label	Regional Ecosystem (mandatory unless otherwise specified)
860	SEQ: 11.3.2, 11.3.4, 11.3.25, 11.3.26, 11.8.2, 11.8.4, 11.8.5, 11.8.8, 11.9.9, 12.2.5, 12.2.6, 12.2.7, 12.2.8, 12.2.10, 12.3.2, 12.3.3, 12.3.4, 12.3.5, 12.3.6, 12.3.7, 12.3.9, 12.3.10, 12.3.11, 12.3.14, 12.3.18, 12.3.19, 12.3.20, 12.5.1, 12.5.2, 12.5.3, 12.5.4, 12.5.6, 12.5.7, 12.5.10, 12.5.12, 12.8.1, 12.8.8, 12.8.9, 12.8.11, 12.8.12, 12.8.14, 12.8.16, 12.8.17, 12.8.20, 12.8.24, 12.8.25, 12.9-10.1, 12.9-10.2, 12.9-10.3, 12.9-10.4, 12.9-10.5, 12.9-10.7, 12.9-10.8, 12.9-10.11, 12.9-10.12, 12.9-10.14, 12.9-10.17, 12.9-10.18, 12.9-10.19, 12.9-10.21, 12.9-10.25, 12.9-10.26, 12.9-10.27, 12.9-10.28, 12.9-10.29, 12.11.2, 12.11.3, 12.11.5, 12.11.6, 12.11.7, 12.11.8, 12.11.9, 12.11.14, 12.11.15, 12.11.16, 12.11.17, 12.11.18, 12.11.22, 12.11.23, 12.11.24, 12.11.25, 12.11.26, 12.11.27, 12.11.28, 12.12.2, 12.12.3, 12.12.5, 12.12.6, 12.12.7, 12.12.8, 12.12.9, 12.12.11, 12.12.12, 12.12.14, 12.12.15, 12.12.23, 12.12.24, 12.12.25, 12.12.28 Outside SEQ: 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, 4.4.1, 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, 9.4.3, 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, 9.11.21, 9.11.22, 9.11.23, 9.11.24, 9.11.25, 9.11.26, 9.11.27, 9.11.28, 9.11.29, 9.11.31, 9.11.32, 9.11.33, 9.11.34, 9.11.35, 9.11.36, 9.11.37, 9.11.38, 9.11.39, 9.11.40, 9.11.41, 9.11.42, 9.11.43, 9.11.44, 9.11.45, 9.11.46, 9.11.47, 9.11.48, 9.11.49, 9.11.50, 9.11.51, 9.11.52, 9.11.53, 9.11.54, 9.11.55, 9.11.56, 9.11.57, 9.11.58, 9.11.59, 9.11.62, 9.11.63, 9.11.64, 9.11.67, 9.11.68, 9.11.69, 9.11.70, 9.11.71, 9.11.72, 9.11.73, 9.11.74, 9.11.76, 9.11.77, 9.11.81, 9.11.82, 9.11.84, 9.11.85, 9.11.88, 9.11.8.11, 9.11.8.12, 9.11.8.14, 9.11.8.15, 9.11.9.1, 9.11.9.2, 9.11.9.3, 9.11.9.5, 9.11.9.6, 9.11.9.7, 9.11.9.9, 9.11.9.10, 9.11.9.11, 9.11.9.13, 9.11.9.14, 9.11.10.1, 9.11.10.2, 9.11.10.3, 9.11.10.4, 9.11.10.5, 9.11.10.6, 9.11.10.7, 9.11.10.9, 9.11.10.11, 9.11.10.12, 9.11.10.13, 9.11.11.1, 9.11.11.2, 9.11.11.3, 9.11.11.4, 9.11.11.6, 9.11.11.7, 9.11.11.8, 9.11



Protected Plants Flora Survey Trigger Map

Legend

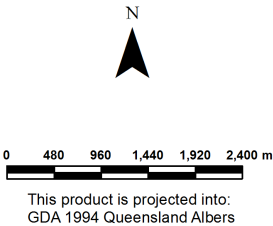
- Coordinates
- High risk area
- Cadastral line
- Property boundaries shown are provided as a locational aid only
- Freeways / motorways / highways
- Secondary roads / streets



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



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Protected plants flora survey trigger map

The protected plants flora survey trigger map identifies 'high risk areas' where endangered, vulnerable or near threatened plants are known to exist or are likely to exist. Under the *Nature Conservation Act 1992* (the Act) it is an offence to clear protected plants that are 'in the wild' unless you are authorised or the clearing is exempt, for more information see [section 89](#) of the Act.

Please see the Department of Environment and Science webpage on the [clearing of protected plants](#) for information on what exemptions may apply in your circumstances, whether you may need to undertake a flora survey, and whether you may need a protected plants clearing permit.

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.

DRAFT

State Assessment and Referral Agency

Date: 23/04/2020



Department of State Development
Manufacturing, Infrastructure
and Planning

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Matters of Interest for all selected Lot Plans

SEQ Regional Plan land use categories

Coastal area - erosion prone area

Coastal area - medium storm tide inundation area

Coastal area - high storm tide inundation area

Water resource planning area boundaries

Regulated vegetation management map (Category A and B extract)

Core koala habitat area

Key resource area - transport route separation area (Koala habitat in SEQ region)

State-controlled road

Area within 25m of a State-controlled road

Matters of Interest by Lot Plan

Lot Plan: 4WD3607 (Area: 40130 m²)

SEQ Regional Plan land use categories

Coastal area - erosion prone area

Coastal area - medium storm tide inundation area

Coastal area - high storm tide inundation area

Water resource planning area boundaries

Regulated vegetation management map (Category A and B extract)

Core koala habitat area

Key resource area - transport route separation area (Koala habitat in SEQ region)

State-controlled road

Area within 25m of a State-controlled road



State Assessment and Referral Agency

Date: 23/04/2020



Department of State Development
Manufacturing, Infrastructure
and Planning

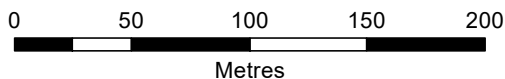
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Legend

Core koala habitat area



Core koala habitat area



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State Assessment and Referral Agency

Date: 23/04/2020



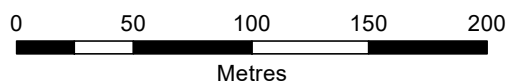
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Legend

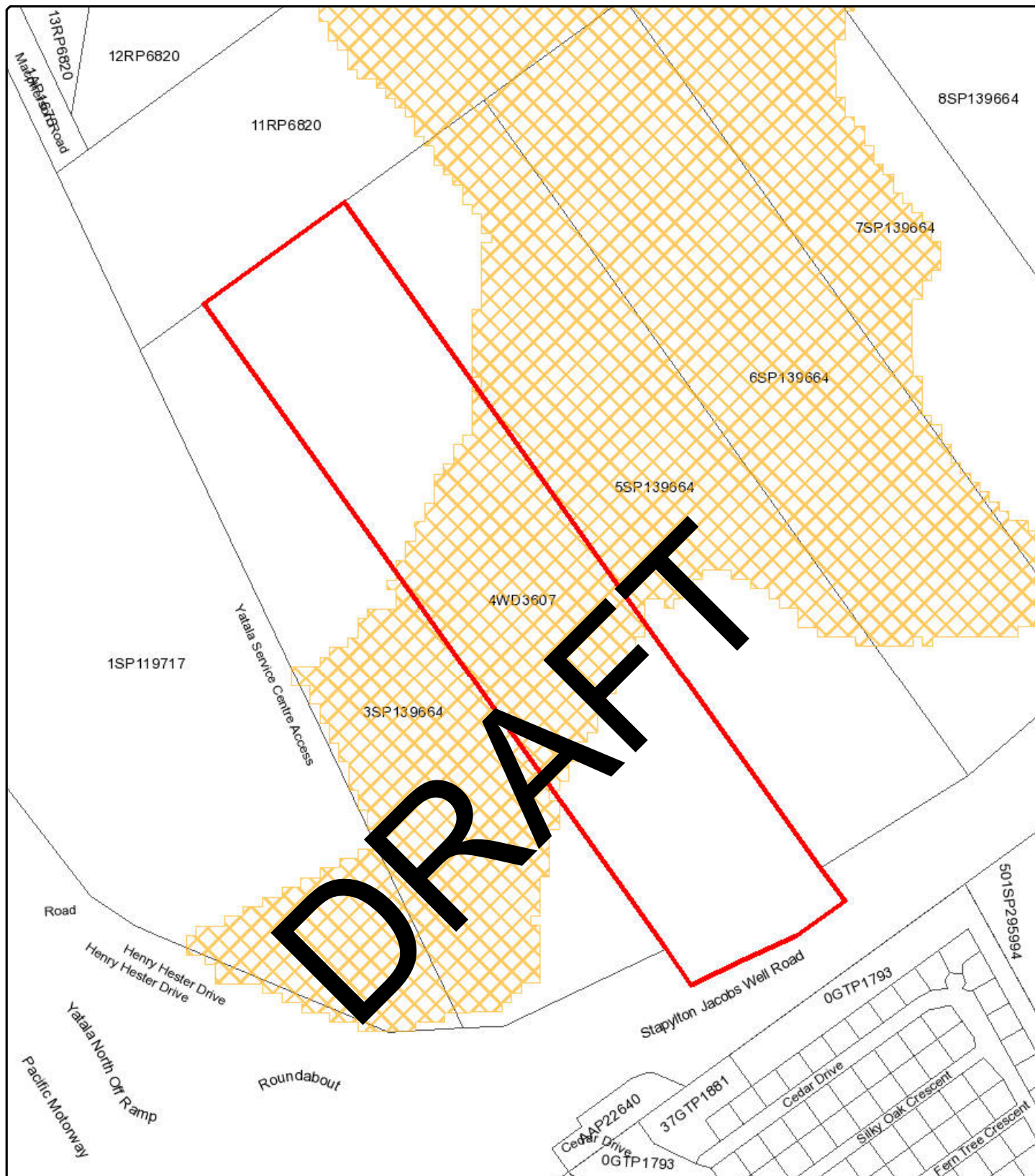
SEQ Regional Plan land use categories

- Regional Landscape and Rural Production Area
- Urban Footprint
- Rural Living Area



Disclaimer:

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State Assessment and Referral Agency

Date: 23/04/2020



Department of State Development
Manufacturing, Infrastructure
and Planning

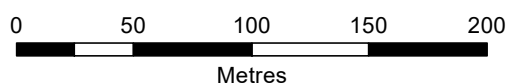
© The State of Queensland 2020.

