

environmental
management



Rawlings Road, Deebling Heights

EPBC Act Referral

PART B



Defence Housing Australia – Property Provisioning Group

Mr. Rob Winters
9 June 2016
8122

Referral of proposed action

Project title: Rawlings Road Development, Deebing Heights

1 Summary of proposed action

1.1 Short description

This referral pertains to a proposed residential development located within Ripley Valley, adjacent to the Ripley Valley Priority Development Area (designated by **Economic Development Queensland**). The proposed action is for a residential development consisting of 295 new lots with 332 dwellings, with a development footprint of 25.37 hectares located in one of the fastest growing residential areas in Australia. The development will result in the clearing of approximately 15 ha of vegetation already disturbed by existing agricultural uses.

1.2 Latitude and longitude

Id	Longitude (east)	Latitude (south)
Area 1		
1	152.746068373	-27.674264170
2	152.756930880	-27.675842755
3	152.757194869	-27.678165652
4	152.747935392	-27.676814020
5	152.747238010	-27.676118806
6	152.746662110	-27.675375968
7	152.746191375	-27.674576156
Area 2		
8	152.744483009	-27.674034588
9	152.745645361	-27.675644601
10	152.745855170	-27.675935208
11	152.746166423	-27.676366322
12	152.746359624	-27.676586047
13	152.744749673	-27.676353104

1.3 **Locality and property description**

The site is located on Rawlings Road, within Ripley Valley, approximately seven kilometres south of Ipswich City. The site is bound by existing roads, with the Centenary Highway (which connects the Springfield area to the Ipswich and Cunningham Highways) to the west and south, Rawlings Road to the north, and South Deebing Creek Road to the east. The Cunningham Highway is approximately 1 km north of the site.

The Ripley Valley is one of the largest residential growth areas in Australia, with significant development in recent years, in accordance with the Ripley Valley Urban Development Area Development Scheme (UDADS). The site is surrounded by recently developed residential areas, such as those immediately north of Rawlings Road, immediately south of the Centenary Highway, and east of the site, on the other side of South Deebing Creek Road, with many more developments, in the wider landscape. These developments have resulted in the clearing of these surrounding properties resulting in a fragmented landscape throughout much of the Ripley Valley.

The proposed development site is located across two properties previously cleared for agricultural land use, which now largely contain cleared paddocks, with some scattered regrowth and remnant vegetation. The vast majority of land surrounding the site has also been cleared of vegetation for agricultural purposes, or residential development, or are earmarked for urban development in keeping with planning intent.

The referral area covers a development footprint of approximately 25.37 hectares. Refer to **Figure 1** for the site context and **Figure 2** for the site aerial.

1.4 **Size of the development footprint or work area (hectares)**

The total development footprint is approximately 25.37 hectares.

1.5 **Street address of the site**

Rawlings Road, Deebing Heights 4306, Queensland

1.6 **Lot description**

The referral area is made up of two allotments:

Lot Number	Tenure	Proponent
Part of Lot 194 on SP193445 – 10.8 ha	Freehold	DHA
Lot 195 on S3157	Freehold	DHA

1.7 **Local Government Area and Council contact (if known)**

Ipswich City Council – Brett Davey (Team Leader)

1.8 **Time frame**

The project is currently in the process of completing the required State and Local Government approvals. It is anticipated that the subdivision works will be complete by late 2017, with construction beginning in 2017 and continuing through until mid-2019.

1.9	Alternatives to proposed action	X	No. The site is located within the area strategically designated as Future Urban by Ipswich City Council , and is adjacent to the Ripley Valley Priority Development Area under the <i>Ipswich Planning Scheme</i> . The site has efficient and safe access, being located on Rawlings Road, and immediately adjacent to South Deebing Creek Road, and Grampian Road. The site will also be serviced by other proposed infrastructure, such as the Springfield to Ipswich Rail Corridor extension, which has been put in place in association with the expected expansion of the Ripley Valley area. An alternative location would disregard the proposed Ripley Valley infrastructure, and there are no suitable alternative locations currently within the proponent's land holdings.
			Yes, you must also complete section 2.2
1.10	Alternative time frames etc	X	No. There are no alternative timeframes proposed. In keeping with planning intent, there is an increasing and immediate need for urban development in this region.
			Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	State assessment	X	No. The project is not subject to a state environmental impact assessment.
			Yes, you must also complete Section 2.5
1.12	Component of larger action	X	No. The project is not being developed as part of a component of a larger action.
			Yes, you must also complete Section 2.7
1.13	Related actions/proposals	X	No. This referral is not related to any other actions in the region.
			Yes, provide details:
1.14	Australian Government funding	X	No. The proponent has not received funding from the Australian Government to undertake the project.
			Yes, provide details:
1.15	Great Barrier Reef Marine Park	X	No. The proposed action is not located inside the Great Barrier Reef Marine Park.
			Yes, you must also complete Section 3.1 (h), 3.2 (e)

2 Detailed description of proposed action

2.1 Description of proposed action

The proposed action is for a residential development within an area identified as important for future growth. The action would establish a large residential development as per the Ipswich City Council zoning intent for the area, and in accordance with the Ripley Valley Urban Development Area Development Scheme (UDADS). Further, the site is adjacent to the *Ripley Valley Urban Development Area Development Scheme* as designated by **Economic Development Queensland**.

The Ripley Valley is located approximately five kilometres (km) southeast of Ipswich City business district and 30 km southwest of the Brisbane CBD, within the western growth corridor of South East Queensland. In 2009, Ripley Valley was identified under the South East Queensland Regional Plan 2009-2031 (SEQR) by the State Government because of its potential to absorb a vast portion of the regional area's population over the two-decade timeframe. The SEQR indicates a serious population influx to the region, with projections of 120,000 residents needing to be accommodated in more than 50,000 dwellings.

The site relevant to this referral is located on Rawlings Road, Deebling Heights. The referral area is 25.37 ha, constituting the entire lot 195 on S3157 (14.57 ha) and part of Lot 194 on SP193445 (10.8 ha). The proposed development will provide 295 new residential lots with 332 dwellings (refer to **Attachment 1**). The majority of the site is highly disturbed, with historical clearing and agricultural grazing. The development area includes the clearing of 15 ha of this disturbed vegetation, and includes the allocation of over 4 ha as Open Space, which is centred around drainage features in the north and the southeast of the site (**Plan 1**). These Open Space areas will retain existing vegetation, and allow for weed management and infill planting works. Additionally, a small portion of Lot 194 on SP193445 exists to the west of the Centenary Highway, and is not included in the development footprint. This portion of the land represents the most densely vegetated area of the site, and the retention of the vegetation on this site will allow for continued connectivity west of the Centenary Highway which fragments the area. As well as the two large areas of Open Space, there will be additional park areas, trees and landscaping within the development area.

The area surrounding the proposed development site is highly impacted and fragmented. The site to the north of Rawlings Road has been completely cleared and has construction of the residential development has commenced (refer to **Plan 2**). There are also numerous surrounding residential developments proposed and under construction, such as Paradise Heights, Paradise Waters, and Ripley McHale which have all received approval under the EPBC Act to proceed (**Plan 2**). In addition, there are currently proposals for sites to the south of Centenary Highway, and on both sides of Grampian Drive (to the south of the subject site) which are in the process of applying for EPBC Act approvals with several more likely to occur within the next few years. These developments are in line with the State and Local Government planning intent for the area, however, it is noted that the proposed developments surrounding the subject site significantly limit the connectivity and vegetation values remaining in the landscape. Furthermore, the vegetation currently existing on-site is isolated on all sides by highways and roads and is likely to become increasingly isolated as future development occurs.

In terms of environmental impacts and potential impacts on *Matters of National Environmental Significance* (MNES), the action can be described as:

- a) Clearing of 15 ha of disturbed vegetation, including only 1.84 ha of remnant Least Concern vegetation, with the remainder being regrowth and scattered trees;
- b) Removal of some Koala food trees;
- c) Earthworks linked to creating grades to support roads, new allotments and drainage patterns;
- d) Establishment of hard stand areas on land which is currently used for rural purposes; and
- e) Expansion of surrounding land uses by increasing the available property lots by 295, which will potentially increase the number of domestic pets and exotic garden plant species in the area.

2.2 Alternatives to taking the proposed action

There are no alternatives proposed (refer to response 1.9).

2.3 Alternative locations, time frames or activities that form part of the referred action

There are no alternatives proposed (refer to response 1.10).

2.4 Context, planning framework and state/local government requirements

Context

The proposed site is adjacent to the Ripley Valley Priority Development Area, which was declared by the **Department of State Development, Infrastructure and Planning** on 8 October 2010.

Planning Framework

The proposed development site is located within the **Ipswich City Council** Local Government area, in South East Queensland. Accordingly, the project is subject to the provisions of the *Ipswich Planning Scheme* and the Ripley Valley Master Planned Area Structure Plan, as well as Queensland's *Sustainable Planning Act 2009*. It is also zoned as Future Urban under the Ipswich Planning Scheme, therefore is earmarked for residential development.

Current Approvals

There are no current approvals within the referral area.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

No environmental impact assessments are required under Commonwealth or State legislation (refer to response 1.11).

2.6 Public consultation (including with Indigenous stakeholders)

It is proposed that public consultation (such as public notification) will be undertaken as part of the Local Government development application process.

2.7 A staged development or component of a larger project

Not applicable. Refer to response to 1.12 and 1.13.

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

3.1 (a) World Heritage Properties

Description

Not applicable. Refer to Attachment 2.

Nature and extent of likely impact

Not applicable

3.1 (b) National Heritage Places

Description

Not applicable. Refer to Attachment 2.

Nature and extent of likely impact

Not applicable

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

Description

Not applicable. Refer to Attachment 2.

Nature and extent of likely impact

Not applicable

3.1 (d) Listed threatened species and ecological communities

Description

The Protected Matters Search Tool using a two kilometre radius around the site identified the following matters protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) as having potential to occur on site:

- Three Threatened Ecological Communities (TECs):
 - Lowland Rainforest of Subtropical Australia* (critically endangered) – community may occur
 - Swamp tea-tree (Melaleuca irbyana) Forests of South-east Queensland* (critically endangered) – community likely to occur
 - White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* (critically endangered) – community may occur;
- Six listed threatened flora species; and
- Eighteen listed threatened fauna species.

Table 1 provides a summary of these search results, with the full search results provided in **Attachment 2**.

Table 1: EPBC Act Protected Matters Search Tool Results

Threatened Ecological Communities		
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur in the area
Swamp Tea-tree (<i>Melaleuca irbyana</i>) Forest of South-east Queensland	Critically Endangered	Community likely to occur in the area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may to occur in the area
Threatened Species		
Scientific Name	Common Name	Status
Birds		
<i>Anthochaera phrygia</i>	Regent Honeyeater [82338]	Critically Endangered
<i>Botaurus poiciloptilus</i>	Australasian Bittern [1001]	Endangered
<i>Dasyornis brachypterus</i>	Eastern Bristlebird [533]	Endangered
<i>Erythrorhynchus radiatus</i>	Red Goshawk [942]	Vulnerable
<i>Geophaps scripta scripta</i>	Squatter Pigeon (southern) [64440]	Vulnerable
<i>Grantiella picta</i>	Painted Honeyeater [470]	Vulnerable
<i>Lathamus discolor</i>	Swift Parrot [744]	Endangered
<i>Poephila cincta cincta</i>	Black-throated Finch (southern) [64447]	Endangered
<i>Rostratula australis</i>	Australian Painted Snipe [77037]	Endangered
<i>Turnix melanogaster</i>	Black-breasted Button-quail [923]	Vulnerable
Mammals		
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable
<i>Dasyurus hallucatus</i>	Northern Quoll [331]	Endangered
<i>Dasyurus maculatus maculatus</i> (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered
<i>Petrogale penicillata</i>	Brush-tailed rock-wallaby [225]	Vulnerable
<i>Phascolarctos cinereus</i>	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox [186]	Vulnerable
Plants		
<i>Arthraxon hispidus</i>	Hairy-joint Grass [9338]	Vulnerable
<i>Bosistoa transversa</i>	Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable
<i>Notelaea ipsviciensis</i>	Cooneana Olive [81858]	Critically Endangered
<i>Notelaea lloydii</i>	Lloyd's Olive [15002]	Vulnerable
<i>Phebalium distans</i>	Mt Berryman Phebalium [81869]	Critically Endangered
<i>Thesium australe</i>	Austral Toadflax, Toadflax [15202]	Vulnerable
Reptiles		
<i>Delma torquata</i>	Collared Delma [1656]	Vulnerable
<i>Furina dunmalli</i>	Dunmall's Snake [59254]	Vulnerable

An assessment of the likelihood of occurrence was conducted for threatened species and ecological communities and migratory species identified by the PMST search as potentially occurring on-site. The assessment included desktop and field survey methods including searches of relevant database and mapping tools, review of historical ecological reports for the site and region, review of aerial photography and targeted searches for listed species and suitable habitat features. The assessment is detailed in the Ecological Assessment Report (EAR) provided as **Attachment 3** to this referral. Field surveys were conducted across the site in January and February 2016 to assess the habitat features of the site and any potential MNES fauna or flora or suitable habitats. Field survey effort is shown on **Plan 3**.

The assessment ruled out the potential for most of these listed matters to occur. This was primarily due to the combined impacts from:

- The relatively disturbed and cleared nature of the site;
- Lack of suitable niche habitat across the site, such as large undisturbed waterbodies, rocky outcrops, and coastal habitats;
- Influences from surrounding rural-residential developments as well as the increasing and expanding large residential developments within the local area, including immediately adjacent;
- Fragmentation of the site by major roads and highways, such as the Centenary Highway, Rawlings Road, and South Deebling Creek Road;
- Presence of introduced and weed flora species on-site, and high likelihood of dogs in the surrounding areas; and
- Disturbances caused by historic and existing agricultural grazing practices which have resulted in the majority of the proposed development area constituting paddock with some scattered native trees and some patches of regrowth, largely devoid of significant vegetation and significant habitat values.

Overall, the assessment identified the potential for Grey-headed Flying-fox (Vulnerable), Swift Parrot (Endangered), and Koala (Vulnerable) to occur on-site due to the availability of potential habitat or food sources when eucalypts are flowering. No other listed threatened species or TECs are considered likely to occur on-site (refer to the Likelihood of Occurrence Schedule contained in **Attachment 3 – Appendix E**).

Koala (*Phascolarctos cinereus*)

Conservation Status

Under the EPBC Act, Koala populations in Queensland, New South Wales, and the Australian Capital Territory are listed as Vulnerable. Koalas are also listed as Vulnerable under Queensland's *Nature Conservation Act 1992* (NCA). The site is located within the modelled distribution of the Koala, within the 'coastal context,' as per the EPBC Act Referral Guidelines for the Vulnerable Koala.

Habitat

As described in the Koala SPRAT species profile, Koalas inhabit a wide range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by eucalypt species. Under the Koala Referral Guidelines, Koala habitat is defined as '*any forest or woodland containing species that are known Koala food trees or shrubland with emergent food trees. This can include remnant or non-remnant vegetation in natural, agricultural, urban and peri-urban environments.*'

Distribution

Koalas are endemic to Australia and have a known distribution from north-eastern Queensland to south-east South Australia. They are widespread within coastal and inland areas, however, densities of Koalas are higher within coastal areas with higher average annual rainfalls. South-east Queensland is known to support Queensland's highest density of Koalas.

Threats

The three main threats to Koalas have been identified within the SPRAT profile as:

- Habitat loss and fragmentation;
- Vehicle strike; and
- Predation by domestic or feral dogs.

In addition, the prevalence of disease such as the *Chlamydia* virus in many Koala populations has led to symptoms such as infections of the eyes, urinary tract, respiratory tract, and reproductive tract, with the latter having the potential to lead to infertility in females. More recently, Koala Retrovirus (KoRV) has had an increasing impact on most Queensland Koala populations. While most Koalas carry the disease, environmental stresses such as poor nutrition and overcrowding lead to conditions caused by KoRV such as leukaemia and immunodeficiency syndrome.

Field Assessment

In January and February 2016 Senior Ecologists from **Saunders Havill Group** conducted targeted Koala field surveys across the site with weather conditions fine with intermittent showers. The purpose of the survey was to determine the level of Koala usage across the site and to assess the availability of suitable habitat. The assessment involved the following methods:

- Spot Assessment Technique (SAT) developed by Phillips and Callaghan (2011);
- Site flora assessments; and
- Opportunistic searches.

SAT Survey Results

Overall, evidence of Koala usage in the form of scats was low to medium across the site although no individuals were observed throughout the survey period. Four SAT surveys were conducted as shown by the Field Survey Effort presented in **Plan 3**. As provided in **Table 2**, Koala usage across the site was considered to be “Low” in three locations, and “Medium” in one based on the **Australian Koala Foundation** Koala activity level classification table using the East Coast (med-high) Activity Category (**Table 3**). Refer to **Attachment 3 – Appendix G** for the full SAT results. The East Coast (med-high) Activity Category is applicable in habitats dominated by residual, transferral or alluvial type landscapes considered med-high nutrient soils with good water holding capacity (Steve Phillips, personal communication). The soil type mapped across the subject site is chromosols (refer to **response 3.3(c)** and **Attachment 3**), which have medium water-holding capacity and chemical fertility. Additionally, the presence of low-lying land associated with the two mapped waterways on-site would suggest Koala density could be medium to high in this area, supporting the activity category applied.

Table 2: SAT Survey Results

SAT (Spot Assessment Technique) Assessment No.	Evidence of Koala Use (%)	Koala Use (High / Medium / Low)
1	23.33	Medium
2	16.67	Low
3	13.34	Low
4	20.00	Low

Table 3: AKF Koala Activity Level Classification Table

ACTIVITY CATEGORY	LOW USE	MEDIUM (NORMAL) USE	HIGH USE
Area (density)			
East Coast (low)	< 9.47%	≥ 9.47% but ≤ 12.59%	> 12.59%
East Coast (med – high)	< 22.52%	≥ 22.52% but ≤ 32.84%	> 32.84%
Western areas (med – high)	< 35.84%	≥ 35.84% but ≤ 46.72%	> 46.72%

Habitat Assessment Results

Queensland's Koala Habitat Values Map (see **Attachment 3 – Figure 5**), shows that the site contains a mixture of vegetation, with less than half of the site classified as Medium Value Bushland Habitat, approximately one third as Low Value Rehabilitation Habitat, and the remainder as medium Value Rehabilitation Habitat. A small amount is mapped as Non-Habitat. A small patch in the south is mapped as Least Concern RE 12.9-10.2, with the remainder of the site mapped as Category X non-remnant vegetation (refer to **Attachment 3 – Figure 4**). This Least Concern RE is not mapped as providing 'essential habitat' for the Koala or any other listed species.

Site assessment included a GPS Tree Plot of all native trees with a DBH of 300 mm or greater across the site, resulting in the recording of 665 trees, refer to **Attachment 3 – Plan 2**). The flora species recorded during the tree plot included species identified in the **Australian Koala Foundation's National Koala Tree Protection List** for the Ipswich City Local Government area, shown below. Species shown in bold text are considered to be primary Koala Food Trees while the other listed species are Secondary Koala Food Trees. The tree plot recorded three Eucalypt species considered to be Koala Food Trees – including the primary species *E. tereticornis*, and the two secondary species *E. crebra*, and *E. siderophloia*. Refer to **Attachment 3 – Section 4.4** for further detail. It is recognised that for Koalas to viably persist in a given landscape the vegetated area should exceed 100 ha

and contain more than 50% primary food tree species (McAlpine et al. 2006). The number of *E. tereticornis* specimens (primary food trees) recorded on-site made up approximately 15% of the total abundance, therefore did not make up more than 50% of total species abundance, nor does the project site represent a vegetated area exceeding 100 ha, nor is it part of a larger patch of vegetation, beyond the site's boundaries. Consequently, it is considered that Koala activity on-site is likely to be transient, and the site would not allow for a viable *in situ* Koala population.

Local Government Area	Elevation*	Scientific Name and/or subspecies	Common Name	Soil and Location
IPSWICH CITY	2-800	<i>E. biturbinata</i>	Grey Gum	slopes on soils of medium fertility, annual rainfall > 1000 mm
IPSWICH CITY	2-1000	<i>E. crebra</i>	Narrow-leaved red ironbark, Ironbark, Narrow-leaved ironbark	well-drained shallower or sandy/sandy clay soils of medium fertility, >550 mm rainfall
IPSWICH CITY	2-800	<i>E. exserta</i>	Queensland peppermint, Yellow messmate, Messmate, Bendo	sandy drier soils on hills and stony rises
IPSWICH CITY	2-1000	<i>E. grandis</i>	Flooded Gum, Rose Gum	moist, fertile, well-drained, deep, loamy soils of alluvial or volcanic origin, 725-3500 mm
IPSWICH CITY	2-850	<i>E. major</i>	Grey Gum	wet coastal forests on soils of low to medium fertility
IPSWICH CITY	2-900	<i>E. melanophloia</i>	Silver-leaved ironbark	moderately fertile silts, loams, sandy clays on foothills
IPSWICH CITY	2-1200	<i>E. melliodora</i>	Yellow box, Honey box, Yellow ironbox	gentle slopes, foothills or on flats near watercourses. Soils include alluvials, loams and clays, frost and drought tolerant, 500-1400 mm
IPSWICH CITY	2-950	<i>E. microcarpa</i>	Tallowwood	on slopes in deeper moderate to fertile soils, well-drained but moist
IPSWICH CITY	2-1050	<i>E. maluccana</i>	Coastal Grey Box, Grey box, Gum-topped box	loam soils of moderate to high fertility on coastal plains and ranges, tolerates saline soils
IPSWICH CITY	2-850	<i>E. propinqua</i>	Small-fruited Grey Gum	wet coastal forest on soils of low to medium fertility, Drought and frost tolerant
IPSWICH CITY	2-700	<i>E. resinifera</i> ssp. <i>hemilampra</i>	Red mahogany	sandy or well drained fertile soils, Drought and frost tolerant
IPSWICH CITY	2-200	<i>E. seiana</i>	Narrow-leaved Red Gum	poorly drained shallow soils, swampy sandy soils
IPSWICH CITY	2-700	<i>E. siderophloia</i>	Ironbark, Broken Back Ironbark	wet forest on soils of moderate fertility
IPSWICH CITY	2-800	<i>E. tereticornis</i> ssp. <i>tereticornis</i>	Forest red gum, Blue gum, Red iron gum	alluvial soils, 600-2500 mm, tolerates salt-laden coastal winds, tolerates saline soils, medium-heavy clays, does not tolerate waterlogged soils

Bolded entries indicate primary tree species

Weeds and Disturbance

Due to past land clearing and agricultural practices, the site contained a high number of introduced and weed species (50 species), including seven species declared under state government (seven) and 15 local government listed environmental weeds. The declared pests under the *Land Protection (Pest and Stock Route Management) Act 2002* (LPA) include four Class 2 weeds identified as *Ambrosia artemisiifolia* (Annual Ragweed), *Baccharis halimifolia* (Groundsel Bush), *Bryophyllum delagoense* (Mother-of-millions), and *Senecio madagascariensis* (Fireweed). The other three declared pests are Class 3 weeds and identified as *Asparagus africanus* (Ornamental Asparagus), *Lantana camara* (Lantana), and *Lantana montevidensis* (Creeping Lantana). Other disturbances included significant vegetation clearing for pastoral purposes (refer to **Figure 2**), establishment of residences and associated buildings, roads on three sides of the site, and significant impacts from surrounding land uses and development. Refer to **Attachment 3** for more detail.

Summary of Findings

The key findings from the field assessment are:

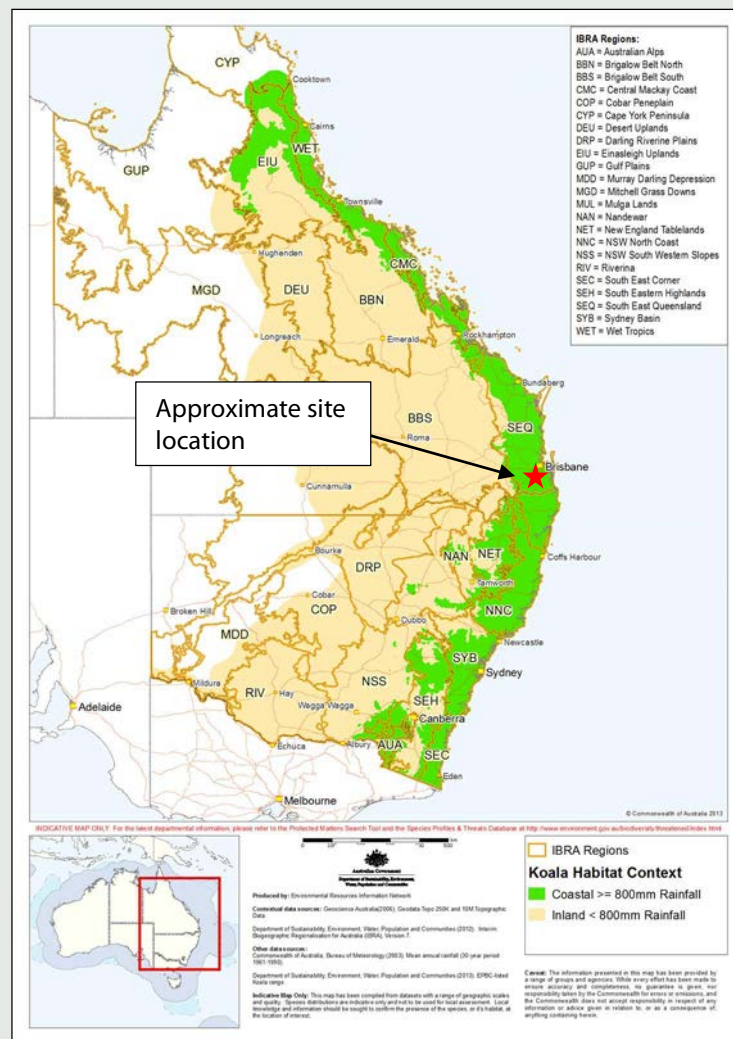
- No Koalas were observed on or surrounding the site;
- SAT surveys suggest Low to Medium usage throughout the entire site;
- Flora assessment did not return a high proportion of primary Koala food trees considered suitable for Koala persistence;
- Overall, the site was significantly disturbed as a result of historical vegetation clearing and thinning, disturbance from ongoing grazing activities, and impacts from surrounding development; and
- The site is not considered to provide ideal habitat for Koalas.

The following analysis is an assessment against the EPBC Act Referral Guidelines for the Vulnerable Koala.

What is the geographic context of the proposal site?

A search of the EPBC Protected Matters Search Tool within a 2 km buffer lists the Koala as potentially located on-site (refer to **Attachment 2**). As per the EPBC Act Referral Guidelines for the Vulnerable Koala, the site is therefore considered to fall within the modelled distribution of the Koala.

The Koala Referral Guidelines separate the geographical context into two zones, inland and coastal, based on the 800 mm per annum rainfall isohyet. The Rawlings Road site is mapped within a “coastal” area as per the distribution map (below). Therefore, the coastal habitat attributes contained in the Koala Referral Guidelines are relevant when using the Habitat Assessment Tool.



Does the site contain habitat critical to the survival of the Koala?

The site contains disturbed vegetation of a 15 ha area, which largely consists of regrowth vegetation, with a small patch (1.84 ha) of remnant (Least Concern) vegetation. The remnant vegetation is RE 12.9-10.2, with the short description *Corymbia citriodora subsp. variegata* +/- *Eucalyptus crebra* open forest on sedimentary rocks. This RE is not considered to be Essential Habitat for the Koala under the Queensland *Vegetation Management Act 1999* (VMA) (refer to **Attachment 3 - Figure 4**). Of the vegetation on-site, primary food trees (*E. tereticornis*) make up approximately 15% of the canopy, therefore, non-primary and secondary food tree species made up the remaining 85% (primarily including *Corymbia citriodora* (43%), with *Eucalyptus crebra* (31%), *Corymbia intermedia* (5%), *Corymbia tessellaris* (3%) *Acacia disparrima* (1%), *Eucalyptus siderophloia* (0.5%), and dead trees (2%).

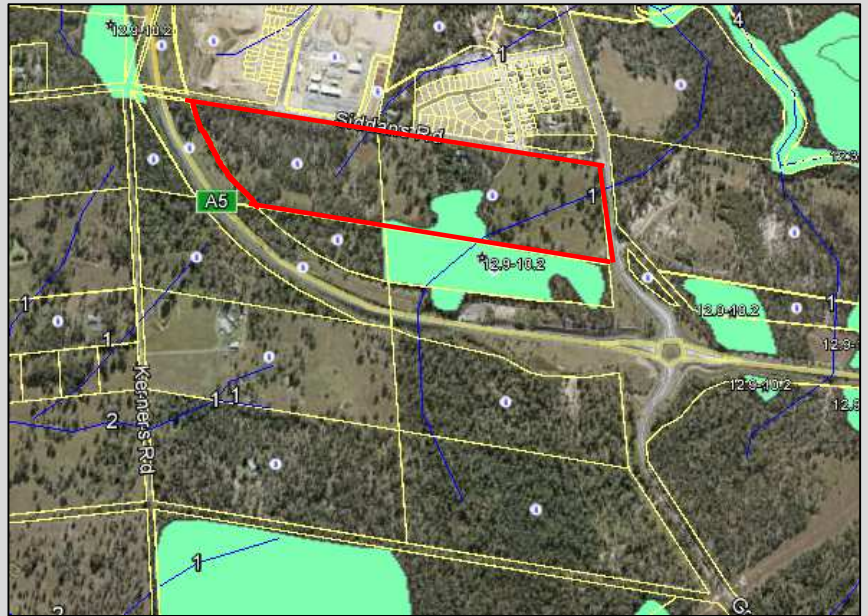
Assessments

In accordance with the EPBC Act Referral Guidelines for the Vulnerable Koala, any habitat which receives a score of **5 or more** using the Koala Habitat Assessment Tool is considered to be critical habitat. The proposed site has scored a habitat assessment score of 5 based on the calculations and descriptions in **Table 4**.