Legend

Coastal area - erosion prone area

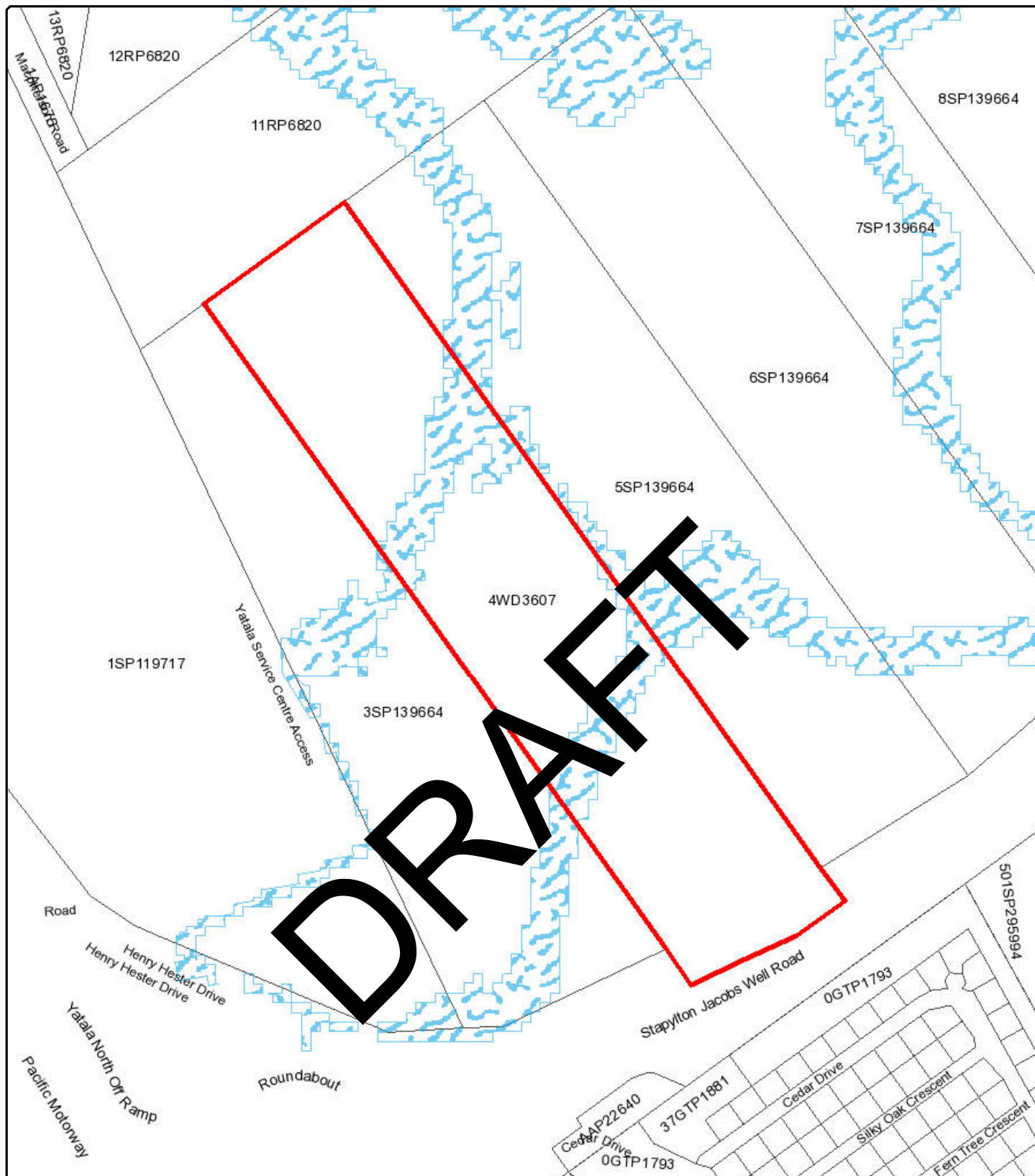


Coastal area - erosion prone area



Disclaimer:

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State Assessment and Referral Agency

Date: 23/04/2020



Department of State Development
Manufacturing, Infrastructure
and Planning

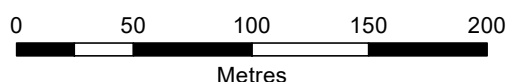
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Legend

Coastal area - medium storm tide inundation area

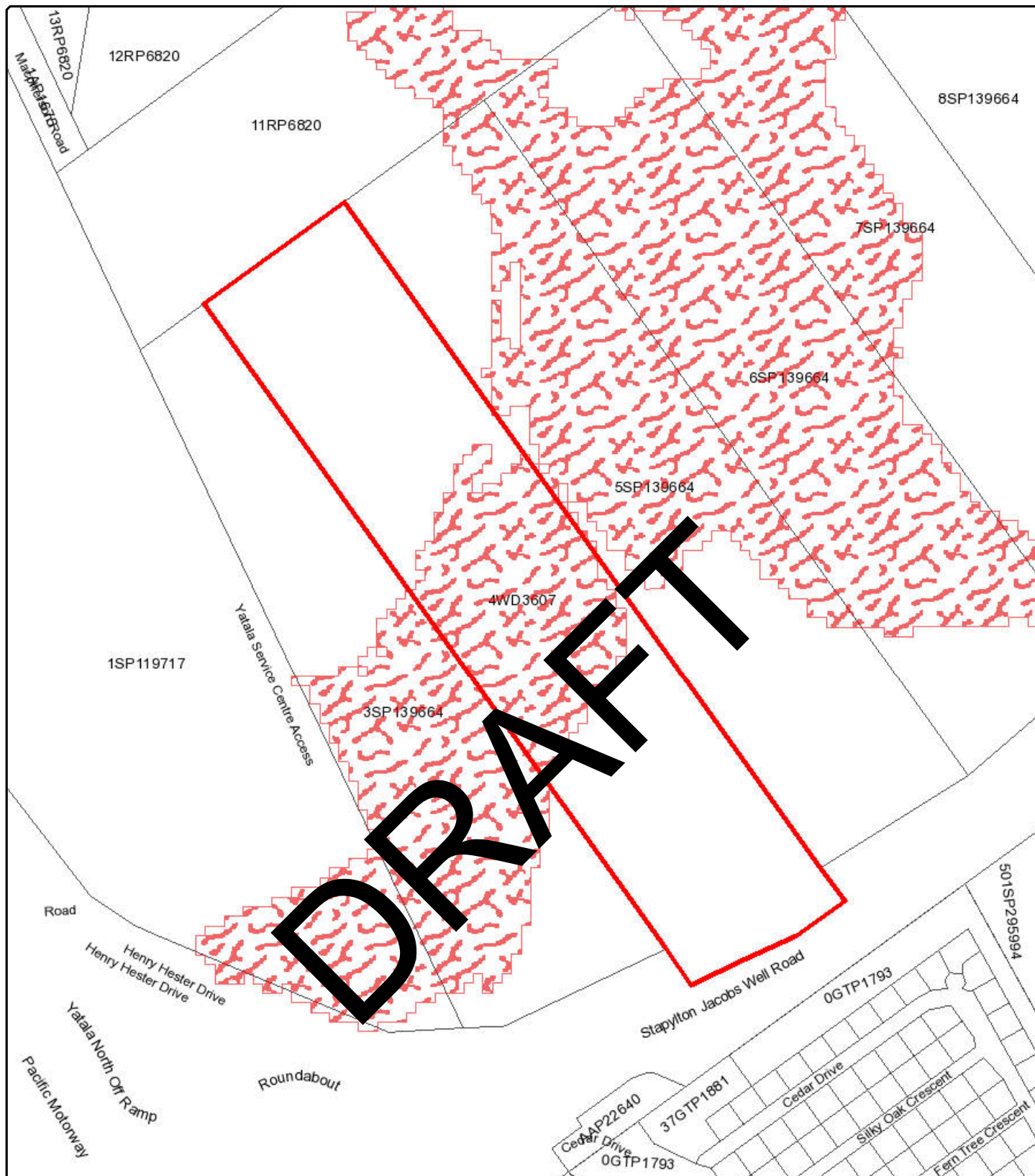


Coastal area - medium storm tide inundation area



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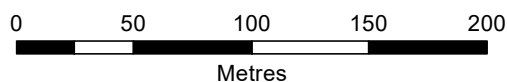
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Legend

Coastal area - high storm tide inundation area

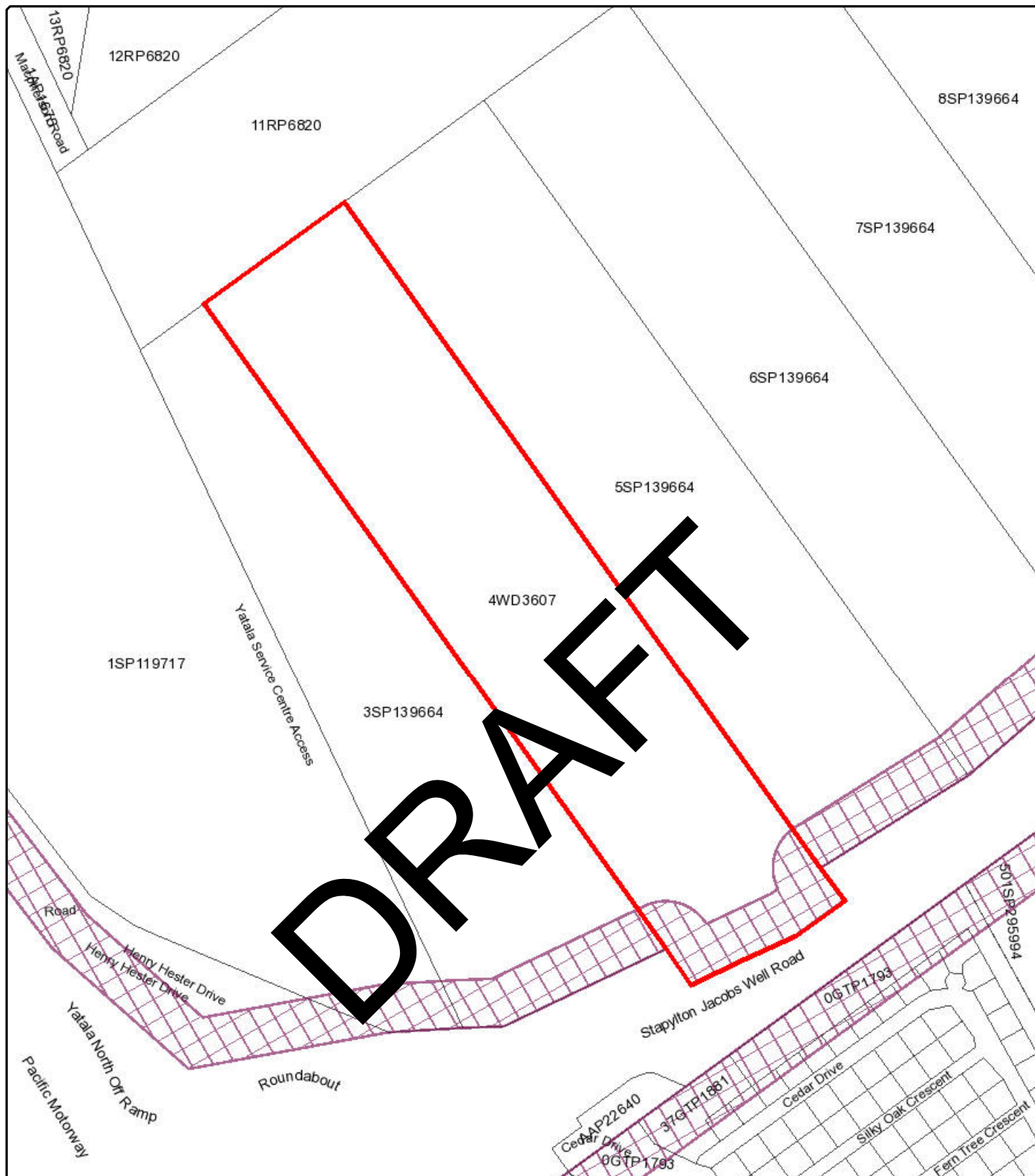


Coastal area - high storm tide inundation
area



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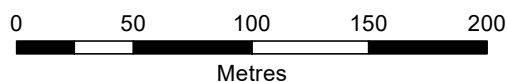
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Area within 25m of a State-controlled road



Area within 25m of a State-controlled road



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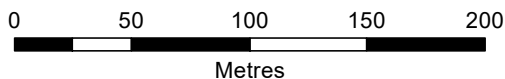
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Water resource planning area boundaries