Table 4: Koala Habitat Assessment Tool

Attribute	Score	Comment
Koala occurrence	+2 (High)	<p><u>Desktop</u></p> <p>A Protected Matters Search (PMST) within a two kilometre radius of the subject site identified the Koala as having potential to occur. The Species Profile and Threats Database (SPRAT) for the Koala identifies that the highest density of Koala populations within Queensland occurs within the South-East Queensland region. Population estimates have focused on the Koala Coast and Pine Rivers area, however, Koalas are known to occur within the Ipswich City Council area.</p> <p>A Wildlife Online point search with a 2 km buffer generated under the Queensland <i>Nature Conservation Act 1992</i> (NCA) identified 36 Koala records within a two kilometre radius of the study area. The date pertaining to these observations is unknown. The Atlas of Living Australia shows only one preserved Koala specimen within a 5 km radius of the study area. Applying a 10 km radius search area results in three records, all dating to 1972 or 1975, suggesting there have been no recent records listed. Further, the site is not mapped as containing essential habitat for the Koala under the VMA, and the VMA Vegetation Management Supporting Map does not show any Koala records on, or in proximity to, the site.</p> <p><u>On-ground</u></p> <p>An assessment for Koala usage was conducted during site investigations in January and February 2016. No Koalas were observed on or surrounding the site. Koala scats were found on-site and four SAT surveys were conducted. Applying the SAT methodology (Phillips & Callaghan 2011) and the east coast (med-high) population density category (Table 3 above) due to the prevailing landscape and vegetation structure, three of the four sites where scats were found showed 'Low Use' (< 22.5%) and one found 'Medium Use' (≥ 22.52 but < 32.84). Refer to Table 2 above for full SAT results and Attachment 3 – Appendix G.</p> <p>As there is evidence of one or more Koalas within two kilometres of the zone within the last five years, the 'Koala Occurrence' attribute has been given a score of +2 (High).</p>
Vegetation composition	+2 (High)	<p><u>Desktop</u></p> <p>The Queensland Government Vegetation Management Supporting Map (Regional Ecosystem 8.0 (RE)) identifies the study area as containing 1.84 ha of Category B (Least Concern) remnant vegetation RE 12.9-10.2 which is described as <i>Corymbia citriodora subsp. variegata</i> +/- <i>Eucalyptus crebra</i> open forest on sedimentary rocks. The remaining 23.5 ha of the site contains non-remnant vegetation with some patches of regrowth vegetation. Site surveys confirmed the mapped RE to be accurate, with the majority of the site not considered to be remnant vegetation (refer to Attachment 3).</p> <p><u>On-ground</u></p> <p>On-ground surveys identify the site as woodland with <i>Corymbia citriodora</i> being the dominant species, followed by <i>Eucalyptus</i> and other <i>Corymbia</i> species making up the rest of the canopy species across the site. Non-remnant areas on-site were highly disturbed, containing regrowth from historical clearing. Large areas of the site have relatively young tree canopy regrowth present, with scattered larger mature trees.</p> <p>The GPS Tree Plot (refer to Attachment 3 – Section 4.4.1) recorded only 15.3% of trees with a DBH over 300 mm to be primary Koala food trees (<i>E. tereticornis</i>), with approximately 31.4% being secondary food tree species (<i>E. crebra</i> and <i>E. siderophloia</i>). No other species within the AKF food tree list as primary or secondary occurred on-site.</p>

		<p>For the majority of the referral area, non-primary and secondary food tree species made up 85% of the canopy cover, and this primarily included <i>Corymbia citriodora</i>, followed by <i>Corymbia intermedia</i>, <i>Corymbia tessellaris</i>, <i>Eucalyptus crebra</i>, <i>Eucalyptus siderophloia</i>, and <i>Acacia disparrima</i>.</p> <p>As the site contains forest or woodland with 2 or more known Koala food tree species in the canopy, the 'Vegetation Composition' attribute is given a score of 2 (High).</p>
Habitat connectivity	0 (Low)	<p>The application area is bordered by the Centenary Highway to the west, Rawlings Road to the north, and South Deebling Creek Road to the east. The Centenary Highway is also south of the site, approximately 200 m away. These major roads, with Koala exclusion fencing, act as significant physical barriers for Koala movement and remove opportunities for safe passage between the site and potential habitat patches to the east and south. Land west of the site is generally cleared land used for grazing and rural residential areas with limited remnant vegetation. The property immediately to the south contains some remnant vegetation (the rest of the Least Concern RE polygon), however the Centenary Highway bounds the south and west of the property and South Deebling Creek Road bounds the east, thereby reducing any connectivity vegetation on this site retains.</p> <p>As mentioned previously, the majority of land covered by the Ripley Valley PDA and adjoining the PDA is slated for development, with many projects within approvals or site preparation phases (refer to Plan 2). As a result, connectivity values surrounding the project site will only further decrease. While the 1.84 ha patch of remnant vegetation on-site is part of the patch existing on the property to the south, the polygon is fragmented by the Centenary Highway to the south and west, South Deebling Creek Road to the east, and Rawlings Road to the north (see image below). Therefore, this vegetation is not considered a connectivity feature (or part of a corridor connecting habitats) and this site does not augment existing connectivity or movement of Koalas across the landscape.</p> <p>Both mapped watercourses on-site (shown in image below) are considered to represent drainage features, not watercourses. They are both highly modified, with no waterway-associated vegetation present, and the northern mapped water feature constitutes of a constructed dam. Neither are considered to provide an effective riparian corridor for Koala movement due primarily to the lack of riparian vegetation present, and the fragmentation by the highway and surrounding roads. It is noted, however, that the drainage feature does provide limited connectivity values beyond the site boundary. The proposed development layout includes the establishment of Open Space in the areas of both mapped watercourses which will retain vegetation and include rehabilitation activities.</p>



The site is not considered to be within a contiguous landscape of ≥ 300 ha, and as such, the 'Habitat Connectivity' attribute is given a score of 0 (Low).

Key existing threats

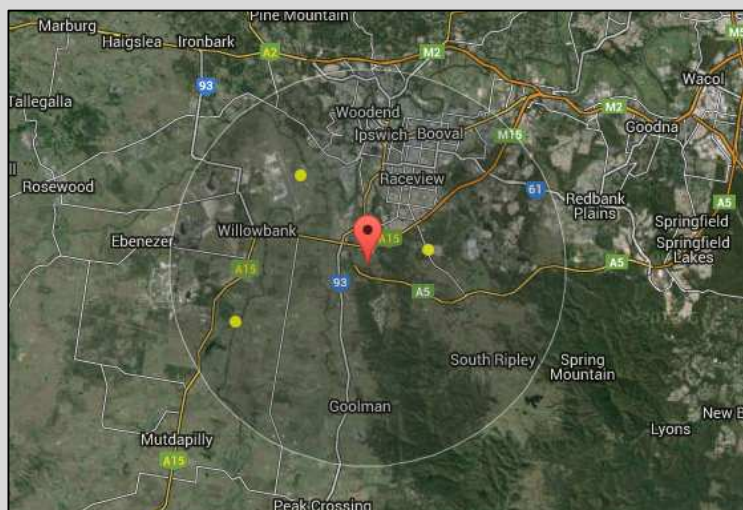
+1 (Medium)

Desktop

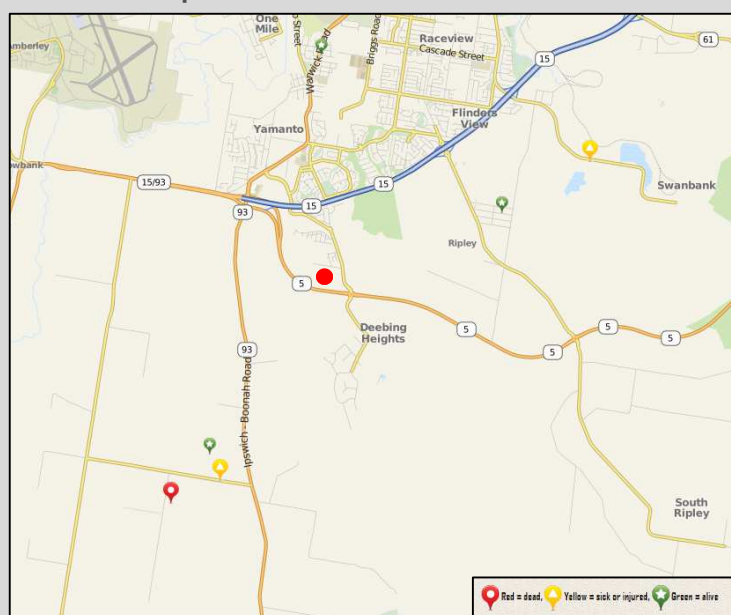
There are a number of obvious threats to the survival of the Koala on and around the project site. Such threats include vehicle strikes and dog attacks, associated with the location of nearby main roads, and the increasing residential development in the adjacent areas. These threats will increase as the Ripley Valley area is further developed, as per State and Local Government planning intent.

The **Atlas of Living Australia** map of Koala records (below) shows three records of Koalas within a 10 km radius of the site, however these are dated in 1972 and 1975, therefore, are not contemporary. **Koala Tracker** is a crowd sourced National Koala sighting record. Records from the Koala Tracker National Koala Map (below) show three records of live Koala sightings within 5 km of the project site – approximately 3.3 km northeast in September 2012, 4.1 km north in September 2012, and 3.8 km southwest in June 2010. There are two records nearby of sick / injured Koalas, one sick by disease approximately 5.6 km to the northeast in September 2012, and one injured by car approximately 4.2 km southwest in August 2013. One record shows a Koala dead by disease, in March 2010, approximately 5.1 km to the southwest.

Atlas of Living Australia Map



Koala Tracker Map



On-ground

The site is surrounded by busy roads, including highways, which suggests high vehicle usage in the area, which is presumed to increase as development within (and adjacent to) the PDA increases. In addition, there appears to be a significant level of dog ownership on residential lots in the nearby vicinity, which may also increase with increased population in the area. Data provided within the **Ipswich Koala Protection Society (IKPS)** newsletters indicate that dog attacks and vehicle strikes on Koalas are frequent within the surrounding areas of Amberley and Willowbank. As such, the area surrounding the proposed action site is considered to contain a number of existing threats which diminish the value of the habitat on the site. In addition, disease appears to be prevalent in the local Koala population, with many Koalas listed in **IKPS** newsletters as suffering from pneumonia, diseased ovaries and uterus, cystitis, conjunctivitis, and kidney failure. While there is evidence of threats to Koalas within the extended local landscape, there were no records of Koala rescues from Deebling Heights, however, there are also limited records of healthy Koalas in this area. It is anticipated that as the area continues to develop, vehicle strikes could be more prevalent if Koalas are drawn close to the major road networks and residential areas.

As there is evidence of infrequent or irregular Koala mortality from vehicle strike or dog attack at present in areas that score 1 or 2 for Koala occurrence, the “Key Existing Threats” attribute has been given a score of +1 (Medium).

Recovery value

0 (Low)

The vegetation on the proposed development site is considered unlikely to be important in achieving the Interim Recovery Objectives for the coastal context given its foundation on the ability to protect and conserve large connected areas of Koala habitat. Koala Context Attributes listed under Interim Recovery Objectives in *Table 1* of the Guidelines for coastal areas are to:

1. Protect and conserve large, connected areas of Koala habitat, particularly large connected areas that support Koalas that are:
 - of sufficient size to be genetically robust or operate as a viable sub-population, or;
 - are free of disease or have a low incidence of disease, or;
 - are breeding.
2. Maintain corridors and connective habitat that allow movement of Koalas between large areas of habitat.

		<p>The site does not contain any large areas of connected Koala habitat. While there is some remnant vegetation on-site (1.84 ha), which is part of the polygon mapped on the neighbouring property, this polygon is completely isolated and fragmented from other vegetation, by highways and main roads on all sides. Furthermore, there is encroaching urban development on the other side of the roads to the north, east, and south (refer to Plan 2), and cleared rural agricultural grazing properties to the west. The remainder of the proposed site contain paddock with scattered trees. Aerial imagery confirms that most of the land surrounding the site (particularly to the north, east, and west) has been subject to clearing and retains very few scattered trees, resulting in providing low value Koala habitat. The roads and development surrounding the site dramatically limits connectivity and movement opportunities to and from the site. Further, the site does not serve as a corridor due largely to fragmentation by Centenary Highway to the west and south, Rawlings Road to the north, and South Deebling Creek Road to the east.</p> <p>There are two stream order 1 watercourses mapped on-site. These watercourses were confirmed during site investigations to constitute drainage features (under the <i>Water Act 2000</i>) as they did not contain defined bed and banks. There was also no waterway-associated vegetation present. However, the proposed development includes the establishment of approximately 4.2 ha of Open Space, centred around these mapped drainage lines, which will include the retention of native vegetation present, and rehabilitation and planting activities (refer to Plan 1). The retention and rehabilitation of these Open Spaces has the potential to provide for tenuous connectivity throughout the mostly disturbed broader landscape.</p> <p>The site is located within the Ripley Valley, adjacent to the Ripley Valley PDA. As such, the site is proposed to occur within one of the largest industry growth areas in Australia, and an area that has undergone significant development in recent years. The majority of land surrounding the site has been historically cleared of vegetation values for pastoral purposes, and is now also slated for urban development in light of the Ripley Valley PDA designation. Given this planning intent, it is highly unlikely that the site retains recovery values outlined in the Interim Recovery Objectives.</p> <p>The proposed residential developments and highways and roads surrounding the site significantly limit connectivity and movement opportunities to and from the site, resulting in the site remaining as an isolated patch of remnant and regrowth vegetation. Overall, the site is considered to retain little opportunity to achieve the interim recovery objectives for coastal areas, which is based primarily on maintaining large areas of Koala bushland and connectivity.</p> <p>Given the habitat present on site is not considered to be important for achieving the interim recovery objectives for the relevant context, the "Recovery Value" attribute has been given a score of 0 (Low).</p>
Total	5	As the habitat score is five or more, this site is considered to provide Critical Habitat for the Koala.

Will the action adversely affect habitat critical to the survival of the Koala?

The above assessment concludes that the site contains areas of critical habitat. The Koala Referral Guidelines also require the adversity of impacts to be assessed. This process follows a "yes/no" flowchart as shown in the Guidelines, with responses provided below:

1. Does your impact area contain habitat critical to the survival of the koala (habitat score ≥ 5).

Yes. The proposed development area contains habitat that received a habitat score 5 (refer to **Table 4** and **Plan 4**).

2. Does the area proposed to be cleared contain known Koala food trees?

Yes. Habitat assessments conducted across the site found that site canopy trees contain species that are considered to be Secondary Koala Food Trees with some Primary Koala Food Trees.

3. Are you proposing to clear ≤ 2 hectares of critical habitat?

No. The action requires the clearing of approximately 15 ha of critical habitat as defined by the koala referral guidelines (refer to **Plan 4**).

4. Are you proposing to clear ≥ 20 hectares of habitat that scored ≥ 8 ?

No. The action requires the clearing of approximately 15 ha of defined critical habitat that scored less than 8.

5. Assessment on Characteristics

Reviewing the site against the characteristics outlined in the flowchart indicates the proposed action displays characteristics that reduce adverse effects including:

- 15 ha is considered to be a smaller area of habitat (< 20 ha);
- Although the proposal requires the clearing of approximately 15 ha of habitat of variable quality, the vast majority is non-remnant vegetation, with only 1.84 ha of remnant vegetation to be cleared;
- The habitat score of 5 for the site is the lowest-range score for “critical habitat”;
- Only historical evidence of Koala activity in the form of scats was recorded on-site, with no Koalas recorded within 3 km, and records from within 5 km being over two years old;
- The mapped watercourses represent drainage features on-site, and do not contain riparian vegetation. Notwithstanding, these two water features will be retained with the proposed development within the Open Space areas to be rehabilitated; and
- The required clearing will not result in fragmentation of a habitat area from a larger habitat area as the vegetation on-site forms a small patch of remnant vegetation that is completely isolated and fragmented from any other remnant vegetation by major arterial roads and highways on all sides, and encroaching residential development on most sides.

Overall, the adversity of impacts that may occur as a result of the proposed development on Rawlings Road are minimised due to the very low-range habitat value score of critical habitat on the site, the total area to be cleared (15 ha), no Koalas being recorded on-site, and the significant existing barriers to Koala dispersal to and from the site.

Could the action interfere substantially with the recovery of the Koala?

In addition to considering adverse impacts on critical habitat, the potential for the action to interfere with the recovery of the Koala must also be considered as per the Koala Referral Guidelines. Possible impacts listed in the guidelines that must be considered include:

- Introducing or increasing koala fatalities due to dog attacks;
- Introducing or increasing the risk of vehicle strike;
- Facilitating the introduction or spread of disease and pathogens;
- Creating a barrier to movement; and
- Degrading critical habitat due to hydrological changes.

These impacts, as well as mitigation measures to address impacts, are discussed in **Table 5**.

Table 5: Potential Impacts**Dog Attack**

The development of a residential estate is likely to increase the number of dogs entering the area. However, it is expected that dog activity already occurs on surrounding properties, and possibly on the subject site. The residential development will implement appropriate governance and guidance regarding dog ownership to new home buyers, ensuring interaction between dogs and Koalas is mitigated, and therefore it is not expected that dog attacks on Koalas will increase as a result of the development.

No residual impacts are identified.

Vehicle Strike

Vehicle activity will increase in the area, and through the site, as a result of the development. However, given the site is surrounded by Major roads and highways, as well as various forms of urban development, no Koalas were recorded on-site and very few Koalas have been recorded in the last few years within 5 km of the site, and the relatively small size of the proposed development, lack of interaction between vehicles and Koalas is considered unlikely to increase significantly as a result of the development. Road design, signage, and the imposition of a low vehicle speed will help mitigate any potential risks to Koalas.

No residual impacts are identified.

Disease and Pathogens

Most of South East Queensland's Koala populations (including within the Ipswich area) are already known to have a high prevalence of *Chlamydia* infection and Koala Retrovirus. The symptoms of these diseases are often observed within Koala populations undergoing environmental stresses, such as overcrowding and poor nutrition. The project is unlikely to cause pressure on a local Koala population (noting that no Koalas have been seen on-site or in close proximity to the site) to the point where these diseases manifest. Further, the project is extremely unlikely to introduce or spread disease or pathogens into any Koala habitat areas.

No residual impacts are identified.

Barriers to Dispersal

While the proposal will restrict Koala movement through the site, given that the vegetation existing on-site is already highly isolated and fragmented from any other vegetation due to surrounding roads on all sides of the vegetation, it is arguable that this will not result in impacts to dispersal. As it currently stands, the site is largely fragmented from other habitat patches due to these roadways and encroaching development, and therefore there is no means currently for the safe movement of the Koala to or from the site. In addition, the surrounding properties are earmarked for residential development in line with planning intent, with properties to the north of Rawlings Road already established. This surrounding development will further isolate any vegetation on-site. As such, the impacts caused by potential barriers to dispersal within the development area are considered to be minimal.

No residual impacts are identified.

Hydrological change

There will be an increase in hardstand areas across the site, due to the establishment of a residential development. Such increase in hardstand areas has the potential to affect the hydrology currently on-site, however management plans will be implemented to address the requirements of State and Local government guidelines to ensure that impacts are minimised. The proposed development will retain Open Space areas where the watercourses are mapped on-site, which will assist to minimise changes to hydrology in these areas. It is anticipated that the project is unlikely to result in hydrological changes that will further degrade the site or impact neighbouring areas of potential Koala habitat.

No residual impacts are identified.

Field and desktop assessments against the Referral Guidelines for the Vulnerable Koala were utilised for the following Significant Impact Assessment (**Table 6**) based on the *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*.

Table 6: Significant Impact Assessment – Koala

Significant Impact Criteria	Description	Impact
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1. Lead to a long term decrease in the size of an important population of a species.	<p>While the site does contain some habitat assessed to be critical habitat for the Koala, the potential impact area is approximately 15 hectares of habitat with a score of 5, which is the lowest range score on the spectrum. Of relevance, the proposed location for the referred action is adjacent to the Ripley Valley Priority Development Area, which means that the site will become more fragmented from the surrounding landscape due to current and future urban development. In addition, field assessments have failed to locate the Koala on-site, despite targeted searches, with only evidence of Low to Medium Koala usage, recorded in the form of scats. Available databases did not have records of the Koala being sighted within 3 km of the site, and the site is completely isolated from other vegetation. As such, Koalas that might utilise the site would be considered transient and more likely to inhabit more optimal habitat to the south of the site.</p> <p>It is considered unlikely that an important population is present on-site, and so the action is not expected to decrease the size of an important population.</p>	No significant impact likely
2. Reduce the area of occupancy of an important population.	<p>An important population is not considered present on the subject site for the following reasons:</p> <ul style="list-style-type: none"> ▪ No Koalas have been recorded on-site, or immediately adjacent to the site (only evidence of their activity has been recorded) ▪ The site contains critical habitat scored as the lowest-range quality, with more optimal habitat south of the site ▪ The vegetation on the site is severely fragmented by highways and roads on all sides, and encroaching development in the wider landscape ▪ Koala records in the vicinity of the site include specimens carrying disease <p>Further, the exclusion of any development occurring on the western portion of the property (to the west of the Centenary Highway – refer to Plans 1 and 4) will facilitate continued connectivity in a north - south direction, outside of the majority of proposed development areas. As such, the proposal is not considered to reduce the area of occupancy of an important population.</p>	No significant impact likely
3. Fragment an existing important population into two or more populations.	<p>The action is proposed to occur on a site which is already significantly fragmented from surrounding habitat (Plan 2). Vegetation on the subject site adjoins some vegetation on the property to the south, however, these properties are isolated from any other vegetation, due to roads on all sides. At best, the site provides disjointed vegetation with no connectivity value on any side due to the adjacent Centenary Highway, Rawlings Road, and South Deebling Creek Road. Furthermore, an important population of the Koala is not considered to utilise the site given the low number of specimen records in the vicinity, and no evidence of the Koala recorded on-site. Regardless, it is anticipated that the retention of the western area and of the Open Spaces within the development will maintain current connectivity values for the site and mitigate further potential fragmentation.</p>	No significant impact likely
4. Adversely affect habitat critical to the survival of a species.	<p>While the proposed action results in the removal of Koala habitat, this habitat is disturbed by historical pastoral practices, and current grazing activities. It is also subject to edge effects from surrounding major arterial roads and increasing urban development. Further, this habitat is not considered to be unique or of special value (refer to Attachment 3). The retention of the Open Space areas within the development and the western portion of the property will ensure that areas with the potential to provide connectivity value are protected, and not developed. Given the disturbed nature of the site and zoning as Future Urban, adjacent to a Priority Development Area, the habitat on-site is not considered of importance to the interim recovery objectives for the Koala. Although it is acknowledged that 15 ha of critical habitat for the Koala (score of 5) as assessed under the Guidelines will be cleared, site habitat is not considered to constitute high or unique value, and, given the extent of more optimal habitat in the surrounding Beaudesert-Ipswich landscape, it is considered that the extent of potential loss will not adversely affect the survival of the species.</p>	No significant impact likely

5. Disrupt the breeding cycle of an important population.	Detailed surveys on site did not identify any breeding Koalas. Evidence of Koala activity on-site was recorded in the form of scats, however, no individuals were recorded despite targeted searches. As such, the site is considered to most likely support transient individuals unlikely to constitute a breeding population or an important population. The development layout excludes development on the property to the west of the Centenary Highway, and includes two areas of Open Space within the development, therefore, it is considered that these areas will maintain current connectivity values for potential dispersal. It is considered unlikely that the breeding cycle of an important population will be disrupted by the proposed action.	No significant impact likely
6. Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	The habitat on this site was not recorded to contain any special or unique values. The removal of habitat at the site habitat is unlikely to have a significant impact on the availability of habitat throughout the broader landscape, given the vast quantity and availability of Koala habitat to the south which is a large area of more than 10,000 hectares of vegetation, with a range of habitat and landscape features. Individuals utilising the proposed development site are considered to be transient and not part of an important population. Further, the retention of vegetation as Open Space within the development, and as undeveloped land to the west of the development will provide continued connectivity values to the Koala, if present. As such, the proposal is not considered likely to lead to species decline.	No significant impact likely
7. Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	Domestic dogs have the potential to become feral, are considered a major threat to Koala survival. Dogs are known to be present in the surrounding landscape. The proposed action is expected to result in an increase in the density of domestic dogs in the area, however, their potential to increase impacts on Koalas will be mitigated by effective governance. Neighbouring residential developments will also result in an increase in the number of dogs in the area. Evidence of invasive <i>Lantana camara</i> (a recognised hindrance to Koala dispersal) is present on-site, with the properties to the south noted as having significant infestations. It is likely that this invasive plant will be suppressed under the required rehabilitation efforts for the ongoing approval of the proposed development on the subject site. It is unlikely that the proposal will augment invasive species impacts already present in the area.	No significant impact likely
8. Introduce disease that may cause the species to decline.	Most of South East Queensland's Koala populations are recorded as having a high prevalence of Chlamydia infection and Koala Retrovirus (KoRV). Sick and dead by disease Koalas have been recorded in the vicinity of the referral area. As such, the project is considered unlikely to cause pressure on the local Koala population to the point where these diseases manifest. Further, the project is extremely unlikely to introduce or spread disease or pathogens into Koala habitat areas.	No significant impact likely
9. Interfere substantially with the recovery of the species.	Assessment has concluded that the proposed action is unlikely to interfere substantially with the recovery of Koala (refer to Tables 4 and 5), primarily due to the relatively disturbed nature of the site, its current relatively high level of fragmentation, encroaching development (in line with planning intent) and the lack of records of the Koala utilising the site, or areas immediately adjacent.	No significant impact likely

Koala summary

Targeted field surveys (as per EPBC Act guidelines) were conducted across the site and resulted in no Koala observations on, or surrounding, the referral area. In addition, four SAT transects were performed and found Low to Medium Koala usage levels for the site (refer to **Table 2**). This suggests that the site has a low usage by Koalas, corresponding with the isolated and fragmented nature of the vegetation available on-site. Flora assessment and tree plots concluded that the site is dominated by species that are not identified as Koala Food trees, however some Primary and Secondary Koala Food Trees were recorded throughout the site. The critical habitat on the site was given a habitat assessment score of 5 using the Koala Referral Guidelines (refer to **Table 4**).

As discussed above, a number of factors diminish the adversity of impacts caused by the proposed clearing of 15 ha of score 5 critical habitat as defined by the koala referral guidelines. These factors are summarised as:

- Although the proposal requires the clearing of approximately 15 ha of habitat of variable quality (see **Plan 4** and **Attachment 3** for data), only 1.84 ha of Least Concern remnant vegetation will be cleared, and approximately 4 ha of critical habitat will be retained (refer to **Plan 4**);
- 15 ha is considered a smaller area of clearing (<20 ha);
- The habitat score of 5 for the site is the lowest possible score for “critical habitat”;
- The western portion of the property, across the Centenary Highway, is not proposed to be developed as part of this action (refer to **Plan 4**). Additionally, two areas of Open Space (totaling 4.2 ha) are proposed for inclusion in the development and will retain existing vegetation and include rehabilitation activities. These three areas will assist to provide connectivity values through the landscape and ensure long-term habitat viability should Koalas be present;
- No Koalas were observed on-site; only historical evidence of Koala activity in the form of scats was recorded;
- The two mapped watercourses (in the north and the southeast of the site) will be retained and rehabilitated as Open Space (see **Plan 1**);
- As vegetation on this site and the neighbouring property is completely isolated from any other vegetation due to roads and highways on all sides, the clearing of this vegetation will not result in fragmentation of a habitat area from a larger habitat area; and
- Vegetation clearing will be undertaken sequentially under the guidance of a fauna spotter-catcher. This will ensure that the potential for injury or death to Koalas, if present, as a result of clearing is minimised.

Grey-headed Flying-fox (*Pteropus poliocephalus*)

Pteropus poliocephalus (Grey-headed Flying-fox) requires foraging resources and roosting sites to persist. The species is known to use a wide variety of habitats including subtropical and temperate rainforests, tall sclerophyll forest and woodlands, heaths, swamps and also urban and agricultural areas where food trees have been cultivated. The species is highly adaptive with its diverse native diet, which it can supplement with introduced species. The species is known to forage within a variety of habitats and locations as each resource does not consistently produce food throughout the entire year. The closest known roost site to the proposed development site is located at the end of Box Street, Yamanto, along Deebling Creek. This roost is approximately 2.6 kilometres north of the application site and was confirmed as utilised by Grey-headed Flying-fox in May 2015.

A small amount (1.84 ha) of the referral site is mapped as containing Least Concern remnant vegetation (RE 12.9-10.2), with the remainder of the site consisting of non-remnant vegetation. *Pteropus poliocephalus* (Grey-headed Flying Fox) was not recorded during site surveys. The habitat characteristics of the site are considered to provide only marginal foraging resources for this species, as follows:

- Regrowth and remnant vegetation patches on-site are dominated by *Corymbia citriodora* (Spotted Gum) and *Eucalyptus crebra* (Narrow Leaf Ironbark), with *Eucalyptus tereticornis* (Forest Red Gum), and *Corymbia intermedia* (Pink Bloodwood) food trees scattered throughout.
- It is considered likely that foraging by *Pteropus poliocephalus* (Grey-headed Flying Fox) could occur on the application site at various times throughout the year, depending on flowering. The dominant flora species observed throughout the application site are shown below with the period that species is expected to flower:
 - Corymbia citriodora* (Spotted Gum) – July to September
 - Corymbia intermedia* (Pink Bloodwood) – December to May
 - Eucalyptus crebra* (Narrow Leaf Ironbark) – March to May
 - Eucalyptus tereticornis* (Forest Red Gum) – June to November
- There is an abundance of winter flowering resources in the broader landscape which would suggest that the habitat provided by the subject site represents only a small proportion of these available resources. It is therefore considered unlikely that individuals would be exclusively reliant on the resources supported by the subject site.

A Draft EPBC Act Policy Statement – camp management guidelines for the Grey-headed and Spectacled Flying-fox (Draft Guidelines) is available and summarises the decision process in considering the likelihood of a significant impact on the Grey-headed Flying-fox or Spectacled Flying-fox schematically. The Draft Guidelines are specifically for the assessment of impacts on Flying-fox camps. No roosting sites are known to be on-site or in the near vicinity. Further, no roosting sites were recorded during field surveys. It is therefore considered highly unlikely that the proposed action will involve impacts to the Grey-headed Flying-fox as per the Draft Guidelines. However, the Draft Guidelines also state that:

- *Maintaining a network of flying-fox camps and foraging habitat across both species' national range is important for their recovery.*
- *Actions that will impact on the foraging habitat of EPBC Act listed flying-foxes may also result in a significant impact. This is beyond the scope of this policy.*

As the site does contain known potential foraging habitat for the Grey-headed Flying-fox, an assessment against the *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* was performed (see **Table 7**) to ascertain whether or not the action could potentially impose a significant impact on the species.

Table 7: Significant Impact Assessment – Grey-headed Flying-fox

Significant Impact Criteria	Description	Impact
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1. Lead to a long term decrease in the size of an important population of a species.	While the proposed referral site contains potential foraging habitat for the Grey-headed Flying-fox, no individuals or roost camps were seen on or adjoining the site during field works in January and February 2016. Further, there are no recorded roost camps on or in close proximity to the site. South East Queensland has a permanent and relatively abundant population of Grey-headed Flying-foxes and available habitat is relatively abundant and spread throughout the region, given the high prevalence of flowering eucalypts. It is noted that the Grey-headed Flying-fox has potential to visit the site during foraging activities, however it is recognised that their nightly commuting distance spans up to 20 km, and as a result includes a vast area of suitable habitat within the surrounding landscape. The site is not considered to support an important population of the species and, subsequently, the proposed action is not considered to lead to a long-term decrease in the size of any local or important populations of the Grey-headed Flying-fox.	No significant impact likely
2. Reduce the area of occupancy of an important population.	No roost camps were observed across the site, and none are known on, or in proximity to, the site. While the proposed action will remove some potential foraging habitat, given the abundant availability of flowering eucalypts in the surrounding landscape and within the greater region, the development proposal is unlikely to have a significant impact on the area of occupancy of the species, or of the occupancy of an important population of the species.	No significant impact likely
3. Fragment an existing important population into two or more populations.	The SPRAT species profile outlines that, while there are spatially structured colonies of Grey-headed Flying-fox, there are no separate or distinct populations due to the constant genetic exchange and movement between camps throughout the species' geographic range. In addition, the species is considered highly mobile and capable of foraging over relatively vast distances. Due to the lack of a roosting camp on or adjacent to the subject site, the site is not considered to contain an important population of the Grey-headed Flying-fox. It is not expected that the proposed action will fragment an important population into two or more populations.	No significant impact likely
4. Adversely affect habitat critical to the survival of a species.	While the removal of some potential foraging habitat will occur as a result of the proposed action, this habitat has been relatively disturbed by clearing and grazing practices on-site, is isolated from other vegetation by roads and highways, and is subject to edge effects from surrounding development. Further, this habitat is not considered to be unique or of special value. The South East Queensland landscape provides abundant Eucalypt and similar genera, which are available for Grey-headed Flying-fox foraging. Of note, the proposed development will retain two areas of Open Space within the layout, and excludes any development on the (vegetated) western portion of the site, which will maintain foraging resources post-development. Given its relatively disturbed nature, potential foraging habitat	No significant impact likely

	to be cleared is not considered to be critical habitat to the survival of the Grey-headed Flying-fox.	
5. Disrupt the breeding cycle of an important population.	Site surveys did not identify any evidence of breeding Grey-headed Flying-fox. Mating normally occurs within autumn, and females generally give birth in October, when they carry their young to feeding sites for four to five weeks after giving birth. No individuals or roosting camps were observed on-site or on adjoining properties, and as such, the proposed action is unlikely to disrupt the breeding cycle of an important population.	No significant impact likely
6. Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	The habitat on-site did not contain any special or unique values. The removal of this habitat is unlikely to have a significant impact on the availability of habitat throughout the broader landscape, given the vast quantity and availability of eucalypts in the surrounding area. It is not expected that the removal of this site habitat will be of an extent that the species is likely to decline.	No significant impact likely
7. Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	The proposed action will be governed by management plans, including those for invasive species. The action is unlikely to result in the introduction of invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	No significant impact likely
8. Introduce disease that may cause the species to decline.	The proposed project is considered unlikely to introduce disease into the area that may cause the species to decline.	No significant impact likely
9. Interfere substantially with the recovery of the species.	Recovery of the Grey-headed Flying-fox has specifically targeted broad-scale culling. In addition, conservation efforts for the species have led to the protection of known roosting sites and associated important habitat. The subject site has not been identified as an important habitat or containing a roosting site. The action is considered unlikely to interfere with the recovery of the species.	No significant impact likely

As per the assessment against the *Significant Impact Guidelines 1.1* (**Table 7**), the proposed action is considered unlikely to have a significant impact on the Grey-headed Flying-fox.