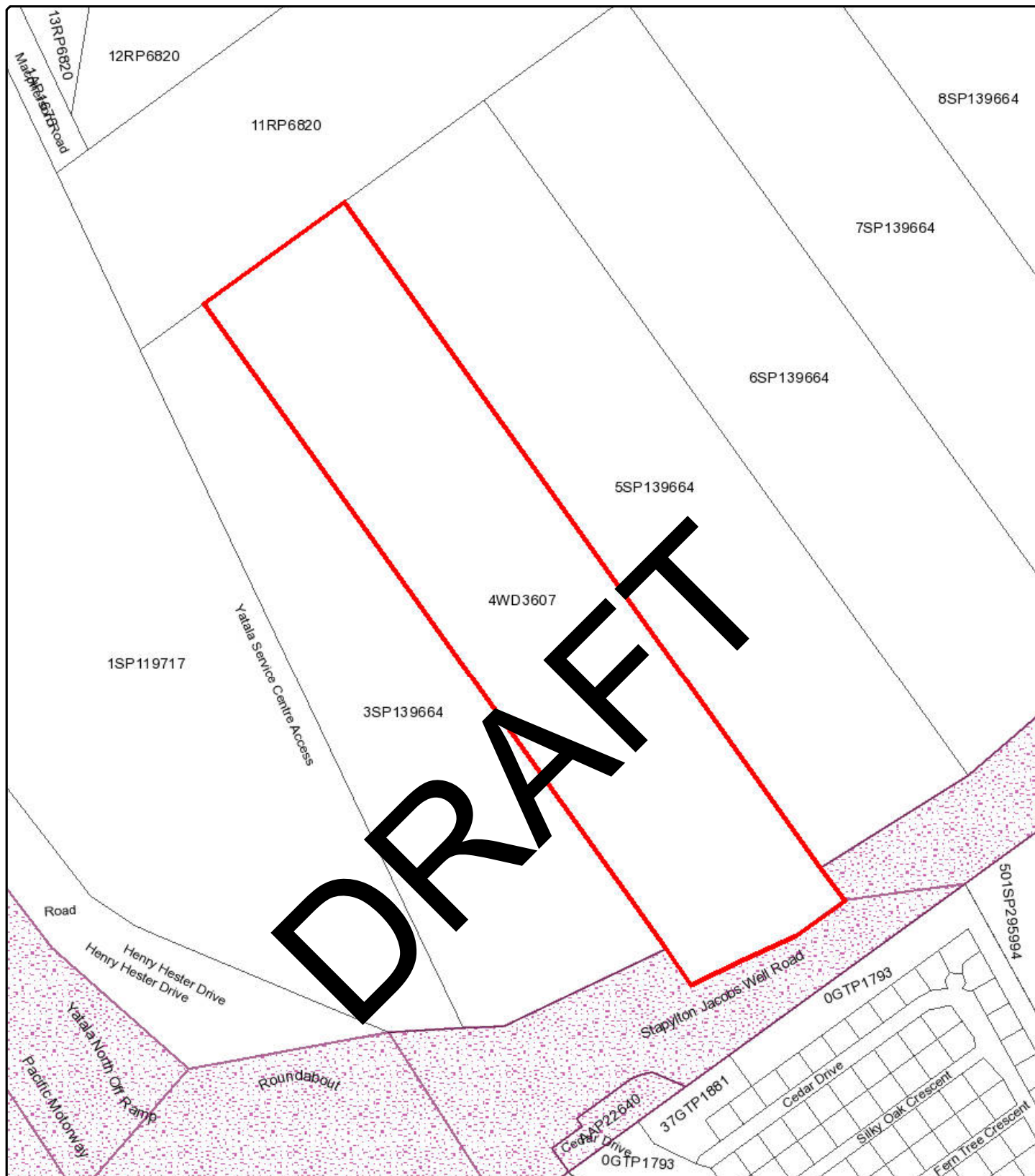


Water resource planning area boundaries



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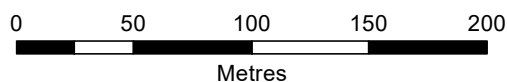
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State-controlled road



State-controlled road



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Appendix 5 – COGC Environmental Significance Code Response

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City Plan code template

This code template supports the preparation of a development application against either the acceptable outcome(s) or performance outcome(s) contained in the code. Development assessment rules are outlined in **Section 5.3.3** of the City Plan.

Please note:

For assessment against the overall outcomes, refer to the appropriate code.

Note: The whole of the planning scheme is identified as the assessment benchmark for impact assessable development. This specifically includes assessment of impact assessable development against this strategic framework. The strategic framework may contain intentions and requirements that are additional to and not necessarily repeated in zone, overlay or other codes. In particular, the performance outcomes in zone codes address only a limited number of aspects, predominantly related to built form. Development that is impact assessable must also be assessed against the overall outcomes of the code as well as the strategic framework.

Environmental significance overlay code

8.2.6.1 Application

This code applies to assessing all material change of use, reconfiguration of a lot and operational works (vegetation clearing, changes to ground level, infrastructure) for development on land identified in Part 5.10 Categories of development and assessment and containing the following mapped areas:

Overlay map	Mapped area
Environmental significance – Biodiversity areas	Matters of State Environmental Significance Protected Areas Matters of Local Environmental Significance • Hinterland core habitat system; • Coastal wetlands and islands core habitat system; • Substantial remnants; and • Hinterland to coast critical corridors.
Environmental significance – Priority species	Matters of State Environmental Significance • Koala habitat areas; and • State significant species. Matters of Local Environmental Significance • Local significant species.

Overlay map	Mapped area
Environmental significance – Vegetation management	Matters of State Environmental Significance - Regulated Vegetation. Matters of Local Environmental Significance - High priority vegetation; - Medium priority vegetation; and - General priority vegetation.

And for all land containing, sharing a property boundary with or within a defined buffer distance of, the following mapped areas:

Overlay map	Mapped area
Environmental significance – Wetlands and waterway	Matters of State Environmental Significance - State significant aquatic systems; and - State significant wetlands. Matters of Local Environmental Significance - Major waterway; - Waterway; and - Local significant wetlands.

When using this code, reference should be made to **Section 5.3.2** and, where applicable, **Section 5.3.3**, in **Part 5**.

Note: Buffers are taken as the maximum distance applicable for the site and are not cumulative.

8.2.6.2 Purpose

- (1) The purpose of the Environmental significance overlay code is to identify and protect matters of environmental significance and ensure that development is consistent with, and contributes to, the achievement of the objectives of the Nature Conservation Strategy.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) Matters of environmental significance are identified, protected in situ and enhanced to maintain flora and fauna diversity within:
 - (i) Hinterland core habitat systems;
 - (ii) Coastal wetlands and islands core habitat systems;
 - (iii) Substantial remnants; and
 - (iv) Hinterland to coast critical corridors.

- (b) Degraded matters of environmental significance are protected and rehabilitated.
- (c) High priority vegetation is protected in situ.
- (d) Outside of Biodiversity Areas:
 - (i) Disturbance to regulated and general priority vegetation is minimised;
 - (ii) Impacts on medium priority vegetation are managed, in order of priority, by:
 - (A) avoiding significant adverse impacts;
 - (B) mitigating significant adverse impacts where these cannot be avoided; and
 - (C) offsetting any significant residual impacts.
 - (iii) State and local significant species and their habitat are identified and protected.
 - (iv) The quality or connectivity of habitat for State and local significant species (including the koala) is improved.
- (e) Wetlands, waterways and their associated buffers (as prescribed in RO2) are protected and enhanced.
- (f) Buffers are provided between matters of environmental significance and any proposed development, to manage impacts.
- (g) Appropriate tenure and management arrangements are provided to protect matters of environmental significance and their associated buffers.
- (h) Where offsets are required, these are consistent with the *Environmental Offsets Act 2014*.
- (i) Management strategies and appropriate clearing practices are implemented to ensure any fauna impacted by development activities are managed and protected during works.

Editor's Note – in addition to the requirements of this planning scheme, measures for the protection of matters of environmental significance are established by the Commonwealth and Queensland Government. Additional approvals or referrals may be required.

8.2.6.3 Specific benchmarks for assessment**Table 8.2.6-2: Environmental significance overlay code – for assessable development**

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
Ecological site assessment			
PO1 All matters of environmental significance on and adjacent to the development site are identified and protected. Note - An Ecological Site Assessment prepared in accordance with SC6.7 City Plan policy – Ecological site assessments, is Council's preferred method for addressing this performance outcome.	AO1 Proposed works do not impact on: (a) areas identified on Environmental significance – vegetation management overlay map ; (b) buffers to wetlands and waterways being: (i) 100m from the mapped boundary of a State significant aquatic area, as identified on Environmental significance – wetlands and waterways overlay map ; (ii) 100m from the outer landward boundary of a State significant wetland, as identified on Environmental significance – wetlands and waterways overlay map ; (iii) 100m from the outer landward boundary of a local significant wetland, as identified on Environmental significance – wetlands and waterways overlay map ; (iv) 60m from the outer bank of a Major Waterway identified on Environmental significance – wetlands and waterways overlay map ; or (v) 30m from the outer bank of a Waterway identified on Environmental significance	Complies with PO1 An Ecological Assessment has been provided. Matters of environmental significance on the site have been identified and protected in accordance with the findings of the Ecological Assessment.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
	– wetlands and waterways overlay map; and (c) individual trees within areas mapped on the Environmental significance – priority species overlay map.		
Biodiversity areas			
PO2 Development does not impact on Protected Areas as identified on the Environmental significance – biodiversity areas overlay map.	AO2.1 No acceptable outcome provided.	Complies with PO2 - The proposed development will not impact on Protected Areas as identified on the Environmental Significance – biodiversity areas overlay map.	
PO3 Development within the Hinterland to Coast Critical Corridors as identified on the Environmental significance – biodiversity areas overlay map is located and designed to: (a) provide corridors of sufficient dimensions and characteristics that will enable adequate movement of fauna through the site; (b) protect in situ matters of environmental significance and associated buffers; (c) protect in situ, vegetation identified on the Environmental significance – vegetation management overlay map and habitat for native flora and fauna; (d) link matters of environmental significance, existing corridors and/or conservation estate/reserves on adjacent properties; (e) maintain and improve upon the regional connectivity of the Hinterland to Coast Critical Corridors;	AO3.1 No acceptable outcome provided.	Complies with PO3 - The proposed development is not located within the hinterland to coast critical corridors as identified on the Environmental Significance – biodiversity areas overlay map.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
and (f) allow for the rehabilitation of disturbed, cleared or modified areas that form part of the Hinterland to Coast Critical Corridors. Note : Recommendations provided in an ecological site assessment (prepared in accordance with SC6.7 City Plan policy – Ecological site assessments) are Council's preferred method for determining corridor dimensions.			
PO4 Development within Hinterland Core Habitat Systems, Coastal Wetlands and Islands Core Habitat Systems and Substantial Remnant Areas as identified on the Environmental significance – biodiversity areas overlay map is located and designed to: (a) protect in situ matters of environmental significance and associated buffers; (b) protect in situ vegetation identified on the Environmental significance – vegetation management overlay map and habitat for native flora and fauna; and (c) allow for the rehabilitation of disturbed, cleared or modified areas.	AO4 No acceptable outcome provided.	Complies with PO4 - The proposed development is not located within the Hinterland Core habitat Systems, Coastal Wetlands and Island Core Habitat Systems or Substantial Remnant Areas as identified on the Environmental Significance – biodiversity areas overlay map	
Wetland and waterway			
PO5 Buffers are provided to wetlands and waterways identified on the Environmental significance – wetlands and waterways overlay map to ensure the:	AO5.1 Buffers at least 100m wide are provided between the development and the mapped boundary of a State significant aquatic area, as identified on Environmental significance – wetlands and waterways overlay	Complies with PO5 – The submitted Ecological Assessment has identified that the proposed sewer impact corridor will occur within 100m of an adjacent mapped locally significant wetland. The proposed sewer impact corridor will maintain a minimum buffer distance of 35m from the locally significantly wetland as detailed in the ecological assessment. This buffer is considered	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
(a) protection of matters of environmental significance mapped onsite or identified through an ecological site assessment; (b) unimpeded movement of fauna along the waterway; (c) water quality is maintained; (d) bank stability; and (e) protection of property and infrastructure. Note: The buffer width for wetlands is measured from the outer, landward boundary of the mapped wetland, as shown on Environmental significance – wetland and waterways overlay map. Note: Recommendations provided in an ecological site assessment (prepared in accordance with SC6.7 City Plan policy – Ecological site assessments) is Council's preferred method for determining alternative buffer widths. Note: Artificial waterways are to be addressed through the Coastal erosion hazard overlay code and map. Where a waterbody contains both natural and artificial banks, the natural banks are to be assessed in accordance with this performance outcome.	map.	more than adequate to protect the ecological functioning of the locally significant wetland area for the following reasons; - the impact area for the proposed sewer corridor will have a low ecological impact and will be limited to a total corridor no more than 10m wide; - the multiple techniques used to install the sewer will reduce the above ground disturbance in some sections, which will further reduce the potential on ground impacts; - The surrounding areas are already highly modified and used as improved pasture lands. The proposed sewer impact corridor will cross through a mapped minor waterway line. As demonstrated in the Ecological Assessment, this waterway line is a heavily modified drainage line that originates from the other side of Stabyton Jacobs well road. This mapped waterway line contains no native vegetation and is characterised by exotic weeds and pasture grasses. Therefore, due to the limited impact area of the proposed 10m wide sewer corridor, and the lack of existing native vegetation, it is considered the on ground impacts of the proposed disturbance will be negligible.	
	AO5.2 Buffers at least 100m wide are provided between the development and the outer landward boundary of a State significant wetland, as identified on Environmental significance – wetlands and waterways overlay map.		
	AO5.3 Buffers at least 100m wide are provided between the development and the outer landward boundary of a Local significant wetland as identified on the Environmental significance – wetlands and waterways overlay map.		
	AO5.4 Buffers at least 60m wide are provided between the development and the outer bank of a Major Waterway as identified on the Environmental significance – wetlands and waterways overlay map.		
	AO5.5 Buffers at least 30m wide are provided between the development and the outer bank of a waterway as identified on the Environmental significance – wetlands and waterways overlay map.		
Vegetation management			
PO6 Regulated vegetation is protected in situ when it is:	AO6 Development does not impact on regulated vegetation.	Complies with AO6 - The proposed development does not propose to clear regulated vegetation identified on the Environmental Significance – vegetation management overlay map.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
(a) identified on the Environmental significance – vegetation management overlay map ; and (b) within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map .			
PO7 Development is designed to maintain regulated vegetation and minimise disturbance when it is: (a) identified on the Environmental significance – vegetation management overlay map ; and (b) outside of biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map .	AO7 Development avoids impacts on regulated vegetation.	Complies with AO7 - The proposed development does not propose to clear regulated vegetation identified on the Environmental Significance – vegetation management overlay map.	
PO8 High priority vegetation as identified on the Environmental significance – vegetation management overlay map is protected in situ.	AO8 No acceptable outcome provided.	Complies with PO8 - The proposed development does not propose to clear high priority vegetation identified on the Environmental Significance – vegetation management overlay map.	
PO9 Medium and general priority vegetation as identified on the Environmental significance – vegetation management overlay map within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map is protected in situ.	AO9 No acceptable outcome provided.	Complies with PO9 - The proposed development does not propose to clear medium or general priority vegetation as identified on the Environmental Significance – vegetation management overlay map that is within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
PO10 Vegetation is protected when it is: (a) identified as medium priority vegetation on the Environmental significance – vegetation management overlay map; and (b) located outside the biodiversity areas identified on the Environmental significance – biodiversity areas overlay map.	AO10 Vegetation is not damaged when it is: (a) identified as medium priority vegetation on the Environmental significance – vegetation management overlay map; and (b) located outside the Environmental significance – biodiversity areas overlay map. OR Where all attempts have been made to avoid and minimise damage to vegetation as stated above, any significant residual impact is offset consistent with the <i>Environmental Offsets Act 2014</i> , at a ratio of 3:1 (area) in accordance with SC6 – City Plan policy – Environmental offsets . OR Damage to medium priority vegetation identified on the Environmental significance – vegetation management overlay map and located outside the biodiversity areas identified on the Environmental significance – biodiversity areas overlay map is for committed development.	Complies with AO10 - The proposed development does not propose to clear medium priority vegetation as identified on the Environmental Significance – vegetation management overlay map.	
PO11 Disturbance to vegetation is minimised when it is: (a) identified as General priority vegetation on the Environmental significance – vegetation management overlay map; and (b) located outside the Environmental significance – biodiversity areas	AO11 Development avoids impacts on general priority vegetation. Any damage is minimised to the greatest extent possible.	Complies with PO11 - The development proposes to clear 465m ² of mapped General priority vegetation located outside a biodiversity area for the proposed sewer installation impact corridor. The remainder of vegetation on the subject site has been proposed to be retained.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
overlay map.			
PO12 Buffers are provided that protect the long term viability of high priority and regulated vegetation located on or adjacent to the site.	AO12 Buffers at least 30m wide are provided between the development and any retained vegetation identified as high priority or regulated vegetation on the Environmental significance – vegetation management overlay map on or adjacent to the site.	Complies with AO12 – There is no regulated vegetation identified on the Environmental significance – vegetation management overlay mapped as occurring on the subject site.	
Priority species			
PO13 Assessable koala feed and shelter trees are protected in situ when they are located: (a) in koala habitat areas as identified on the Environmental significance – priority species overlay map ; and (b) within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map .	AO13 Development does not impact on assessable koala feed and shelter trees.	Complies with PO13 – The development does not propose to clear koala feed and shelter trees within biodiversity areas identified on the Environmental significance – biodiversity areas overlay map.	
PO14 Assessable koala feed and shelter trees are protected when they are: (a) in koala habitat areas as identified on the Environmental significance – priority species overlay map ; and (b) outside biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map .	AO14 Development avoids impacts on assessable koala feed and shelter trees. Any damage is minimised to the greatest extent possible.	Complies with PO13 – The development does not propose to clear koala feed and shelter trees within koala habitat areas as identified on the Environmental Significance – priority species overlay map and outside of biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	
PO15 Site design provides safe koala movement opportunities by incorporating measures to maintain connectivity between areas of koala habitat on and	AO15 No acceptable outcome provided.	Complies with PO15 – The proposed sewer corridor will not impact connectivity of koala habitat areas, as the proposed impact area is limited to a 10m wide corridor that travels through areas with little to no native vegetation in most sections. No evidence of koala presence on the site has been observed throughout	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
adjacent to the site. Note : <i>DEHP's Koala-Sensitive Design Guideline</i> should be consulted for suitable measures to provide for safe koala movement.		ecological and vegetation surveys.	
PO16 During the clearing and construction phases, measures are incorporated to protect koalas from death or injury.	AO16 Threats to koalas as a result of clearing and construction activities are mitigated by: (a) ensuring no tree in which a koala is present or a tree with a crown overlapping a tree containing a koala is cleared; (b) undertaking clearing of vegetation in stages, and ensuring: (i) no more than 1 ha is cleared per day for sites less than 6 ha in size; (ii) no more than 2 ha is cleared per day for sites greater than 6 ha in size; (iii) that between each stage there is at least 12 hours where no clearing occurs; and (iv) koala habitats always linked to allow koalas to move out of the site; (c) use of qualified koala spotters; (d) prohibition of domestic dogs and security dogs on site; and (e) use of koala safety fencing.	Complies with AO16 – No evidence of koala presence on the site has been observed throughout ecological and vegetation surveys. However, the undertaking of the required pre-clearing surveys and supervision by qualified spotter operators (as recommended in the ecological report) will ensure that mitigation measures to protect koalas from injury or death are incorporated into the clearing and construction phases, if koalas are found to be present on the site.	
PO17 State significant species, and their habitat, are protected in situ when it is: (a) identified on the Environmental significance – priority species	AO17 Development does not impact on State significant species, and their habitat.	Complies with PO17 – The development does not propose to impact state significant species, and their habitat within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map .	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
overlay map, or through an ecological site assessment; and (b) within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.			
PO18 Development protects state significant species, and their habitat or is designed to minimise and mitigate impacts on habitat values when it is: (a) identified on the Environmental significance – priority species overlay map; and (b) outside of biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	AO18.1 Development avoids impacts on state significant species, and their habitat. AO18.2 Where development impacts on state significant species and their habitat, the following occurs: (a) flora species are propagated and used in rehabilitation and landscaping onsite; and (b) fauna species are safely relocated by a qualified fauna spotter/catcher.	Complies with AO18.1 – The development does not propose to impact state significant species, and their habitat outside of biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	
PO19 Local significant species, and their habitat, are protected in situ when it is: (a) identified on the Environmental significance – priority species overlay map, or through an ecological site assessment; and (b) within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	AO19 Development does not impact on local significant species, and their habitat.	Complies with AO19 – The development does not propose to impact local significant species, and their habitat within biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map.	
PO20 Development protects local significant species, and their habitat or is designed	AO20.1 Development avoids impacts on local significant species, and their habitat.	Complies with AO20.1 – The development does not propose to impact local significant species, and their habitat outside of biodiversity areas as identified on the	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
to minimise and mitigate impacts on habitat values when it is: (a) identified on the Environmental significance – priority species overlay map ; and (b) outside of biodiversity areas as identified on the Environmental significance – biodiversity areas overlay map .	AO20.2 Where development impacts on local significant species and their habitat, the following occurs: (a) flora species are propagated and used in rehabilitation and landscaping onsite; and (b) fauna species are safely relocated by a qualified fauna spotter catcher.	Environmental significance – biodiversity areas overlay map .	
Fauna management			
PO21 Development design and location provides for the safe movement of native fauna through the site.	AO21 Where infrastructure crosses native fauna movement paths, the design of new development incorporates fauna friendly movement solutions. Note: Fauna friendly movement solutions developed in accordance with the <i>Queensland Government Fauna Sensitive Road Design Manual</i> (Volume 1) Preferred Practices; and the <i>Queensland Government Koala Sensitive Design Guidelines</i> is Council's preferred method for addressing this outcome.	Complies with PO21 – The development does not propose infrastructure that crosses fauna movement paths. The proposed development will not impact on fauna movement, as the impact area is limited to a 10m linear corridor.	
PO22 Where fauna habitat is proposed to be damaged, management strategies must be implemented to ensure: (a) the native fauna is safely relocated to an area of similar habitat; (b) the sequence of habitat disturbance ensures that fauna is not isolated from adjoining areas of habitat; (c) fauna relocation occurs immediately prior to habitat disturbance;	AO22 No acceptable outcome provided.	Complies with PO22 – A Fauna Management Plan will can be conditioned by COCG if required.	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
(d) accredited and experienced spotter catchers, licensed by the Queensland Parks and Wildlife Service, are to be present on the site to direct and undertake the removal and relocation of fauna; and (e) where possible, damaged habitat and nesting sites are rehabilitated outside of development areas. Note: A Fauna Management Plan prepared by a suitably qualified person and in accordance with SC6.8 City Plan policy – Environmental management plans is Council's preferred method for addressing this outcome.			
Tenure, ownership and management arrangements			
PO23 Matters of environmental significance and associated buffers, mapped areas as identified on the Environmental significance – vegetation management overlay map proposed for retention and areas requiring rehabilitation are suitably protected in perpetuity and will: (a) enable necessary fire management in accordance with an approved fire management plan and any adopted bushfire management plan; (b) allow unimpeded movement of native fauna through matters of environmental significance and associated buffers; (c) enable maintenance access and regular management; (d) enable auditing and reporting of maintenance and management activities;	AO23 Matters of environmental significance and associated buffers, mapped areas as identified on the Environmental significance – vegetation management overlay map proposed for retention and areas requiring rehabilitation are transferred to council ownership as Public Open Space. OR Where not required for public access, matters of environmental significance and associated buffers, and mapped areas as identified on the Environmental significance – vegetation management overlay map proposed for retention and areas requiring rehabilitation are retained in private ownership and protected under a statutory covenant (under the <i>Land Title Act 1994</i>).	N/A	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
(e) provide for public access along major waterways, where such access is consistent with the ecological functions; (f) allow for linkages and buffers to adjacent areas of ecological significance; and (g) allow for a coordinated approach to the management of adjacent areas of conservation estate.	Note: Where the area is adjacent to existing public open space, or is a buffer to a major waterway, Council's preference is for the land to be dedicated as Public Open Space.		
PO24 An Open Space Management Plan prepared in accordance with SC6.12 City Plan policy – Landscape work is prepared for areas to be dedicated to Council as Public Open Space.	AO24 No acceptable outcome provided.	N/A	
PO25 A Covenant Management Plan is prepared for areas to be protected under a statutory covenant. The management plan must include the following details: (a) rehabilitation area and strategy of works; (b) weed eradication and control requirements; (c) how the covenant area will be maintained and managed in perpetuity; (d) feral and domestic animal exclusion requirements; and (e) required maintenance access. Note: A Covenant Management Plan is prepared by a suitably qualified person and in accordance with SC6.8 City Plan policy – Environmental management plans	AO25 No acceptable outcome provided.	N/A	