In summary, it is considered that an abundance of suitable foraging habitat for the Grey-headed Flying-fox exists in the surrounding landscape, suggesting that the retention of Open Space areas and the western portion of the site would likely mitigate any potential negligible impact on Grey-headed Flying-fox.

Swift Parrot (*Lathamus discolor*)

Lathamus discolor (Swift Parrot) is considered very distinctive. It undertakes the longest migration of any parrot species in the world, with breeding occurring only in Tasmania, and migration to mainland Australia occurring within the wintering months to the box-ironbark forests and woodlands as far north as southeast Queensland. This species has been recorded within woodland and forest patches containing *Eucalyptus crebra* (Narrow Leaf Ironbark), *Eucalyptus tereticornis* (Forest Red Gum) as well as yellow box forests, and it feeds mostly on nectar and mainly from eucalypts. Although records of this species have come from the Gold Coast, Noosa, Toowoomba, Warwick and Lockyer Valley, a search of Wildlife Online for species records does not include *Lathamus discolor* as being observed within a ten kilometre radius of the site.

There is 1.84 ha of Least Concern remnant vegetation mapped on the subject site. The remainder of the site consists of non-remnant vegetation (cleared paddock and some patches of regrowth). No *Lathamus discolor* (Swift Parrot) individuals were recorded during site surveys, and based on the availability of *Eucalyptus crebra* (Narrow Leaf Ironbark) and *Eucalyptus tereticornis* (Forest Red Gum), the site is considered to provide marginal foraging resources for this species. However, as the site does contain known foraging habitat for the Swift Parrot, an assessment against the *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* was conducted (refer to **Table 8**) to ascertain whether or not the action could potentially impose a significant impact on the species.

Table 8: Significant Impact Assessment – Swift Parrot

Significant Impact Criteria	Description	Impact
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
1. Lead to a long term decrease in the size of an important population of a species.	While the site contains potential foraging habitat for the Swift Parrot, no individuals were seen during the site surveys. Known records of the Swift Parrot come from the Gold Coast, Noosa, Toowoomba, Warwick, and Lockyer Valley. The available habitat is relatively abundant and spread throughout the region given the high prevalence of Eucalypts. Whilst Swift Parrots have potential to visit the site for foraging, they are highly mobile and their regular commuting activities include a relatively vast area. The site is not considered to support an important population of the species, and subsequently, the proposed action is considered unlikely to lead to a long-term decrease in the size of any Swift Parrot populations.	No significant impact likely
2. Reduce the area of occupancy of an important population.	No individuals or evidence of Swift Parrots were observed on-site, and it is not considered that an important population exists on-site or in close proximity. The proposed action will remove some potential foraging habitat, however, given the abundance of flowering eucalypts in the surrounding landscape and within the greater region, the proposed action is unlikely to have a significant impact on the area of occupancy of the species, or on the area of occupancy of an important population.	No significant impact likely
3. Fragment an existing important population into two or more populations.	The SPRAT species profile outlines that the Swift Parrot population occurs as a single population, although it migrates annually. The population is not considered to be fragmented, or separated. During non-breeding times, their movements cover hundreds of kilometres. No important population is considered to exist on, or adjacent to, the project site. The proposed action is considered unlikely to fragment a population into two or more populations.	No significant impact likely
4. Adversely affect habitat critical to the survival of a species.	While the proposed action will result in the removal of potential foraging habitat for the Swift Parrot, the habitat on-site is relatively disturbed due to past clearing and current grazing practices. It is also isolated from other vegetation, and subject to edge effects from surrounding residential development. The habitat on-site is not considered to be unique or of special value. The SPRAT species profile states that while the Swift Parrot habitat is fragmented, this has not caused the populations to fragment, due to their highly mobile lifestyles. The South East Queensland landscape provides abundant eucalypt and similar species, which are available as food sources for the Swift Parrot. Additionally, the retention of Open Spaces on-site and the vegetated western portion of the property will maintain foraging resources for this species post-development. Given its relatively disturbed nature, potential foraging habitat to be cleared is not considered to be critical habitat for the survival of the Swift Parrot.	No significant impact likely
5. Disrupt the breeding cycle of an important population.	The Swift Parrot breeds in Tasmania, and none were observed on-site. Therefore, the proposed action will have no impact on the breeding cycle of an important population.	No significant impact likely
6. Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.	The habitat on-site did not contain any special or unique values. The removal of some vegetation as required for the development is unlikely to have a significant impact on the availability of habitat for the Swift Parrot throughout the broader landscape, given the vast quantity and availability of eucalypts in the surrounding area. The removal of a small area of foraging habitat on-site is not likely to lead to species decline.	No significant impact likely
7. Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat.	The proposed action is unlikely to result in the introduction of invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat. Further, the project will be carried out in accordance with management plans which will include measures to avoid establishment of invasive species in the area.	No significant impact likely
8. Introduce disease that may cause the species to decline.	The project is unlikely to introduce disease into the area that may cause the species to decline.	No significant impact likely
9. Interfere substantially with the recovery of the species.	Recovery of the Swift Parrot has specifically focused on identifying extent and quality of habitat; managing habitat at the landscape scale; reducing incidents of collision; population and habitat monitoring; community education and	No significant impact likely

	information; and managing the recovery process. The subject site has not been identified as an important habitat or population and the action is considered unlikely to interfere with the recovery of the species.	
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As per the assessment against the *Significant Impact Guidelines 1.1* (see **Table 8**), the proposed action is considered unlikely to have a significant impact on the Swift Parrot.

In summary, it is considered that the abundance of foraging habitat in the surrounding landscape suitable for the Swift Parrot, and the inclusion of Open Spaces in the development, and the retention of the western portion of the property would likely mitigate any potential negligible impact on Swift Parrot.

Nature and extent of likely impact

Except for evidence of Koala activity (in the form of scats), no other EPBC Act listed threatened species were observed on or in areas adjoining the site. As stated above, it is considered that the abundance of suitable foraging habitat in the surrounding landscape indicates that the retention of the two Open Space areas in the development layout (which are centred around the mapped watercourse features) and the undeveloped western portion of the site would likely mitigate any potential negligible impact on these species, should they visit the site.

Field surveys conducted across the site targeted for the Koala as per the EPBC Act guidelines resulted in no observations of Koala on or surrounding the referral area. In addition, of the four SAT transects conducted, three found Low usage and one found Medium usage of the site by the Koala. This suggests that the entire site has a low usage by Koalas, reflecting the fragmented nature of the site, the isolated vegetation, and the lack of state Koala mapping on the majority of the site. Flora surveys found that the site is generally dominated by species that are not identified as Koala Food trees, however, lower proportions of Primary and Secondary Koala Food Trees were present. An assessment of critical habitat on-site using the Koala Referral Guidelines resulted in a habitat score of 5.

In terms of impacts on MNES, the project will result in the following:

- Removal of 15 hectares of habitat defined as critical by the koala referral guidelines (score of 5) (**Plan 4**);
- Potential harm to individuals if they are present on site during vegetation clearing; and
- Increased vehicle use during and after construction, which may pose potential threats to Koalas.

As discussed above, a number of factors diminish the adversity of impacts caused by the proposed clearing of 15 hectares of critical habitat. These factors can be summarised as:

- Although the proposal requires the clearing of approximately 15 ha of habitat of variable quality (see **Plan 4** and **Attachment 3** for data), only 1.84 ha of Least Concern remnant vegetation will be cleared, and approximately 4 ha of critical habitat will be retained (refer to **Plan 4**);
- 15 ha is considered a smaller area of habitat (<20 ha);
- The habitat score of 5 for the site is the lowest possible score for “critical habitat”;
- The western portion of the property, across the Centenary Highway, is not proposed to be developed as part of this action (refer to **Plan 4**). Additionally, two areas of Open Space (totalling 4.2 ha) are proposed for inclusion in the development and will retain existing vegetation and include rehabilitation activities. These three areas will assist to provide connectivity values through the landscape and ensure long-term habitat viability should Koalas be present;
- No Koalas were observed on-site; only historical evidence of Koala activity in the form of scats was recorded;
- The two mapped watercourses (in the north and the southeast of the site) will be retained and rehabilitated as Open Space;
- As vegetation on this site and the neighbouring property is completely isolated from any other vegetation due to major roads on all sides, the clearing of this vegetation will not result in fragmentation of a habitat area from a larger habitat area; and
- Vegetation clearing will be undertaken sequentially under the guidance of a fauna spotter-catcher. This will ensure that the potential for injury or death to Koalas, if present, as a result of clearing is minimised.

As such, the proposal is considered unlikely to impose a significant impact on any MNES, including the Koala.

3.1 (e) Listed migratory species

Description

An EPBC Act Protected Matters Search Tool with a two kilometre radius identifies 14 migratory species as having potential to occur on-site (**Attachment 2**). During the field survey, the Rainbow Bee-eater (*Merops ornatus*) and Cattle Egret (*Ardea ibis*) were observed. These species are both common species, often observed throughout eastern and northern Australia. It is considered possible that the White-throated Needle-tail (*Hirundapus caudacutus*) and Osprey (*Pandion haliaetus*) could be fly-over species at the site, however it is not anticipated that they would be impacted by the project. Optimal habitat for these species and the other listed migratory species was considered lacking on-site, and the surrounding environment provides an abundance of suitable habitat (**Attachment 3 – Appendix D**).

Nature and extent of likely impact

The proposed action is not considered to have a significant impact on migratory species given the lack of significant habitat on-site, and abundance of habitat in the surrounding landscape.

3.1 (f) Commonwealth marine area

(If the action is in the Commonwealth marine area, complete 3.2(c) instead. This section is for actions taken outside the Commonwealth marine area that may have impacts on that area.)

Description

Not applicable. Refer to Attachment 2.

Nature and extent of likely impact

Not applicable

3.1 (g) Commonwealth land

(If the action is on Commonwealth land, complete 3.2(d) instead. This section is for actions taken outside Commonwealth land that may have impacts on that land.)

Description

Not applicable. Refer to Attachment 2.

Nature and extent of likely impact

Not applicable

3.1 (h) The Great Barrier Reef Marine Park

Description

Not applicable. Refer to Attachment 2.

Nature and extent of likely impact

Not applicable

3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development

Description

Not applicable. Refer to Attachment 2.

Nature and extent of likely impact

Not applicable

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

3.2 (a)	Is the proposed action a nuclear action?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment

3.2 (b)	Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment

3.2 (c)	Is the proposed action to be taken in a Commonwealth marine area?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(f))

3.2 (d)	Is the proposed action to be taken on Commonwealth land?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(g))

3.2 (e)	Is the proposed action to be taken in the Great Barrier Reef Marine Park?	X	No
			Yes (provide details below)

If yes, nature & extent of likely impact on the whole environment (in addition to 3.1(h))

3.3 Other important features of the environment

3.3 (a) Flora and fauna

The following provides a brief description of other flora and fauna values found on-site during desktop and field surveys (further information is contained within **Attachment 3**).

Flora

The proposed site is highly modified due to past land use, including vegetation clearing and agricultural grazing practices (refer **Response 3.3(g)**). Although historically disturbed, the application area contains a patch of remnant Least Concern Regional Ecosystem community in the south with the remainder of the site considered to contain non-remnant

vegetation including some areas of regrowth vegetation. This vegetation was confirmed on-site to be RE12.9-10.2 (refer to **Attachment 3 – Figure 4**). The majority of the proposed development area has previously been cleared of vegetation values and used for agricultural purposes. This RE community is described as *Corymbia citriodora* subsp. *variegata* +/- *Eucalyptus crebra* open forest on sedimentary rocks. Site survey confirmed species within this remnant patch to be dominated by *Corymbia citriodora* (Spotted Gum) and consistent with the current regional ecosystem mapping. The regrowth recorded on-site contained patches dominated by either *Corymbia citriodora* (Spotted Gum) or *Eucalyptus crebra* (Narrow Leaf Ironbark), which were largely devoid of understorey species with a very sparse sub-canopy layer. Species within this layer included *Corymbia citriodora* (Spotted Gum), *Eucalyptus crebra* (Narrow Leaf Ironbark), *Corymbia intermedia* (Pink Bloodwood), *Corymbia tessellaris* (Moreton Bay Ash), *Acacia disparrima* (Hickory Wattle), and *Alphitonia excelsa* (Soap Tree).

Despite targeted surveys, no threatened flora species under the EPBC Act or NCA were observed on-site, nor any of the three TECs considered potentially occurring on-site. Due to previous and continuing disturbances on the property, and within the surrounding area, it is unlikely that the subject site provides the necessary habitat to support listed flora species and TECs.

Ninety-nine flora species were observed on-site, consisting of 49 native species and 50 introduced species (refer to **Attachment 3, Table 4** and **Table 7**). A number of the native species have been planted in the constructed garden beds. Of the introduced species, 7 are listed as declared pests under the *Land Protection (Pest and Stock Route Management) Act 2002* (LPA), while 15 are classified as environmental weeds by **Ipswich City Council**. The majority of declared weeds were observed as isolated individuals or within small isolated clumps, however *Lantana montevidensis* (Creeping Lantana) was observed in greater densities throughout the site. Severe infestations of *Lantana camara* (Lantana) were observed within the adjacent properties located along the southern property boundary, but it was noted that this weed was being managed on the subject site.

There are two watercourses (stream order one drainage lines) mapped on the site – one in the central north portion of the site, and one traversing the south eastern corner. Upon site assessment, both watercourses were considered to reflect “drainage features” as defined under the *Water Act 2000*. Neither watercourse had a defined bed or banks, nor waterway-associated vegetation. The watercourse mapped through the north of the site largely consisted of a constructed dam. Refer to **Attachment 3 – Section 4.5** for further detail and photos. Further, the mapped watercourses were not considered to contain suitable habitat for threatened species given the high disturbance from a natural waterway state, the lack of waterway-associated flora species, and the surrounding cleared lands.

Open Space

Approximately 4.2 ha of Open Space has been incorporated in the proposed development layout (refer to **Plan 1**). The Open Space area is largely around mapped watercourses, in the central north portion and the southeast of the site. These Open Space areas will undergo weed management activities and infill planting, as required, resulting supplementing and enhancing the existing natural ecological functions of the site, and the waterway flow paths. A rehabilitation plan will be developed for this area, including the specification of appropriate native flora species to be planted.

Fauna

Thirty-seven fauna species were observed on-site (including 28 bird species, two mammal species, five reptile species, and two amphibian species) – refer to **Attachment 3** Section 4.6. No threatened species listed under the EPBC Act or NCA were observed on-site. Utilisation of the site is considered to be limited to fauna that can adapt to a highly modified and disturbed landscape containing anthropogenic influences. A variety of common avi-fauna were observed utilising the site as part of a broader home range. A large number of *Macropus giganteus* (Eastern Grey Kangaroo) were observed utilising the western portion of the site and within the regrowth vegetation east of the central mapped watercourse.

Out of the 665 native trees observed with a DBH 300 mm or larger, only 12 trees contained bird nests and nine trees contained hollows, however, these were not observed to be occupied by significant fauna species. The nests appeared

to utilised by *Corvus orru* (Torresian Crow), *Manorina melanocephala* (Noisy Minor), and *Gymnorhina tibicen* (Australian Magpie), while some of the hollows were being utilised by families of *Trichoglossus haematodus* (Rainbow Lorikeet).

No Koala sightings were recorded within the proposed development area. Koala habitat and usage assessments as per EPBC Act Guidelines found Low to Medium evidence of Koala usage (refer to **Section 3.1d** of this document).

Despite searches as per EPBC Act Guidelines (refer Response **3.1(d)**), no threatened fauna species listed under the EPBC Act were recorded during field studies.