Performance outcomes	Acceptable outcomes	Does the proposal meet the acceptable outcome? If not, justify how the proposal meets <u>either</u> the performance outcome or overall outcome	Internal use
is Council's preferred method for addressing this performance outcome.			
Rehabilitation			
PO26 Disturbed, cleared or modified areas are rehabilitated where they form part of: (a) an ecological corridor; or (b) matters of environmental significance and associated buffers; or (c) areas identified within an Ecological Site Assessment as requiring rehabilitation. Note : A Rehabilitation Management Plan prepared in accordance with the <i>South East Queensland Ecological Restoration Framework</i> and SC6.8 City Plan policy – Environmental management plans is Council's preferred method for addressing this outcome.	AO26 No acceptable outcome provided.	N/A	

Appendix 6 – SDAP Code Responses

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State code 16: Native vegetation clearing

Table 16.2.2: General

Performance outcomes	Acceptable outcomes	Response
Clearing avoids or minimises impacts		
PO1 Clearing and adverse impacts of clearing do not occur unless the application has demonstrated that the clearing and the adverse impacts of clearing have been: 1. reasonably avoided; or 2. reasonably minimised where it cannot be reasonably avoided.	No acceptable outcome is prescribed.	Complies with PO1 – The installation of the proposed trunk gravity sewer pipeline has been conditioned by City of Gold Coast Decision Notice for ROL201800079. The proposed alignment of the gravity sewer route is determined by the relevant engineering constraints such as required grade and location of existing services. The proposed impact area has been limited to a lineal 10m wide corridor in order to facilitate the installation of the conditioned sewer pipeline. A combination of micro-tunnelling, under boring, and open trenching (as decided by the engineering constraints of the site) has been proposed. The combined use of these techniques will further reduce the on-ground disturbance to the impact corridor.
Clearing on land in particular circumstances		
PO2 Clearing is consistent with any notice requiring compliance on the land subject to the development application, unless a better environmental outcome can be achieved. Note: The discharge of the vegetation management requirements under the notice requiring compliance can only occur in conjunction with the better environmental outcome being legally secured. Further guidance on meeting the requirements of a better environmental outcome can be found in State Development Assessment Provisions Guidance Material: State code 16: Native vegetation clearing, Department of Natural Resources and Mines and Energy, 2019.	No acceptable outcome is prescribed.	N/A

Performance outcomes	Acceptable outcomes	Response
PO3 Clearing is consistent with vegetation management requirements for particular regulated areas unless a better environmental outcome can be achieved. Note: The discharge of the vegetation management requirements under the notice requiring compliance can only occur in conjunction with the better environmental outcome being legally secured. Further guidance on meeting the requirements of a better environmental outcome can be found in State Development Assessment Provisions Guidance Material: State code 16: Native vegetation clearing, Department of Natural Resources and Mines and Energy 2019.	No acceptable outcome is prescribed.	N/A
PO4 Clearing of a legally secured offset area: 1. is consistent with the offset delivery plan; or agreement for the offset area on the land subject to the development application; or 2. only occurs if an additional offset is provided that is consistent with the <i>Environmental Offsets Act 2014</i> and the relevant policy in the Queensland Environmental Offsets Policy, Department of Environment and Heritage Protection, 2014. Note: Reference to 'agreement' above includes the 'agreed delivery arrangement' for the offset area as well as instruments associated with the legally secured offset area. Clearing should be consistent with any agreement however described.	No acceptable outcome is prescribed.	N/A
Clearing of vegetation as a result of the material change of use or reconfiguration of a lot		
PO5 Clearing as a result of a material change of use or clearing as a result of reconfiguring a lot does not occur.	No acceptable outcome is prescribed.	
Clearing that could already be done under an exemption		
PO6 Clearing does not occur unless it is clearing that could be done as exempt clearing work for the purpose of the development (as prescribed under schedule 21 of the Planning Regulation 2017) prior to the material change of use or reconfiguring a lot application being approved.	No acceptable outcome is prescribed.	

Table 16.2.3: Specific

Performance outcomes	Acceptable outcomes	Response
Clearing associated with wetlands (public safety, relevant infrastructure activities consequential development of IPA approval, a coordinated project, extractive industry)		
PO7 Clearing maintains the current extent of vegetation associated with any natural wetland to protect: 1. bank stability by protecting against bank erosion; and 2. water quality by filtering sediments, nutrients and other pollutants; and 3. aquatic habitat; and 4. terrestrial habitat.	AO7.1 Clearing does not occur in a natural wetland or within 100 metres of the defining bank of any natural wetland. OR	Complies AO7.1 – Clearing does not occur in a natural wetland or within 100m of the defining bank of any natural wetland.
	AO7.2 Clearing within 100 metres of the defining bank of any natural wetland: 1. does not occur within 10 metres of the defining bank of any natural wetland; and 2. does not exceed widths in clause 16.3.1 in this code. OR	
	AO7.3 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, an offset is provided for any acceptable significant residual impacts from clearing of vegetation associated with a natural wetland (matter of state environmental significance).	
Clearing associated with wetlands (necessary to control non-native plants or declared pests, encroachment, managing thickened vegetation, fodder harvesting)		
PO8 Clearing maintains vegetation associated with a natural wetland to protect: 1. bank stability by protecting against bank erosion; and 2. water quality by filtering sediments, nutrients and other pollutants; and 3. aquatic habitat; and 4. terrestrial habitat.	Clearing necessary to control non-native plants or declared pests: AO 8.1 Mechanical clearing does not occur in any of the following areas, unless it is required to provide necessary access to control non-native plants or declared pests: 1. inside the defining bank of any natural wetland; and	

Performance outcomes	Acceptable outcomes	Response
	2. within 20 metres of the defining bank of any natural wetland. AND AO8.2 Clearing to provide necessary access to control non-native plants or declared pests only occurs where: - clearing does not exceed five metres in width; and - clearing retains all mature trees and habitat trees; and - the access track: - runs parallel to a natural wetland and clearing is not within 10 metres of the defining bank of a natural wetland; or - is required to provide access across the wetland. AND AO8.3 Chemical clearing retains: - all mature trees; and - all habitat trees; and - at least 5 per cent of immature trees in each 50 metre by 50 metre area. AND AO8.4 Root absorbed broad spectrum herbicides are not applied within whichever is the greater distance from the defining bank of a natural wetland: 100 metres; or - the distance specified on the approved product label; or - the distance specified in the safety and use conditions issued by the Australian Pesticides and Veterinary Medicines Authority.	

Performance outcomes	Acceptable outcomes	Response
	AND	
	AO8.5 Aerial application of a foliar herbicide does not occur within whichever is the greater distance from the defining bank of a natural wetland, 1. 50 metres; or 2. the distance specified for wetlands on the approved product label; 3. the distance specified in the safety and use conditions issued by the Australian Pesticides and Veterinary Medicines Authority.	
	AND	
	<i>Clearing for logging of weakened vegetation:</i> AO8.6 Mechanical clearing does not occur in any of the following areas: 1. inside the defining bank of a natural wetland; and 2. within 20 metres of the defining bank of a natural wetland.	
	AND	
	<i>Clearing for encroachment:</i> AO8.7 Mechanical clearing does not occur in any of the following areas: 1. inside the defining bank of any natural wetland; and 2. within 20 metres of the defining bank of any natural wetland.	

Performance outcomes	Acceptable outcomes	Response
	AND AO8.8 Root absorbed broad spectrum herbicides are not applied within whichever is the greater distance from the defining bank of a natural wetland 1. 100 metres; or 2. the distance specified on the approved product label; or 3. the distance specified in the safety and use conditions issued by the Australian Pesticides and Veterinary Medicines Authority. AND	
	<i>Clearing for fodder harvesting</i> AO8.9 Mechanical clearing does not occur in any of the following areas: 1. inside the defining bank of any natural wetland; and 2. within 20 metres of the defining bank of any natural wetland. AND	
	AO8.10 Mechanical clearing that is strip harvesting or block harvesting does not occur in any of the following areas: 1. inside the defining bank of any natural wetland; and 2. within 100 metres of the defining bank of any natural wetland.	
Clearing associated with wetlands (necessary environmental clearing – land restoration and natural disaster preparation)		

Performance outcomes	Acceptable outcomes	Response
PO9 Clearing maintains vegetation associated with any natural wetland or rehabilitates the cleared area to protect: 1. bank stability by protecting against bank erosion; and 2. water quality by filtering sediments, nutrients and other pollutants; and 3. aquatic habitat; and 4. terrestrial habitat.	AO9.1 Clearing does not occur in any of the following areas: 1. inside the defining bank of any natural wetland; and 2. within 100 metres of the defining bank of any natural wetland. OR	
	AO9.2 Clearing within 100 metres of the defining bank of any natural wetland only occurs where: 1. clearing does not exceed 0.5 hectares; and 2. clearing retains all mature trees and habitat trees; and 3. clearing that is for flood preparation complies with all of the following: a. clearing is undertaken by logging only; and b. clearing does not exceed 100 square metres; and c. clearing does not occur outside the defining banks of a natural wetland; and d. clearing does not occur within 50 metres of other clearing for flood preparation. OR	
	AO9.3 Clearing to provide necessary access to undertake necessary environmental clearing only occurs where clearing: 1. does not exceed 10 metres in width; and 2. retains all mature trees and habitat trees; and 3. the access track: a. runs parallel to a natural wetland and clearing is not within 10 metres of the defining bank of a natural wetland; or b. is required to provide access across the wetland. OR	

Performance outcomes	Acceptable outcomes	Response
	AO9.4 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, the cleared area is rehabilitated.	
Clearing associated with wetlands (necessary environmental clearing - natural channel diversion and contaminants removal)		
PO10 Clearing maintains the current extent of vegetation associated with any natural wetland or rehabilitates the cleared area to protect: 1. bank stability by protecting against bank erosion; and 2. water quality by filtering sediments, nutrients and other pollutants; and 3. aquatic habitat; and 4. terrestrial habitat.	AO10.1 Clearing does not occur in any of the following areas: 1. inside the defining bank of any natural wetland; and 2. within 100 metres of the defining bank of any natural wetland. OR	
	AO10.2 Clearing within 100 metres of the defining bank of any natural wetland only occurs where: 1. clearing does not exceed 0.5 hectares; and 2. clearing retains all mature trees and habitat trees. OR	
	AO10.3 Clearing to provide necessary access to undertake necessary environmental clearing only occurs where clearing: 1. does not exceed 10 metres in width; and 2. retains all mature trees and habitat trees; and 3. the access track: a. runs parallel to a natural wetland and clearing is not within 10 metres of the defining bank of a natural wetland; or b. is required to provide access across the wetland. OR	
	AO10.4 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, the cleared area is rehabilitated. OR	

Performance outcomes	Acceptable outcomes	Response
	AO10.5 Where clearing is for natural channel diversion or contaminants removal, and clearing cannot be reasonably avoided, and: - clearing has been reasonably minimised; and - the cleared area cannot be reasonably rehabilitated, an offset is provided for any acceptable significant residual impact from clearing of vegetation associated with a natural wetland (a matter of state environmental significance).	
Clearing associated with watercourses and drainage features (public safety, relevant infrastructure activities, consequential development of IPA approval, coordinated project, extractive industry)		
PO11 Clearing maintains the current extent of vegetation associated with any watercourse or drainage feature to protect: - bank stability by protecting against bank erosion; and - water quality by filtering sediments, nutrients and other pollutants; and - aquatic habitat; and - terrestrial habitat.	AO11.1 Clearing does not occur in any of the following areas: - inside the defining bank of a watercourse or drainage feature; and - within the relevant distance of the defining bank of any watercourse or drainage feature in table 16.3.2 of this code. OR AO11.2 Clearing within any watercourse or drainage feature, or within the relevant distance of the defining bank of any watercourse or drainage feature in table 16.3.2 of this code: - does not exceed the widths in table 16.3.1 of this code and - does not occur within 10 metres of the defining bank, unless clearing is required into or across the watercourse or drainage feature. OR	Complies AO11.1 – Clearing does not occur inside the defining bank of a watercourse or drainage feature, or within the relevant distance of the defining bank of any watercourse or drainage feature.

Performance outcomes	Acceptable outcomes	Response
	AO11.3 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, an offset is provided for any acceptable significant residual impact from clearing of vegetation associated with any watercourse or drainage feature (a matter of state environmental significance).	
Clearing associated with watercourses and drainage features (necessary environmental clearing- land restoration and natural disaster preparation)		
PO12 Clearing maintains vegetation associated with any watercourse or drainage feature or rehabilitates the cleared area to protect: 1. bank stability by protecting against bank erosion; and 2. water quality by filtering sediments, nutrients and other pollutants; and 3. aquatic habitat; and 4. terrestrial habitat.	AO12.1 Clearing does not occur in any of the following areas: 1. inside the defining bank of a watercourse or drainage feature; and 2. within the relevant distance of the defining bank of any watercourse or drainage feature in table 16.3.2 of this code. OR AO12.2 Clearing in a watercourse or drainage feature, or within the relevant distance of the defining bank of any watercourse or drainage feature in table 16.3.2 of this code only occurs where: 1. clearing does not exceed 0.5 hectares; and 2. clearing retains all mature trees and habitat trees; and 3. clearing that is for flood preparation complies with any of the following: a. clearing is undertaken by felling only; and b. clearing does not exceed 100 square metres; and c. clearing does not occur outside of the defining bank of any watercourse or drainage feature; and d. clearing does not occur within 50 metres of other clearing for flood preparation. OR	

Performance outcomes	Acceptable outcomes	Response
	AO12.3 Clearing to provide necessary access to undertake necessary environmental clearing only occurs where clearing: 1. does not exceed 10 metres in width; and 2. retains all mature trees and habitat trees; and 3. the access track: a. runs parallel to a watercourse or drainage feature and clearing is not within 10 metres of the defining bank of a watercourse or drainage feature; or b. is required to provide access across the watercourse or drainage feature.	
	AO12.4 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, the cleared area is rehabilitated.	
Clearing associated with watercourses and drainage features (necessary environmental clearing – natural channel diversion, and contaminants removal)		
PO13 Clearing maintains the current extent of vegetation associated with any watercourse or drainage feature or rehabilitates the cleared area to protect: 1. bank stability by protecting against bank erosion; and 2. water quality by filtering sediments, nutrients and other pollutants; and 3. aquatic habitat; and 4. terrestrial habitat.	AO13.1 Clearing does not occur within any of the following areas: 1. inside the defining bank of a watercourse or drainage feature; and 2. within the relevant distance of the defining bank of any watercourse or drainage feature in table 16.3.2 of this code. OR AO13.2 Clearing in any watercourse or drainage feature, within the relevant distance of the defining bank of any watercourse or drainage feature in table 16.3.2 of this code only occurs where: 1. clearing does not exceed 0.5 hectares; and 2. clearing retains all mature trees and habitat trees. OR	

Performance outcomes	Acceptable outcomes	Response
	AO13.3 Clearing to provide necessary access to undertake necessary environmental clearing only occurs where: - clearing does not exceed 10 metres in width; and - clearing retains all mature trees and habitat trees; and - the access track: - runs parallel to a watercourse or drainage feature and clearing is not within 10 metres of the defining bank of a watercourse or drainage feature; or - is required to provide access across the watercourse or drainage feature. OR	
	AO13.4 Where clearing cannot be reasonably avoided, and: - clearing has been reasonably minimised; and - the cleared area cannot be reasonably rehabilitated, an offset is provided for any acceptable significant residual impact from clearing of vegetation associated with a watercourse or drainage feature (a matter of state environmental significance).	
Clearing associated with watercourses or drainage features (necessary to control non-native plants or declared pests, managing thickened vegetation, fodder harvesting)		
PO14 Clearing maintains vegetation associated with any watercourse or drainage feature to protect: - bank stability by protecting against bank erosion; and - water quality by filtering sediments, nutrients and other pollutants; and - aquatic habitat; and - terrestrial habitat.	<i>Clearing necessary to control non-native plants or declared pests:</i> AO14.1 Mechanical clearing does not occur in any of the following areas, unless it is required to provide necessary access to control non-native plants or declared pests: inside the defining bank of any watercourse or drainage feature; and	

Performance outcomes	Acceptable outcomes	Response
	2. within 10 metres of the defining bank of a watercourse or drainage feature that is a stream order 1 or 2 watercourse or drainage feature; and 3. within 15 metres of the defining bank of a watercourse or drainage feature that is a stream order 3 or 4 watercourse or drainage feature; and 4. within 20 metres of the defining bank of a watercourse or drainage feature that is a stream order 5 or more watercourse or drainage feature. AND AO14.2 Clearing to provide necessary access to control non-native plants or declared pests only occurs where: 1. clearing does not exceed five metres in width; and 2. clearing retains all habitat trees and mature trees; and 3. the access track: a. runs parallel to the watercourse or drainage feature and is not within 10 metres of the defining bank of the watercourse or drainage feature; and b. is required to provide access across the watercourse or drainage feature. AND AO14.3 Chemical clearing retains all of the following: 1. mature trees; and 2. habitat trees; and 3. at least 50 per cent of immature trees in any 50 metre by 50 metre area.	

Performance outcomes	Acceptable outcomes	Response
	AO14.4 Root absorbed broad spectrum herbicides are not applied within whichever is the greater distance from the defining bank of a watercourse or drainage feature: 1. 100 metres; or 2. any distance specified on the approved product label; or 3. the distance specified in the safety and use conditions issued by the Australian Pesticides and Veterinary Medicines Authority. AND AO14.5 Aerial application of a foliar herbicide does not occur within whichever is the greater distance from the defining bank of a watercourse or drainage feature: 1. 50 metres; or 2. any distance specified on the approved product label; or 3. the distance specified in the safety and use conditions issued by the Australian Pesticides and Veterinary Medicines Authority. AND <i>Clearing for managing thickened vegetation:</i> AO14.6 Mechanical clearing does not occur in any of the following areas: 1. inside the defining bank of any watercourse or drainage feature; 2. within 10 metres of the defining bank of a watercourse or drainage feature that is a stream order 1 or 2 watercourse or drainage feature; 3. within 15 metres of the defining bank of a watercourse or drainage feature that is a stream order 3 or 4 watercourse or drainage feature;	

Performance outcomes	Acceptable outcomes	Response
	4. within 20 metres of the defining bank of a watercourse or drainage feature that is a stream order 5 or more watercourse or drainage feature. AND	
	<i>Clearing for fodder harvesting:</i> AO14.7 Mechanical clearing does not occur in any of the following areas: 1. inside the defining bank of any watercourse or drainage feature; and 2. within 20 metres of the defining bank of any watercourse or drainage feature. AND	
	AO14.8 Mechanical clearing that is strip harvesting or block harvesting does not occur in any of the following areas: 1. inside the defining bank of any watercourse or drainage feature; and 2. within 100 metres of the defining bank of any watercourse or drainage feature.	
Clearing associated with watercourses or drainage features (encroachment)		
PO15 Clearing of encroachment maintains: 1. bank stability by protecting against bank erosion, and 2. water quality by filtering sediments, nutrients and other pollutants; and 3. aquatic habitat; and 4. terrestrial habitat.	AO15.1 Mechanical clearing does not occur in any of the following areas: 1. inside the defining bank of any watercourse or drainage feature; and 2. within 10 metres of the defining bank of a watercourse or drainage feature that is a stream order 1 or 2 watercourse or drainage feature; and 3. within 15 metres of the defining bank of a watercourse or drainage feature that is a stream order 3 or 4 watercourse or drainage feature; and	

Performance outcomes	Acceptable outcomes	Response
	4. within 20 metres of the defining bank of a watercourse or drainage feature that is a stream order 5 or more watercourse or drainage feature. AND AO15.2 Root-absorbed broad spectrum herbicides are not applied within whichever is the greater distance from the defining bank of a watercourse or drainage feature: 1. 100 metres; or 2. any distance specified on the approved product label; or 3. the distance specified in the safety and use conditions issued by the Australian Pesticides and Veterinary Medicines Authority.	
Maintaining connectivity (public safety, relevant infrastructure activities, consequential development of IPA approval, extractive industry)		
PO16 In consideration of vegetation on the land subject to the development application and on adjacent land, sufficient vegetation is retained to maintain ecological processes and remains in the landscape despite threatening processes.	AO16.1 Clearing occurs in accordance with table 16.3.3 in this code.	Complies with PO16 - The proposed impact area has been limited to a lineal 10m wide corridor in order to facilitate the installation of the conditioned sewer pipeline. A combination of micro-tunnelling, under boring, and open trenching (as decided by the engineering constraints of the site) has been proposed. The combined use of these techniques will further reduce the on-ground disturbance to the impact corridor. It is therefore considered that the proposed works will ensure that sufficient vegetation is retained to maintain ecological processes in the landscape despite threatening processes.
Connectivity areas (coordinated project)		
PO17 In consideration of vegetation on the land subject to the development application and on adjacent land:	AO17.1 Clearing occurs in accordance with table 16.3.3 of this code. OR	

Performance outcomes	Acceptable outcomes	Response
1. sufficient vegetation is retained to maintain ecological processes and remains in the landscape despite threatening processes; or 2. where this not reasonably possible, the applicant provides an offset.	AO17.2 Where clearing cannot be reasonably avoided; and clearing has been reasonably minimised; an offset is provided for any acceptable significant residual impact from clearing of vegetation that forms a connectivity area (a matter of state environmental significance).	
Maintaining connectivity (necessary environmental clearing - land restoration and natural disaster preparation)		
PO18 In consideration of vegetation on the land subject to the development application and on adjacent land, sufficient vegetation is retained to maintain ecological processes and remains in the landscape despite threatening processes, or where this is not reasonably possible, the cleared area is rehabilitated.	AO18.1 Clearing occurs in accordance with table 16.3.3 of this code.	
	OR AO18.2 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, the cleared area is rehabilitated.	
Connectivity areas (necessary environmental clearing – natural channel diversion and contaminants removal)		
PO19 In consideration of vegetation on the land subject to the development application and on adjacent land: 1. sufficient vegetation is retained to maintain ecological processes and remains in the landscape despite threatening processes; or 2. where this is not reasonably possible, the applicant rehabilitates the cleared area; or 3. where this not reasonably possible, the applicant provides an offset.	AO19.1 Clearing occurs in accordance with table 16.3.3 of this code.	
	OR AO19.2 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, the cleared area is rehabilitated.	
	AO19.3 Where clearing cannot be reasonably avoided, and: 1. clearing has been reasonably minimised; and 2. the cleared area cannot be reasonably rehabilitated an offset is provided for any acceptable significant residual impact from clearing of vegetation that forms a connectivity area (a matter of state environmental significance).	
Soil erosion (public safety, relevant infrastructure activities, consequential development of Integrated Planning Act approval, coordinated project, necessary environmental clearing)		