3.3 (b) Hydrology, including water flows

Two mapped watercourses (stream order one) are mapped on-site – one in the central north portion, and one in the east – which both connect into Deebing Creek. These are both highly disturbed from natural condition, with the northern one constituting a constructed dam, and neither having waterway-associated vegetation. Any overland flow across the site due to soil saturation during high rainfall events is likely to run into these drainage features. The proposed development retains large areas of Open Space (see **Plan 1**) which will incorporate the majority of these drainage features. Any existing vegetation in these areas will be retained, and infilled, to allow for natural function and to minimise the potential for hydrological changes to impact watercourses.

Stormwater Management Plan

As per anticipated approval requirements, all works will be carried out and completed in accordance with a Stormwater Management Plan which will be developed and approved. The implementation of the Stormwater Management Plan will ensure that water quality standards set by State and Local governments are achieved.

3.3 (c) Soil and Vegetation characteristics

Vegetation values across the site are limited due to previous clearing for grazing purposes. Remaining vegetation is a mixture of remnant vegetation and regrowth of compromised habitat value. Site survey confirmed the remnant vegetation to be Least Concern RE 12.9-10.2.

The Australian Soil Resource Information System (ASRIS) maps the entire site as containing Chromosols, which are considered a component of Land Zone 9-10 Regional Ecosystems which is mapped on-site. Chromosols have a strong contrasting texture. They are not strongly acidic or sodic in the upper B horizon. The parent material of Chromosols ranges from highly siliceous, siliceous to intermediate in composition. These soils are found in imperfectly drained and well-drained sites. These soils have moderate agricultural potential with moderate chemical fertility and water-holding capacity. They can be susceptible to soil acidification and soil structure decline. Refer to **Attachment 3 – Figure 6** and **Section 3.8**.

3.3 (d) Outstanding natural features

No outstanding natural features have been identified across the site. In particular, the site's proximity to main roads and highways, and the surrounding residential development has severely fragmented it from other habitat areas in the greater landscape (refer to **Plan 2**). Previous disturbances in the wider landscape have significantly reduced any ecological value of the site and its immediate surrounds, resulting in no outstanding natural features identified.

3.3 (e) Remnant native vegetation

The site contains one patch of mapped Category B Least Concern remnant RE, which was confirmed during site assessment. It adjoins the mapped RE patch on the property to the south, however, the RE patch is highly fragmented due to roads or highways on all sides. Further, this RE is not considered essential habitat for threatened species.

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

The site contours vary by approximately 30 metres, with a peak in the very west and near the east portion of the site, before dropping down to a drainage line further east.

3.3 (g) Current state of the environment

The site was found to be largely disturbed as a result of the property being largely cleared and used as a grazing land. There is a small patch of remnant vegetation, as described above, with the rest of the site being cleared, or having some regrowth vegetation.

The majority of the site is classified as Category X non-remnant vegetation, under the *Vegetation Management Act 1999* (refer **Attachment 3 – Figures 3 and 4**). No vegetation mapped or recorded on-site is classified as Endangered or Of Concern Regional Ecosystem, or as Essential Habitat. The site contained seven state listed weed species, and 15 local government listed environmental weeds.

In its current condition, the site is not considered to provide any unique or significant habitat features or values to the broader landscape. The presence of some flowering eucalypt trees which provide potential foraging habitat for the Swift Parrot and the Grey-headed Flying-fox is not considered significant within the broader landscape and habitat availability.

In addition, contextually, the site is located within a highly fragmented landscape, immediately adjacent to a large area zoned as a Priority Development Area, which will continue to increase the fragmentation in the surrounding area. **Plan 2** shows the future developments surrounding the project site, which are currently proposed or approved through the EPBC Act application process.

Refer to **Attachment 3** for further results of the site assessment.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

Not applicable (refer to **Attachment 2**).

3.3 (i) Indigenous heritage values

There are no known cultural heritage values on the site.

3.3 (j) Other important or unique values of the environment

The site is not located near other notable environmental features that are likely to be affected by the proposed action.

3.3 (k) Tenure of the action area (eg freehold, leasehold)

The entire extent of the site is freehold land.

3.3 (l) Existing land/marine uses of area

The site is currently rural residential land, used for grazing land. Surrounding land uses are rural residential and arterial roads, with a vast amount of increasing residential development.

3.3 (m) Any proposed land/marine uses of area

The proposed use of the land is for a residential development as per the Ripley Valley Master Planned Structure Plan (mapped as “neighbourhoods”).

4 Environmental Outcomes

The proposed residential development on Rawlings Road, Deebling Heights will result in the removal of some Koala habitat trees from the site area to establish the development. As highlighted throughout this referral, the vegetation on-site is impacted and fragmented by previous and current land uses and proposed developments, including being completely isolated from other vegetation due to roads existing on all sides. While site investigations recorded evidence of Koala on-site, any Koala habitat on-site is limited by the current and proposed expansion of approved development on land adjoining the project area, in keeping with planning intent of the Ripley Valley region. The area has been designated as a Priority Development Area, with the referral site zoned as Future Urban. Based on this context, while the property contains some Habitat defined as critical for the Koala by the referral guidelines, this is fragmented and isolated and will become more so with the planned encroaching development. Consequently, the proposed action is not considered to result in a Significant Impact on a *Matter of National Environmental Significance*.

Further, a number of environmental management plans will be developed as part of the required approvals and will include mitigation measures to be implemented. Such plans will include (but not limited to):

- Fauna Management Plan;
- Vegetation Management Plan;
- Pre-clearing Fauna Assessment & Management Plan; and
- Rehabilitation Plan.

The proposed development layout (refer to **Attachment 1** and **Plan 1**) incorporates two areas of Open Space, totalling 4.2 ha. These Open Areas capture the mapped watercourses on the site, and will undergo rehabilitation activities. Additionally, there is no development planned for the portion of the property to the west of the Centenary Highway. It is considered that these three areas will provide continuation (and enhancement) of the compromised environmental values and functions on-site and in the surrounding area.

A Rehabilitation Plan will be developed for the Open Spaces and will be presented to Council during the approvals process. The overarching purpose of this Plan will be to protect and retain existing vegetation, and enhance these areas where required. All rehabilitation works will be conducted in accordance with best management practices, including assisting to stabilise and reverse negative effects of habitat fragmentation. Proposed rehabilitation works within the Open Space areas will include weed management and replanting of native species consistent with mapped Regional Ecosystems for the site. These activities aim to strengthen ecological values and maintain connectivity. Additional strategies such as propagule sourcing and installation of fauna habitat components (i.e. nest boxes) and fauna awareness signage will also be implemented as required during the stages of the development. Further, the exclusion of the vegetated portion of the property, west of the Centenary Highway, from the development footprint is considered to provide a noteworthy environmental outcome for any threatened species that may infrequently utilise the site as part of a broader home range.

This assessment has determined that the proposed action for this residential development will not have a significant impact on any listed species under the EPBC Act. Specifically regarding the Koala, the assessment of the site resulted in no significant impact on the Koala due to the lower amount of vegetation (15 ha) with a low score of Critical Habitat (5) to be cleared, existing threats to the Koala in the area, and the lack of potential impact on the recovery of the Koala. Therefore, we consider that the action should be made Not a Controlled Action.

Should the Department disagree with this decision and consider the action a Controlled Action, a draft set of outcomes based conditions for the Grampian Drive residential development will be prepared in accordance with DoE's draft Outcomes-based Conditions Policy 2015 and Outcomes-based Conditions Guidance 2015.

5 Measures to avoid or reduce impacts

It is anticipated that the primary impact on the natural environment that will occur as a result of the project is the clearing of native trees (both mature and regrowth) within non-remnant and remnant (1.84 ha) vegetation. A number of management measures will be employed during the construction stages of the development that firstly avoid environmental impacts, and if not avoidable, reduce, minimise, and mitigate any environmental impacts. It is likely that mitigation and management measures will be conditioned by **Ipswich City Council (ICC)** as part of the project approvals. The measures that will be included are summarised below:

1. Vegetation Management Plan

A Vegetation Management Plan must be included as part of the Operational Works application to **ICC** and include the following information:

- Location of protected vegetation, vegetation to be retained, and vegetation to be removed;
- Details on vegetation types;
- Location of significant vegetation (remnant vegetation, significant species, etc.);
- Particulars on how vegetation is proposed to be cleared (clearing sequence plan);
- Methods for protecting or relocating plants; and
- Disposal methods.

2. Fauna Management Plan

All works must be undertaken in accordance with an approved Fauna Management Plan, which is submitted as part of the Operational Works package. This Plan includes details on:

- Species surveyed as using the site;
- A plan showing existing habitat areas;
- Details of threats to existing fauna;
- Vegetation clearing sequence plan;
- Management and mitigation measures (e.g. temporary fauna exclusion fencing);
- Fauna spotter role, contacts, and certification; and
- Specific fauna management procedures for potential or known habitat trees.

3. Stormwater Management Plan

All works must be carried out and completed in accordance with an approved Stormwater Management Plan which will provide details on:

- Stormwater quality improvement devices; and
- Mechanisms for monitoring and reporting.

The Stormwater Management Plan will ensure that water quality standards set by State and Local governments are achieved.

4. Erosion and Sediment Control Plan

Operational works applications must be accompanied by an Erosion and Sediment Control Plan, to be approved by Council. It must contain details on:

- Catchment boundary and overland flow path;
- Estimated soil loss from each catchment;
- Length, width, and depth of each sediment basin;
- Spillway details and levels;
- Energy dissipation / scour protection;
- High flow bypass;

- Cross section, capacity, and spacing of each catch / diversion drain;
- Location and spacing of silt fences;
- Frequency and location of water quality monitoring;
- Maintenance requirements and frequency;
- Maintenance access; and
- Contingency measures in case of failure to achieve water quality objectives.

Rehabilitation Plan

A Rehabilitation Plan will be developed and submitted to **ICC**. The aim of the Plan will be to retain and enhance the ecological values and functions of the Open Spaces on the site (refer to **Plan 1**). The Plan will outline:

- The removal of weed infestations and the suppression of weedy regrowth;
- Stabilisation of any erosion prone areas with weed matt and mulching;
- The encouragement of native plant regeneration; and
- The establishment of native plants and recognised Koala habitat trees as required.

Mitigation of impacts on the Koala

The project will result in the removal of 15 hectares of critical habitat for the Koala. A number of factors diminish the adversity of impacts caused by the proposed clearing of critical habitat. These factors can be summarised as:

- The proposal requires the clearing of approximately 15 ha of habitat of variable quality, with only 1.84 ha considered to be remnant vegetation, and only one primary Koala food tree species was found;
- Although the proposal requires the clearing of approximately 15 ha of habitat of variable quality (see **Plan 4** and **Attachment 3** for data), only 1.84 ha of Least Concern remnant vegetation will be cleared, and approximately 4 ha of critical habitat will be retained (refer to **Plan 4**);
- 15 ha is considered a smaller area of habitat (<20 ha);
- The habitat score of 5 for the site is the lowest possible score for “critical habitat”;
- The western portion of the property, across the Centenary Highway, is not proposed to be developed as part of this action (refer to **Plan 4**). Additionally, two areas of Open Space (totalling 4.2 ha) are proposed for inclusion in the development and will retain existing vegetation and include rehabilitation activities. These three areas will assist to provide connectivity values through the landscape and ensure long-term habitat viability should Koalas be present;
- No Koalas were observed on-site; only historical evidence of Koala activity in the form of scats was recorded;
- The two mapped watercourses (in the north and the southeast of the site) will be retained and rehabilitated as Open Space;
- As vegetation on this site and the neighbouring property is completely isolated from any other vegetation due to roads and highways on all sides, the clearing of this vegetation will not result in fragmentation of a habitat area from a larger habitat area; and
- Vegetation clearing will be undertaken sequentially under the guidance of a fauna spotter-catcher. This will ensure that the potential for injury or death to Koalas, if present, as a result of clearing is minimised.

Summary

Each of the above management measures and plans are specifically aimed at avoiding and reducing impacts on the natural environment that may occur as a result of the development. In particular, the use of a fauna-spotter catcher during clearing and construction phases will ensure that impacts to Koalas, if present, are avoided.

6 Conclusion on the likelihood of significant impacts

6.1 Do you THINK your proposed action is a controlled action?

<input checked="" type="checkbox"/>	No, complete section 6.2
<input type="checkbox"/>	Yes, complete section 6.3

6.2 Proposed action IS NOT a controlled action.

The construction of the proposed residential development at Rawlings Road, Deebling Heights is not considered to have a significant impact on Matters of National Environmental Significance (MNES) and as such, we do not believe it warrants a 'controlled action' determination. As detailed in this referral, no MNES are considered to be impacted by the proposal. In particular, the proposed action is not considered to have a significant impact on Koalas as a result of the clearing of vegetation due to the following conclusions:

- No Koalas were observed on-site;
- Evidence of Koala activity was Low to Medium usage across the site;
- The site is completely isolated from any surrounding bushland areas due to the presence of roads on all sides;
- Vegetation is to be preserved and rehabilitated throughout the development site in the areas nominated as Open Space (including weed management and infill planting of native and Koala habitat trees), and in the western portion of the property;
- Critical habitat on the site achieved a habitat score of 5 which is the lowest score for critical habitat using the Koala Referral Guidelines Habitat Assessment Tool, and multiple characteristics that reduce adverse effects to habitat critical to the survival of the Koala are evident suggesting that referral is not recommended.

Management measures will be imposed through the development approvals process which will ensure that injury to Koalas, if present, as a result of vegetation clearing is avoided or minimised. This will include the use of a fauna spotter-catcher during all stages of clearing and the implementation of sequential clearing to allow fauna to disperse away from clearing areas.

Given these factors, it is considered unlikely that the proposed action will have a significant impact on MNES and as such, is **not considered to be a controlled action**.

6.3 Proposed action IS a controlled action

Not applicable

7 Environmental record of the responsible party

	Yes	No
7.1 Does the party taking the action have a satisfactory record of responsible environmental management? Provide details <div></div>	X	
7.2 Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources? If yes, provide details		X
7.3 If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework? If yes, provide details of environmental policy and planning framework DHA implement an Environmental Management Guideline which has the purpose to "describe how DHA addresses its environmental management obligations and seeks to improve the performance of its housing portfolio by design, equipment specification and construction processes. This also applies to its administration facilities." The Guideline has been included as Attachment 4 .	X	
7.4 Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act? Provide name of proposal and EPBC reference number (if known) <div> 2015/7591 – Lee Point Master-planned urban development, Darwin, NT 2011/6163- North Weston Residential Development 2010/5525 – Muirhead Subdivision 2001/374 – Duntroon Residential Development 2011/218 – Residential Housing Estate 2001/163 – Residential Complex – Lots 6575 and 6576 </div>	X	

8 Information sources and attachments

(For the information provided above)

8.1 References

- **Australian Koala Foundation**, *The Spot Assessment Technique: determining the importance of Habitat Utilised by Koalas (Phascolarctos cinereus)*, available online <https://www.savethekoala.com/sites/default/files/docs/conserve/The%20Spot%20Assessment%20Technique.pdf>
- **Australian Koala Foundation** 2012, *National Koala Tree Protection List; Recommended Tree Species for Protection and Planting of Koala Habitat*.
- **Australian Soil Resource Information System**, <http://www.asris.csiro.au/>
- **McAlpine, Callaghan, Lunney, Bowen, Rhodes, Mitchell & Possingham** 2006, *Conserving Southeast Queensland Koalas: How much habitat is enough?* In: *Biodiversity Conference Proceedings* (eds G. Siepen and D. Jones), pp 11-17, University of Queensland, Gatton.
- **Phillips & Callaghan** 2011, *The Spot Assessment Technique: a tool for determining localised levels of habitat use by Koalas Phascolarctos cinereus*. ***Australian Zoologist* 35(3)**: 774-780.
- **Urban Land Development Authority** 2011, *Ripley Valley Urban Development Area Development Scheme*, available online <http://www.dsdip.qld.gov.au/resources/plan/pda/ripley-valley-development-scheme.pdf>