Performance outcomes	Acceptable outcomes	Response
PO20 Clearing does not result in accelerated soil erosion within or outside the land the subject of the development application.	AO20.1 Clearing only occurs if an erosion and sediment control plan is developed and implemented to: 1. prevent accelerated soil erosion; or 2. where prevention is not possible, minimise accelerated soil erosion. OR AO20.2 The local government is the assessment manager for the development application	Complies with AO20.1 - An erosion and sediment control plan will be developed as part of Operational Works – Civil works application, and will be implemented to prevent or minimise accelerated erosion
Soil erosion (necessary to control non-native plants or declared pests, managing thickened vegetation, encroachment, fodder harvesting)		
1. PO21 Clearing does not result in accelerated soil erosion within or outside the land subject of the development application.	AO21.1 Clearing only occurs where recognised best practice methods are employed to: 1. prevent increased soil erosion resulting from the clearing; and 2. stabilise soil erosion which would result from clearing; and 3. prevent increased sediment run-off entering a wetland, watercourse or drainage feature as a result of the clearing. AND <i>Clearing necessary to control non-native plants or declared pests</i> AO21.2 Mechanical clearing: 1. does not occur on a slope greater than 15 per cent; and 2. in each 50 by 50 metre area (0.25 hectares), retains 50 per cent of the ground cover and does not disturb more than 50 per cent of the ground cover. AND	

Performance outcomes	Acceptable outcomes	Response
	AO21.3 New access tracks required to provide necessary access to control a non-native plant or declared pests do not exceed five metres in width or de-stabilise the banks of any watercourse or drainage feature as a result of crossing, construction or use AND <i>Clearing for managing thickened vegetation:</i> AO21.4 Mechanical clearing does not: 1. occur in a regional ecosystem in Table 6.3.4 of this code that states 'mechanical clearing not permitted'; 2. disturb more than 50 per cent of the ground surface or result in any hectare having less than 50 per cent ground cover; 3. occur on a slope greater than five per cent; and 4. occur within 50 metres of an area of existing accelerated soil erosion. AND <i>Clearing for encroachment:</i> AO21.5 Mechanical clearing does not occur in any of the following areas: 1. within 50 metres of an area of soil erosion; and 2. slopes greater than 5 per cent. AND <i>Clearing for fodder harvesting:</i> AO21.6 Mechanical clearing does not occur on a slope greater than five percent. OR	

Performance outcomes	Acceptable outcomes	Response
	AO21.7 Mechanical clearing does not occur within 50 metres of an areas of soil erosion and instability.	
Salinity (public safety, relevant infrastructure activities, consequential development of Integrated Planning Act 1997 approval, coordinated project, extractive industry, necessary environmental clearing, encroachment, fodder harvesting)		
PO22 Clearing does not contribute to or accelerate land degradation through waterlogging, or through the salinisation of groundwater, surface water or soil.	AO22.1 Clearing does not occur within 100 metres of a salinity expression area.	Complies with AO22.1 – Clearing does not occur within 100 metres of a salinity expression area.
Conserving endangered and of concern regional ecosystems (public safety and relevant infrastructure activities, consequential development of Integrated Planning Act 1997 approval, coordinated project, extractive industry)		
PO23 Clearing maintains the current extent of endangered regional ecosystems and of concern regional ecosystems.	AO23.1 Clearing does not occur in an endangered regional ecosystem or an of concern regional ecosystem. OR AO23.2 Total clearing of endangered regional ecosystems and of concern regional ecosystems combined does not exceed the widths prescribed in table 16.3.1 of this code. OR AO23.3 Total clearing of endangered regional ecosystems and of concern regional ecosystems combined does not exceed areas prescribed in table 16.3.1 of the code. OR AO23.4 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, an offset is provided for any acceptable significant residual impact from clearing of endangered regional ecosystems and of concern regional ecosystems (a matter of state environmental significance).	Complies with AO23.1 – Clearing does not occur within an endangered or of concern regional ecosystem.
Essential habitat (public safety, relevant infrastructure activities, consequential development of Integrated Planning Act 1997 approval, coordinated project, extractive industry, fodder harvesting)		

Performance outcomes	Acceptable outcomes	Response
PO24 Clearing maintains the current extent of essential habitat.	AO24.1 Clearing does not occur in essential habitat. OR	Complies with AO24.1 – Clearing does not occur within essential habitat.
	AO24.2 Clearing in essential habitat does not exceed the widths prescribed in table 16.3.1 of this code. OR	
	AO24.3 Clearing in essential habitat does not exceed the areas prescribed in table 16.3.1 of this code. OR	
	AO24.4 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, an offset is provided for any acceptable significant residual impact from clearing of essential habitat (a matter of some environmental significance).	
Essential habitat (necessary environmental clearing – land restoration and natural disaster preparation)		
PO25 Clearing does not occur in essential habitat, or where this is not reasonably possible, the applicant rehabilitates the cleared area.	AO25.1 Clearing does not occur in essential habitat. OR	
	AO25.2 Clearing in essential habitat does not exceed the widths prescribed in table 16.3.1 of this code. OR	
	AO25.3 Clearing in essential habitat does not exceed the areas prescribed in table 16.3.1 of this code. OR	
	AO25.4 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, the cleared area is rehabilitated.	
Essential habitat (necessary environmental clearing – natural channel diversion and contaminants removal)		

Performance outcomes	Acceptable outcomes	Response
PO26 Clearing does not occur in essential habitat, or where this is not reasonably possible, the applicant rehabilitates the cleared area, or maintains the current extent of essential habitat.	AO26.1 Clearing does not occur in essential habitat. OR	
	AO26.2 Clearing in essential habitat does not exceed the widths prescribed in table 16.3.1 of this code. OR	
	AO26.3 Clearing in essential habitat does not exceed the areas prescribed in table 16.3.1 of this code. OR	
	AO26.4 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, the cleared area is rehabilitated. OR	
	AO26.5 Where clearing cannot be reasonably avoided, and: 1. clearing has been reasonably minimised; and 2. the cleared area cannot be reasonably rehabilitated; an offset is provided for any acceptable significant residual impact from clearing of essential habitat (a matter of state environmental significance).	
Acid sulfate soils (public safety, relevant infrastructure activities, consequential development of Integrated Planning Act 1997 approval, coordinated project, extractive industry, necessary environmental clearing necessary to control non-native plants or declared pests, managing thickened vegetation, encroachment)		
PO27 Clearing does not result in, or accelerate, disturbance of acid sulfate soils or changes to the hydrology of the location that will result in either of the following: 1. aeration of horizons containing iron sulphides; or 2. mobilisation of acid or metals.	AO27.1 Clearing does not occur in land zone 1, land zone 2 or land zone 3. OR	Complies with AO27.3 – The local government is the assessment manager for the development application.
	AO27.2 Clearing in land zone 1, land zone 2 or land zone 3 in areas below the five metre Australian Height Datum only occurs where:	

Performance outcomes	Acceptable outcomes	Response
	1. mechanical clearing does not disturb the soil to a depth greater than 30 centimetres; and 2. acid sulfate soils are managed consistent with the State Planning Policy, Department of Infrastructure, Local Government and Planning, July 2017, and with the soil management guidelines in the Queensland Acid Sulfate Soil Technical Manual, Department of Science Information Technology Innovation and the Arts, 2014. OR AO27.3 The local government is the assessment manager for the development application.	
Clearing is staged (extractive industry)		
PO28 Clearing: 1. is staged in line with operational needs that restrict clearing to the current operational area; and 2. only occurs in the area from which material will be extracted, and any reasonably associated built infrastructure, within the term of the development approval; and 3. does not occur without required permits.	No acceptable outcome is prescribed.	
Coordinated project – involving clearing for agriculture		
PO29 Clearing only occurs where the land is suitable for agriculture having regard to topography, climate and soil attributes.	No acceptable outcome is prescribed.	
PO30 For applications for irrigated crops, the owner of the land has, or may have, access to enough water for establishing, cultivating and harvesting the crops to which the clearing relates.	No acceptable outcome is prescribed.	
Clearing for necessary environmental clearing – land restoration and natural disaster preparation		
	AO31.1 Clearing retains all of the following:	

Performance outcomes	Acceptable outcomes	Response
PO31 Clearing does not occur, or where this is not reasonably possible, the applicant rehabilitates the cleared area.	1. habitat trees; 2. mature trees; and 3. the natural floristic composition and range of sizes across the application area. OR	
	AO31.2 Clearing is for the purpose of natural disaster preparation and does not exceed the widths prescribed in table 16.3.1 of this code. OR	
	AO31.3 Clearing is for the purpose of natural disaster preparation and does not exceed the areas prescribed in table 16.3.1 of this code. OR	
	AO31.4 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, the cleared area is rehabilitated.	
Clearing for necessary environmental clearing - natural channel diversion and contaminants removal		
PO32 Clearing does not occur, or where this is not reasonably possible, the applicant rehabilitates the cleared area or maintains the current extent of vegetation.	AO32.1 Clearing retains all of the following: 1. habitat trees; 2. mature trees; and 3. the natural floristic composition and range of sizes across the application area. OR	
	AO32.2 Where clearing cannot be reasonably avoided, and clearing has been reasonably minimised, the regional ecosystem is rehabilitated. OR	

Performance outcomes	Acceptable outcomes	Response
	AO32.3 Where clearing an endangered regional ecosystem or of concern regional ecosystem cannot be reasonably avoided, minimised or rehabilitated, an offset is provided for any acceptable significant residual impact from clearing of an endangered regional ecosystem or of concern regional ecosystem (a matter of state environmental significance).	
Conserving remnant vegetation that are regional ecosystems (necessary to control non-native plants or declared pests)		
PO33 Clearing activities: 1. maintain the natural floristic composition and range of sizes of each species of the regional ecosystem evenly spaced across the application area; and 2. retain all habitat and mature trees.	AO33.1 Mechanical clearing: 1. only occurs within 1.5 metres from edge of the canopy of individual non-native plants, unless the clearing is required to provide necessary access to control a non-native plant or declared pest; and 2. does not occur using two machines linked by chain or cable; and 3. retains all habitat trees and mature trees. AND	
	AO33.2 Clearing to provide necessary access to control non-native plants or declared pests does not exceed five metres in width. AND	
	AO33.3 Any regional ecosystem burn is undertaken in accordance with the fire guideline for the regional ecosystem as outlined in the Regional Ecosystem Description Database (REDD). AND	
	AO33.4 Chemical clearing retains all of the following: 1. mature trees; and 2. habitat trees; and 3. at least 50 per cent of immature trees in each 50 metre by 50 metre area. AND	

Performance outcomes	Acceptable outcomes	Response
	AO33.5 Aerial application of a root-absorbed broad spectrum herbicides does not occur. AND AO33.6 Root-absorbed broad spectrum herbicides are not applied within whichever distance is the greater from a mature tree or a habitat tree; 1. 30 metres; or 2. the distance specified on the approved product label; or 3. the distance specified in the safety and use conditions issued by the Australian Pesticides and Veterinary Medicines Authority.	
Restoring the regional ecosystem (managing thickened vegetation)		
P034 Clearing activities: 1. restore the natural floristic composition and range of sizes of each species of the regional ecosystem evenly spaced across the application area; and 2. retain mature trees, habitat trees and tall immature trees and thickets.	AO34.1 Clearing does not occur in thickets. AND AO34.2 Clearing retains: 1. all mature trees and habitat trees; 2. a full range of sizes and species typical of the regional ecosystem in the area; and 3. where the number of mature trees plus habitat trees is less than 20 per hectare, tall immature trees to total 20 mature trees, habitat trees and tall immature trees per hectare. AND	