8.2 Reliability and date of information

Refer to response at 8.1

8.3 Attachments

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)	✓	<ul style="list-style-type: none"> - Project locality – Figures 1 & 2 - GIS file - Attachment 1 – Proposed Layout - Plan 1 – Development Assessment - Plan 2 – Fragmentation map
	GIS file delineating the boundary of the referral area (section 1)		
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national environmental significance or important features of the environments (section 3)	✓	<ul style="list-style-type: none"> - Project locality - Figures 1 & 2 - Plan 2– Fragmentation map
If relevant, attach	copies of any state or local government approvals and consent conditions (section 2.5)	N/A	
	copies of any completed assessments to meet state or local government approvals and outcomes of public consultations, if available (section 2.6)	N/A	
	copies of any flora and fauna investigations and surveys (section 3)	✓	<ul style="list-style-type: none"> - Attachment 2 – Protected Matters Search Results - Attachment 3 – Ecological Assessment Report - Plan 3 – Field Survey Effort
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 5)	✓	<ul style="list-style-type: none"> - Attachment 3 – Ecological Assessment Report - Plan 2– Fragmentation map - Plan 3 – Field Survey Effort - Plan 4 – Potential Koala Habitat
	report(s) on any public consultations undertaken, including with Indigenous stakeholders (section 3)	N/A	

9 Contacts, signatures and declarations

Project title: Rawlings Road Development, Deebing Heights

9.1 Person proposing to take action

1. Name and Title: Rob Winters, Senior Development Manager

2. Organisation:
Defence Housing Australia

3. EPBC Referral
Number:

4: ACN / ABN: 72 968 504 934

5. Postal address: 26 Brisbane Avenue, Barton, ACT, 2600

6. Telephone: 07 33558860

7. Email: rob.winters@dha.gov.au

8. Name of designated
proponent (if not the
same person at item 1
above:

As above

9. ACN/ABN of
designated proponent (if
not the same person
named at item 1 above):

As above

I qualify for exemption
from fees under section
520(4C)(e)(v) of the
EPBC Act because I am:

N/A

If you are small business
entity you must provide
the Date/Income Year
that you became a small
business entity:

N/A

I would like to apply for a
waiver of full or partial
fees under Schedule 1,
5.21A of the [EPBC
Regulations](#). Under sub
regulation 5.21A(5), you
must include information
about the applicant (if
not you) the grounds on
which the waiver is
sought and the reasons
why it should be made:

N/A

I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct.
I understand that giving false or misleading information is a serious offence.
I agree to be the proponent for this action.
Declaration I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature

Date

9.2 Person preparing the referral information (if different from 9.1)

Name Murray Saunders
Title Director
Organisation Saunders Havill Group Pty Ltd
ACN / ABN (if applicable) 24 144 972 949
Postal address 9 Thompson Street, Bowen Hills, QLD 4006
Telephone (07) 3251 9415
Email murraysaunders@saundershavill.com

Declaration I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct.
I understand that giving false or misleading information is a serious offence.



Signature

Date 09/06/2016

Legend

- Site Boundary
- Rail Resumption
- Road Resumption
- Open Space / Drainage
- Pedestrian Link
- Potential Dual Occupancy
- Q100
- Q20
- Q10

YIELD BREAKDOWN					
STANDARD ALLOTMENTS					
Lot Type	Lot Dimensions	Standard Lot Area	Total Allotments	%	Small Lot Mix
Villa	10.7m x 32m	342.4m²	98	33.8%	81.7% < 450m²
Premium Villa	12.5m x 32m	400m²	89	30.7%	
Courtyard	14m x 32m	448m²	50	17.2%	
Premium Courtyard	16m x 32m	512m²	34	11.7%	18.3% ≥ 450m²
Traditional	18m x 32m	576m²	19	6.6%	
Total Standard Allotments			290	100.00%	
MEDIUM DENSITY SUPER ALLOTMENTS					
Lot Type	Total Allotments	Total Dwellings			
28m Deep Laneway	2	18			
30m Deep Laneway	3	24			
Total Medium Density	5	42			
OVERALL YIELD					
	Total Allotments	Total Dwellings			
Overall Totals	295	332			

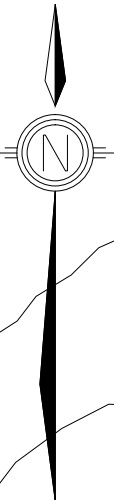
LAND BUDGET		
	Area	Percentage
Area of Subject Site	25.473 ha	100.0%
SALEABLE AREA		
Standard Allotments	12.810 ha	50.3%
Medium Density Allotments	0.980 ha	3.8%
Total Area of Allotments	13.790 ha	54.1%
ROAD RESERVE		
Collector Streets	0.687 ha	2.7%
Local Access Streets	5.096 ha	20.0%
Pedestrian Connections	0.297 ha	1.2%
Gramplan Drive Resumption	0.178 ha	0.7%
Rawlings Road Resumption	0.139 ha	0.5%
Total Area of New Road	6.398 ha	25.1%
RAIL RESUMPTION		
Rail Resumption	1.100 ha	4.3%
Total Rail Resumption	1.100 ha	4.3%
OPEN SPACE		
Stormwater / Drainage	4.186 ha	16.4%
Total Open Space	4.186 ha	16.4%

DENSITY CALCULATION OPTION 1	
Including Southern Drainage Corridor	
Site Area	25.473 ha
Net Developable Area*	21.524 ha
Total Dwellings	332
Density (dw/ha)	15.4
*excludes Trunk Infrastructure (Road and Rail Resumptions) and Regional Drainage Corridor	

DENSITY CALCULATION OPTION 2	
Excluding Southern Drainage Corridor	
Site Area	25.473 ha
Net Developable Area*	24.057 ha
Total Dwellings	332
Density (dw/ha)	13.8
*excludes Trunk Infrastructure (Road and Rail Resumptions)	

Note:
All Lot Numbers, Dimensions and Areas are approximate only, and are subject to survey and Council approval.
Dimensions have been rounded to the nearest 0.1 metres.
Areas have been rounded down to the nearest 5m².
The boundaries shown on this plan should not be used for final detailed engineers design.
Source Information:
Site boundaries: RPS Survey.
Adjoining information: DCDB.
Contours: RPS Survey.
Q10, Q20 & Q100: Water Technology.

DRAFT





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: 06/05/16 10:15:35

[Summary](#)

[Details](#)

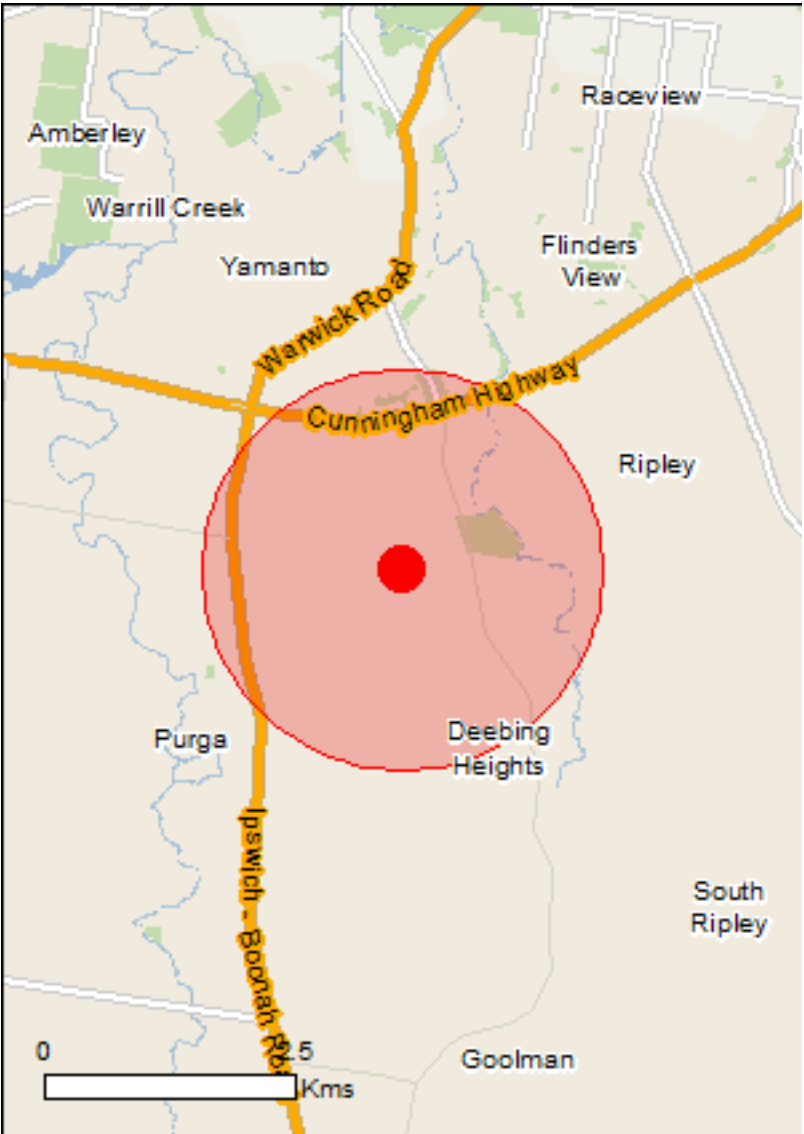
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

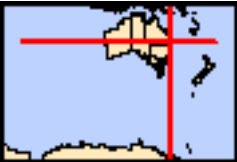
[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

[Buffer: 2.0Km](#)



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:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	24
Listed Migratory Species:	14

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	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:	30
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

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
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland	Critically Endangered	Community likely to 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	Foraging, feeding or related behaviour may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat known to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Poephila cincta cincta Black-throated Finch (southern) [64447]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur

Name	Status	Type of Presence within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll [331]	Endangered	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 may occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Plants		
Arthraxon hispidus Hairy-joint Grass [9338]	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
Notelaea ipsviciensis Cooneana Olive [81858]	Critically Endangered	Species or species habitat may occur within area
Notelaea lloydii Lloyd's Olive [15002]	Vulnerable	Species or species habitat likely to occur within area
Phebalium distans Mt Berryman Phebalium [81869]	Critically Endangered	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Delma torquata Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species

Name	Threatened	Type of Presence
Hirundapus caudacutus White-throated Needletail [682]		habitat may occur within area Species or species habitat known to 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 may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may 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 likely to occur within area

Migratory Wetlands Species		
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely 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		
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

Name	Threatened	Type of Presence
Ardea ibis Cattle Egret [59542]		habitat likely to occur within area Species or species habitat may occur within area
Cuculus saturatus Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]		Species or species habitat likely to 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 may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]	Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		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 Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat likely 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

Name	Status	Type of Presence
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		
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
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

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.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

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

-27.67659 152.7515

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](#)
- [-Parks and Wildlife Commission NT, Northern Territory Government](#)
- [-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, Atherton and Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- 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.

environmental management



Ecological Assessment Report EPBC Act

Rawlings Road, Deebing Heights



Defence Housing Australia – Property Provisioning Group

Mr. Rob Winters

9 June 2016

8122



Document Control

Title	Ecological Assessment Report – EPBC Act
Address	Rawlings Road, Deebling Heights
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Draft	23.05.2016	Kim Delaney	Sam Maynard
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Disclaimer

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Reports and/or Plans by Others

Reports and/or plans by others may be included within this Environmental Management report to support the document.



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I. Introduction

The *Environmental Management Division* of **Saunders Havill Group (SHG)** was engaged by **Defence Housing Australia** to prepare an Ecological Assessment Report for the proposed Rawlings Road, Deebling Heights development over parts of Lot 194 on SP193445 and Lot 195 on S3157. This report is intended to support a referral under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and provides a review of the site's ecological values in accordance with Commonwealth and State Government legislation. A separate ecological report has been developed to address the Local Government legislation.

The proposed action is for a residential development consisting of 295 new lots with 332 dwellings, with a development footprint of 25.37 hectares (ha) (refer to **Appendix A**). The site is located approximately seven kilometres south of Ipswich City, in Queensland. The landscape surrounding the subject site consists of a mixture of land cleared for residential and agricultural purposes, and bushland. The site is bound by existing roads with the Centenary Highway to the west, Rawlings Road to the north, and South Deebling Creek Road to the east. The Centenary Highway also transects the adjacent properties approximately 200 m south of the subject site. The land on Lot 194 to the west of the Centenary Highway is not earmarked for development as part of this proposal. Allotments to the east of the site are included within the Ripley Valley Priority Development Area (PDA) and are either earmarked for or under development. Land to the north of Rawlings Road and to the east of South Deebling Creek Road and Grampian Drive has been cleared and is being developed into residential properties. To the west, the land is largely cleared and used for rural purposes. Refer to the site context map (**Figure 1**) and site aerial (**Figure 2**).

The development on a site within a modified and disturbed landscape, composed of cleared areas and remnant vegetation classified as Least Concern vegetation. The topography of the site is variable and contains three small hills and a low lying ponded area in the central portion of the site, adjacent to Rawlings Road. The site has been subject to flora and fauna assessments by **SHG** to address various approval requirements, including those required under the EPBC Act. The results of these assessments are summarised and presented in this report.

Overall, the site is considered to be relatively disturbed by historical clearing and agricultural land uses, with an abundance of introduced and weed species. In terms of *Matters of National Environmental Significance* (MNES), only evidence of Koala activity in the form of scats and potential Koala habitat trees were recorded on-site, with the most suitable Koala habitat located in the southern portion of the site. The majority of the site contained non-remnant vegetation, or that which was considered to be less suitable Koala habitat. No EPBC Act listed flora or fauna species were observed on-site. Suitable food trees that could potentially provide foraging habitat for *Pteropus poliocephalus* (Grey-headed Flying-fox) and *Lathamus discolor* (Swift Parrot) are present, however, they are considered to be of relatively poor quality due to a history of high levels of disturbance on-site, and of insignificant abundance relative to the extent (and quality) available in the surrounding landscape.

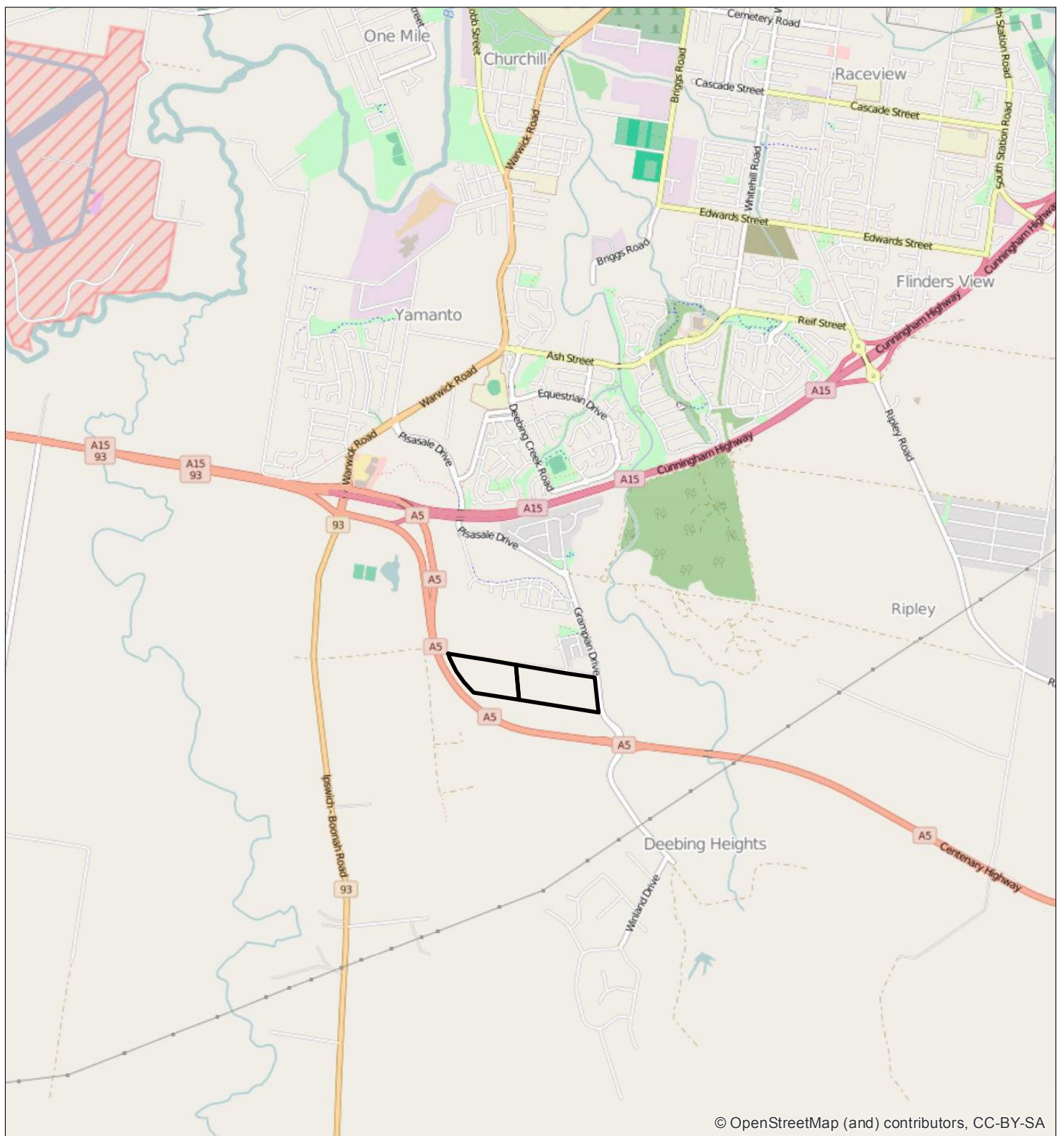


I.1. Key Site Details

Address	Rawlings Road, Deebing Heights
RPD	Part of Lot 194 on SP193445 – 10.8 ha Lot 195 on S3157 – 14.57 ha
Referral Area	25.37 hectares
VMA 1999	Category X Non-remnant Vegetation Category B Regulated Vegetation Least Concern
NC Act Protected Plants	-
Koala SPRP	Koala Assessable Development Area (western portion only) Broad Hectare Area (western portion only)
Koala SPP	Medium Value Bushland Habitat (western portion only) Low and Medium Value Rehabilitation Habitat (western portion only) Generally Not Suitable (western portion only)
SPP	Biodiversity – Regulated Vegetation Intersecting a Watercourse & Wildlife Habitat Water Quality – Climatic Regions Natural Hazards – Bushfire Hazard
Local Government Area	Ipswich City Council
Planning Scheme / Zoning	Ipswich Planning Scheme / Future Urban
Existing Land Use	Rural residential
Proposed Land Use	Low density residential

I.2. Purpose of the Report

The purpose of this Ecological Assessment Report (EAR) is to present and comment on the outcomes of field surveys undertaken to assess potential environmental impacts of the proposed development on any *Matters of National Environmental Significance* (MNES).