Performance outcomes	Acceptable outcomes	Response
	AO34.3 Clearing does not result in debris stacked or pushed against a mature tree, habitat tree or tall immature tree. AND	
	AO34.4 If clearing immature trees, retain immature trees in each 50 metre by 50 metre area to at least the density specified in table 16.3.4 of this code.	
	AO34.5 If clearing low shrubs: 1. in regional ecosystems where clearing is restricted to low shrubs as specified in table 16.3.4 of this code – clearing retains all immature trees; 2. in regional ecosystems where clearing is not restricted to low shrubs as specified in table 16.3.4 of this code – clearing retains at least the number of immature trees specified in table 16.3.4 of this code; and 3. clearing retains at least 10 per cent of the predominant species that have thickened. AND	
	AO34.6 Mechanical clearing does not occur within 5 metres of the trunk of a mature tree, habitat tree or tall immature tree. AND	

Performance outcomes	Acceptable outcomes	Response
	AO34.7 Clearing is not undertaken by: 1. aerial application of any herbicide; 2. application of a root-absorbed broad spectrum herbicide. AND	
	AO34.8 Chemical clearing does not occur within five metres of the trunk of a mature tree, habitat tree or tall immature tree. AND	
	AO34.9 Any regional ecosystem burn is undertaken in accordance with the fire guideline for the regional ecosystem, as outlined in the Regional Ecosystem Description Database (REDD).	
Clearing limited to specific regional ecosystems and specific clearing methods (managing thickened vegetation)		
PO35 Clearing must be for the purpose of restoring the remnant regional ecosystem and only occur if all of the following apply: 1. clearing is in regional ecosystems prescribed in table 16.3.4 of this code; and 2. clearing is in accordance with the clearing restrictions for the regional ecosystem prescribed in table 16.3.4 of this code. retain mature trees, habitat trees and tall immature trees and thickets	No acceptable outcome is prescribed.	
Clearing limited to specific regional ecosystems (encroachment)		
PO36 Clearing of encroachment does not occur, other than in the regional ecosystems listed in table 16.3.5 of this code.	No acceptable outcome is prescribed.	
Conserving vegetation (encroachment)		
PO37 Clearing activities: 1. result in the restoration of the regional ecosystem; and	AO37.1 Clearing retains all of the following: 1. all mature trees; and 2. all habitat trees; and	

Performance outcomes	Acceptable outcomes	Response
2. retain all habitat trees; and 3. retain all groves; and 4. retain species which make up the natural floristic composition of the regional ecosystem, distributed in a natural pattern.	3. all woody vegetation within a grove, unless it is undertaken by a regional ecosystem burn. AND AO37.2 Any regional ecosystem burn is undertaken in accordance with the fire guideline for the regional ecosystem, as outlined in the Regional Ecosystem Description Database (REDD).	
	AND AO37.3 Clearing does not result in debris being stacked or pushed against a mature tree or a habitat tree.	
	AND AO37.4 Mechanical clearing does not occur within 10 metres of a mature tree or a habitat tree.	
	AND AO37.5 Aerial application of a herbicide does not occur.	
	AND AO37.6 Chemical clearing does not occur within five metres of a mature tree or a habitat tree.	
	AND AO37.7 Root-absorbed broad spectrum herbicides are not applied in any of the following areas: 1. regional ecosystems 11.4.11 and 11.8.11; and 2. within whichever is the greater distance from a mature tree or a habitat tree: a. 10 metres; or b. the distance specified by the approved product label; or	

Performance outcomes	Acceptable outcomes	Response
	c. the safety and use conditions specified by the Australian Pesticides and Veterinary Medicines Authority; and 3. within whichever is the greater distance from a grove: 1. 30 metres; or 2. the distance specified by the approved product label; or 3. the distance specified in the safety and use conditions issued by the Australian Pesticides and Veterinary Medicines Authority.	
Limits to clearing for fodder harvesting (fodder harvesting)		
PO38 Clearing is limited to: 1. the extent necessary to provide fodder for stock; and 2. areas where the stock is located, and the stock have sufficient water.	No acceptable outcome is prescribed.	
PO39 Clearing must only occur: 1. in regional ecosystems listed in table 16.3.6 or table 16.3.7 of this code; and 2. in accordance with the harvesting method limitations for the regional ecosystem listed in table 16.3.6 or table 16.3.7 of this code.	No acceptable outcome is prescribed.	
PO40 Clearing consists predominantly of fodder species.	No acceptable outcome is prescribed.	
Conserving vegetation (fodder harvesting)		
PO41 Clearing is carried out in a way that conserves: 1. remnant vegetation in perpetuity; and 2. the regional ecosystem in which the vegetation is situated.	AO41.1 Clearing does not result in the removal of non-fodder species with a height of four metres or more. AND	
	A042.2 Selective harvesting:	

Performance outcomes	Acceptable outcomes	Response
	- retains all non-fodder species except where the damage is an unavoidable consequence of clearing the selected fodder tree; and - when using a chainsaw in regional ecosystems listed in table 16.3.6 of this code, retains at least one fodder tree for every fodder tree cleared; and - in least concern regional ecosystems listed in table 16.3.7 of this code, retains at least one fodder tree for each fodder tree cleared; and - in of concern regional ecosystems listed in table 16.3.7 of this code, retains at least two fodder trees for each fodder tree cleared. AND	
	AO41.3 Strip harvesting and block harvesting: - where fodder harvesting has previously occurred in an area of a lot, it occurs in all of the following apply: - the vegetation has not been cleared in the last 10 years; and - the average height of the fodder trees is at least 70 per cent of the height of the tallest stands of fodder species in the regional ecosystem; and - the fodder trees that were previously harvested have now attained an average height of at least 4 metres; and - aligns clearing along the contour where practical; and - does not occur in patches of regional ecosystems that are less than 10 hectares in area or less than 500 metres wide. AND	
	AO41.4 Strip harvesting:	

Performance outcomes	Acceptable outcomes	Response
	1. does not result in any strip harvesting area exceeding 50 metres in width; and 2. results in all strip retention areas: a. being preserved along the length of strip harvest areas to a width of at least 1.5 times that of the adjacent strip harvest area; and b. containing fodder species with an average height of at least four metres; and 3. does not result in clearing for machinery access between strip harvest areas exceeding 15 metres in width. AND AO41.5 Block harvesting: 1. does not result in any block harvest area exceeding one hectare; and 2. results in block retention areas: a. being preserved between block harvest areas in accordance with the widths specified in table 16.3.8 of this code; and b. containing fodder species with an average height of at least four metres; and 3. does not result in clearing for machinery access between block harvest areas exceeding 10 metres in width.	
Cleared vegetation (fodder harvesting)		
PO42 Fodder harvesting is carried out in a way that results in the woody biomass of the cleared vegetation remaining where it is cleared.	No acceptable outcome is prescribed.	

Performance outcomes	Acceptable outcomes	Response
Conserving the fodder resource (fodder harvesting)		
PO43 Fodder harvesting is carried out in a way that will conserve the fodder resource.	AO43.1 Clearing does not occur: 1. in an area that has been cleared in the previous 10-year period; and 2. more than once in the same area of a lot; and 3. in more than 50 per cent of the area of the regional ecosystem listed in table 16.3.6 and table 16.3.7 of this code on the lot; and 4. in areas required to be retained under this code, a development approval, any accepted development vegetation clearing code.	
Duration of clearing, preventing land degradation, and maintaining biodiversity, ecological processes and regional ecosystems (Vegetation retention purposes)		
PO44 The duration of clearing for a vegetation retention purpose occurs only for a period that: 1. will not contribute to land degradation; and 2. ensures the ongoing maintenance of ecological processes and biodiversity; and 3. maintains the regional ecosystem.	No acceptable outcome is prescribed.	

State code 25: Development in South East Queensland koala habitat areas

Table 25.2.1 All development

Performance outcomes	Acceptable outcomes	Response
Retaining koala habitat areas		
PO1 Development interfering with koala habitat (including interfering with koala habitat as a result of material change of use and interfering with koala habitat as a result of reconfiguring a lot) does not occur unless the application demonstrates the interfering with koala habitat has: 1. been reasonably avoided; or 2. been reasonably minimised where it cannot be reasonably avoided; and 3. mitigated the impacts of the interfering with koala habitat values.	No acceptable outcome is prescribed.	Complies with PO1 - The proposed alignment of the gravity sewer route is determined by the relevant engineering constraints such as required grade and location of existing services. The proposed impact area has been limited to a lineal 10m wide corridor in order to facilitate the installation of the conditioned sewer pipeline.
Koala sensitive design and connectivity		
PO2 The design and siting of development avoids fragmenting koala habitat areas within the site.	No acceptable outcome is prescribed.	Complies with PO2 - The proposed alignment of the gravity sewer route is determined by the relevant engineering constraints such as required grade and location of existing services. The proposed impact area has been limited to a lineal 10m wide corridor in order to facilitate the installation of the conditioned sewer pipeline.
PO3 The design and siting of development does not result in impediments that restrict the movement of koalas by providing for safe koala movement between highly connected patches of retained koala habitat area.	No acceptable outcome is prescribed.	Complies PO3 - The proposed impact area has been limited to a lineal 10m wide corridor in order to facilitate the installation of the conditioned sewer pipeline.. The proposed impact area within koala habitat is approximately 540 m ² , and contains 55 individual koala habitat trees. The remaining patch of mapped koala habitat that is proposed to be retained is approximately 3500m2. The proposed clearing will therefore not result on impediments that restrict the movements of koalas.
Koala safety from construction activities		
PO4 The construction of the development does not increase the risk of injury or death of koalas.	AO4.1 A koala management plan is provided that includes:	Complies with PO4 - No evidence of koala presence on the site has been observed throughout ecological and vegetation surveys. However, the undertaking of the pre

Performance outcomes	Acceptable outcomes	Response
	- activities that may cause injury or death of koalas from construction activities; and - acceptable measures to avoid and mitigate injury or death of koalas from construction activities Note: To demonstrate compliance with this acceptable outcome, a koala management plan must be prepared by a suitably qualified and experienced person. AND AO4.2 Interfering with koala habitat complies with the sequential clearing and koala spotter requirements under section 10 and 11 of the Nature Conservation (Koala Conservation Plan 2017).	clearing surveys and supervision by qualified spotter catchers (as recommended in the ecological report and vegetation management plan) will ensure that mitigation measures to protect koalas from injury or death are incorporated into the clearing and construction phases, if koalas are found to be present on the site.
Matters of State Environmental Significance		
PO5 Development: - avoids impacts on matters of state environmental significance; or - minimises and mitigates impacts on matters of state environmental significance after demonstrating avoidance is not reasonably possible; and - provides an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact on a matter of state environmental significance that is a prescribed environmental matter. Note: Guidance for determining if development will have a significant residual impact on koala habitat areas is provided in Chapter 2A of the Queensland Environmental Offsets Policy. Guidance for determining if development will have a significant residual impact on all other matters of state environmental significance is provided in the Significant Residual Impact Guideline, Department of State Development, Infrastructure and Planning, 2014.	No acceptable outcome is prescribed.	Complies with PO5 – The proposed impact area has been limited to a lineal 10m wide corridor in order to facilitate the installation of the conditioned sewer pipeline.. The proposed impact area within koala habitat is approximately 540 m² , and contains 55 individual koala habitat trees. The remaining patch of mapped koala habitat that is proposed to be retained is approximately 3500m². Chapter 2A of the Queensland Environmental Offsets Policy states that a significant residual impact on koala habitat in SEQ is described in the State guidelines to be the removal of one non-juvenile koala habitat tree. Based on this definition the proposed clearing of 55 individual koala habitat trees would constitute a significant residual impact and require an offset to be provided.
Category C and R vegetation		

Performance outcomes	Acceptable outcomes	Response
PO6 Development: 1. avoids impacts on category C areas of vegetation and category R areas of vegetation; or 2. minimises and mitigates impacts on category C areas of vegetation and category R areas of vegetation after demonstrating avoidance is not reasonably possible.	No acceptable outcome is prescribed.	Complies with PO6 – no Category C or Category R areas of vegetation are proposed to be cleared.

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