Legend

 Project Site DCDB

Figure 1

Site Context

File ref. 8122 E Figure 1 Site Context A
Date 25/02/2016
Project Rawlings Road, Deebling Heights

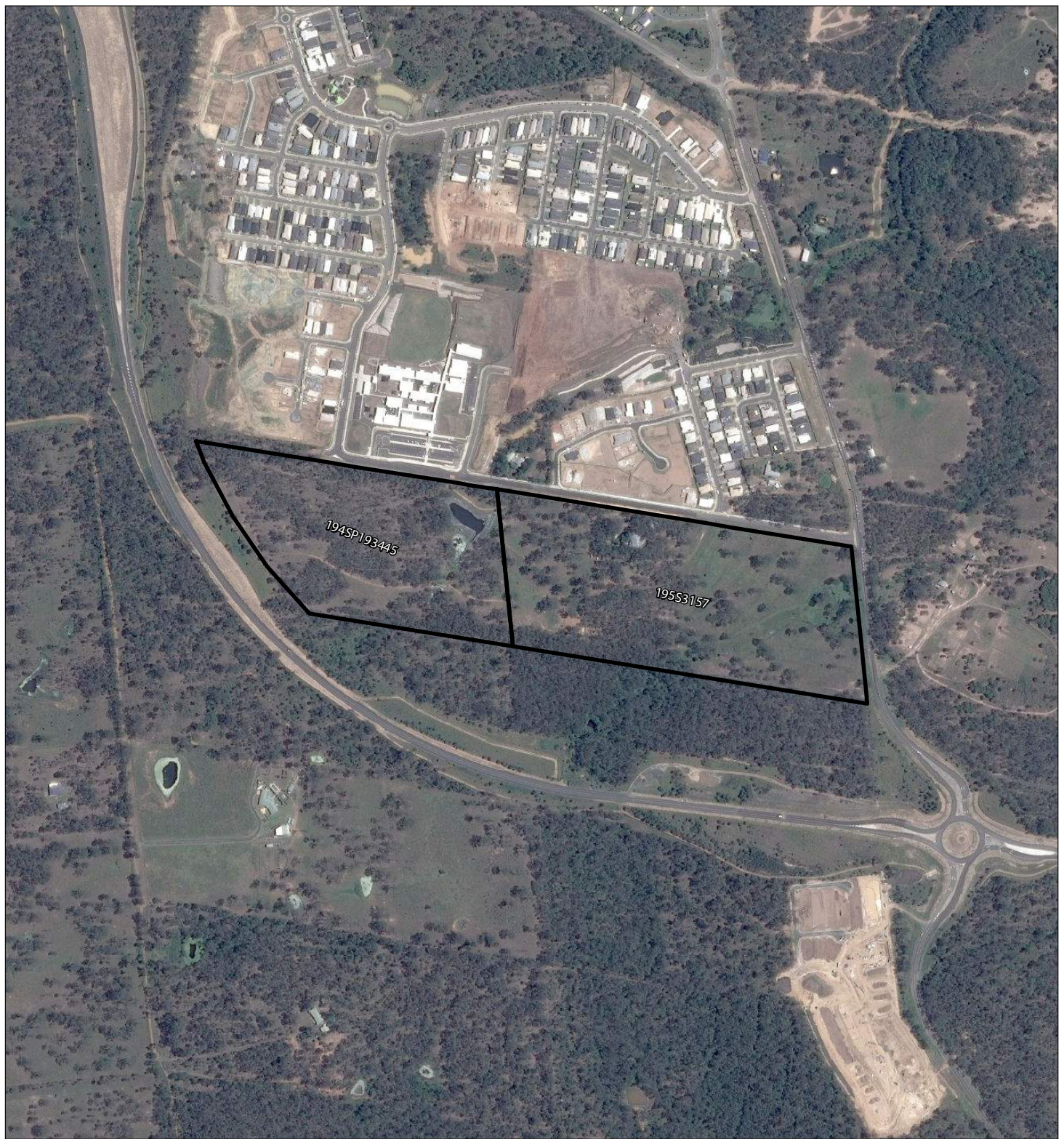
0 500 1,000 m

Scale (A4): 1:40,000 [GDA 1994 MGA Z56]



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Legend



Project Site DCDB

Figure 2

Site Aerial

File ref. 8122 E Figure 2 Site Aerial A
Date 12/02/2016
Project Rawlings Road, Deebling Heights

0 50 100 200 300 m

Scale (A4): 1:9,000 [GDA 1994 MGA Z56]



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2. Ecological Assessment Methodology and Process

The following steps were undertaken in the preparation of this assessment:

1. Desktop Analysis;
2. Legislation and Policy Review;
3. Field Survey; and
4. Analysis and Recommendations.

2.1. Desktop Analysis

Prior to the commencement of field surveys, a desktop analysis was conducted to identify relevant information for the site. The following information was reviewed:

- Search of the Commonwealth EPBC Act Protected Matters Search Tool;
- Search of EHP Wildlife Online Database for the study area and surrounds;
- Commonwealth and State Government Environmental Databases;
- State Government Environmental Overlay Mapping (i.e. SARA and SPP Mapping);
- Existing ecological reports and plans for the subject site; and
- Relevant EPBC Act survey guidelines.

A review of aerial photography history was undertaken to assist with the broad delineation of vegetation communities and determine historical disturbance patterns to local vegetation communities.

2.2. Field Survey

A number of detailed flora and fauna surveys have been undertaken over the application site. These have been carried out using a number of survey methods to describe various on-site habitat and vegetation characteristics. Activities undertaken on site have included:

- General Searches & Species Identification – The site was walked to ensure all vegetation communities and species were recorded and identified. Particular attention was paid to any threatened species or communities that were listed as possibly occurring on or within the vicinity of the application site and specific micro assemblages which may support these matters;
- Observational Survey – A detailed observational survey of the vertebrate fauna present on or that may utilise the study area, including faunal lists and significance status of species under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that includes the Japan – Australia Migratory Bird Agreement and the Bonn Convention, and the Queensland *Nature Conservation Act 1992* (NCA);
- Opportunistic Searches – Searches for fauna species throughout all habitat types, including detailed searches for listed EPBC species;



- SAT – The Spot Assessment Technique (SAT) and Koala habitat assessments were carried out to identify the presence of Koalas and their habitat;
- Specific surveys for Threatened plants – Meandering transects were conducted in search of threatened plant species as per EPBC Act guidelines;
- GPS Tree Plot – Details of all tree specimens surveyed as having a DBH greater than 300 mm were GPS recorded, accurate to < 1 m;
- Fauna Activity – Deployment of motion sensor cameras in key locations on-site for one week, and analysis of any activity recorded;
- Identification – Identification of habitat values within the area relevant to terrestrial vertebrate fauna, including hollow-bearing trees, nest sites, rocky outcrops, watercourses, leaf litter, denning or roosting structures, and ecological corridors; and
- Description – A description of the major fauna habitats present.



3. Legislation, Policy and Planning Instruments

3.1. Environment Protection and Biodiversity Conservation Act 1999

The Australian Government's key piece of environmental legislation is the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The EPBC Act aims to protect and manage matters of environmental significance which include nationally and internationally important flora, fauna, ecological communities and heritage places.

A Protected Matters Search for the allotment was undertaken through the Environment Protection and Biodiversity Conservation Online Protected Matters Search Tool (PMST). The search provides a list of wetlands of international significance, threatened ecological communities and threatened species which have the potential to be temporarily or permanently located within a two kilometre radius of the proposed development site. **Table 1** lists a summary of the search results relevant to the site. The complete results of this search are included in **Appendix B**.

Table 1: EPBC Act 1999 Protected Matters Search Results

Listed Threatened Ecological Communities		
Name		
Lowland Rainforest of Subtropical Australia – Community may occur within area		
Swamp Tea-tree (<i>Melaleuca irbyana</i>) Forest of South-east Queensland – Community likely to occur within area		
White Box-Yellow Box-Blakely's red Gum Grassy Woodland and Derived Native Grassland – Community may occur within area		
Listed Threatened Species		
Scientific Name	Common Name	Status
Birds		
<i>Anthochaera phrygia</i>	Regent Honeyeater	Critically Endangered
<i>Botaurus poiciloptilus</i>	Australasian Bittern	Endangered
<i>Dasyornis brachypterus</i>	Eastern Bristlebird	Endangered
<i>Erythrorhynchus radiatus</i>	Red Goshawk	Vulnerable
<i>Geophaps scripta scripta</i>	Squatter Pigeon (southern)	Vulnerable
<i>Grantiella picta</i>	Painted Honeyeater	Vulnerable
<i>Lathamus discolor</i>	Swift Parrot	Endangered
<i>Poephila cincta cincta</i>	Black-throated Finch	Endangered
<i>Rostratula australis</i>	Australian Painted Snipe	Endangered



Scientific Name	Common Name	Status
<i>Turnix melanogaster</i>	Black-breasted Button-quail	Vulnerable
Mammals		
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat, Large Pied Bat	Vulnerable
<i>Dasyurus hallucatus</i>	Northern Quoll	Endangered
<i>Dasyurus maculatus maculatus</i> (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Endangered
<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	Vulnerable
<i>Phascolarctos cinereus</i> (combined populations of Qld, NSW and the ACT)	Koala (combined populations of QLD, NSW and the ACT)	Vulnerable
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vulnerable
Plants		
<i>Arthraxon hispidus</i>	Hairy-joint Grass	Vulnerable
<i>Bosistoa transversa</i>	Three-leaved Bosistoa, Yellow Satinheart	Vulnerable
<i>Notelaea ipsviciensis</i>	Cooneana Olive	Critically Endangered
<i>Notelaea lloydii</i>	Lloyd's Olive	Vulnerable
<i>Phebalium distans</i>	Mt Berryman Phebalium	Critically Endangered
<i>Thesium australe</i>	Austral Toadflax, Toadflax	Vulnerable
Reptiles		
<i>Delma torquata</i>	Collared Delma	Vulnerable
<i>Furina dunmalli</i>	Dunmall's Snake	Vulnerable
Migratory & Marine		
Scientific Name	Common Name	Status
<i>Anseranas semipalmata</i>	Magpie Goose	Listed Marine Species
<i>Apus pacificus</i>	Fork-tailed Swift	Migratory Marine Bird Listed Marine Species
<i>Ardea alba</i>	Great Egret, White Egret	Migratory Wetlands Species Listed Marine Species
<i>Ardea ibis</i>	Cattle Egret	Migratory Wetlands Species Listed Marine Species



Scientific Name	Common Name	Status
<i>Cuculus optatus</i>	Oriental Cuckoo, Horsfield's Cuckoo	Migratory Terrestrial Species
<i>Cuculatus saturatus</i>	Oriental Cuckoo, Himalayan Cuckoo	Listed Marine Species
<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese Snipe	Migratory Wetlands Species Listed Marine Species
<i>Haliaeetus leucogaster</i>	White-bellied Sea-eagle	Listed Marine Species
<i>Hirundapus caudacutus</i>	White-throated Needletail	Migratory Terrestrial Species Listed Marine Species
<i>Lathamus discolor</i>	Swift Parrot	Listed Marine Species
<i>Merops ornatus</i>	Rainbow Bee-eater	Migratory Terrestrial Species Listed Marine Species
<i>Monarcha melanopsis</i>	Black-faced Monarch	Migratory Terrestrial Species Listed Marine Species
<i>Monarcha trivirgatus</i>	Spectacled Monarch	Migratory Terrestrial Species Listed Marine Species
<i>Montacilla flava</i>	Yellow Wagtail	Migratory Terrestrial Species Listed Marine Species
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	Migratory Terrestrial Species Listed Marine Species
<i>Pandion haliaetus</i>	Osprey	Migratory Wetlands Species Listed Marine Species
<i>Rhipidura rufifrons</i>	Rufous Fantail	Migratory Terrestrial Species Listed Marine Species
<i>Rostratula benghalensis s.lat.</i>	Painted Snipe	Listed Marine Species
<i>Tringa nebularia</i>	Common Greenshank, Greenshank	Migratory Wetlands Species Listed Marine Species

3.2. Nature Conservation Act 1992

The *Nature Conservation Act 1992* (NCA) classifies and protects significant areas (Protected Areas) and protects threatened plant and animal species. The *Nature Conservation (Wildlife) Regulation, 1994* (NCWR) lists plant and animal species presumed extinct, endangered, vulnerable, near threatened, least concern, international or prohibited. The schedules of this regulation were considered in this report using a Wildlife Online Database Search with a ten kilometre radius from the site. Species listed under the NCWR with the potential to occur around the subject site are shown in **Table 2**. Refer to **Appendix C** for full search results.



Table 2: NCA Wildlife Online Search Results

Scientific Name	Common Name	Status
Amphibians		
<i>Adelotus brevis</i>	Tusked Frog	Vulnerable
Birds		
<i>Calyptorhynchus lathami lathami</i>	Glossy Black-cockatoo (eastern)	Vulnerable
<i>Ninox strenua</i>	Powerful Owl	Vulnerable
<i>Numenius madagascariensis</i>	Eastern Curlew	Vulnerable
<i>Psephotus pulcherrimus</i>	Paradise Parrot	Extinct in the Wild
<i>Rostratula australis</i>	Australian Painted Snipe	Vulnerable
Mammals		
<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	Vulnerable
<i>Phascolarctos cinereus</i> (southeast Queensland bioregion)	Koala (southeast Queensland bioregion)	Vulnerable
Plants		
<i>Eucalyptus curtisii</i>	Plunkett Mallee	Near Threatened
<i>Marsdenia coronata</i>	Slender Milkvine	Vulnerable
<i>Melaleuca irbyana</i>	-	Endangered
<i>Notelaea ipsviciensis</i>	Cooneana Olive	Endangered
<i>Notelaea lloydii</i>	Lloyd's native olive	Vulnerable
<i>Plectranthus habrophyllus</i>	-	Endangered

Amendments to the 'protected plants' regulatory framework under the NCA commenced on 31 March 2014, establishing new approval triggers and processes for clearing protected plants. A protected plant is defined as all Extinct, Endangered, Vulnerable and/or Near Threatened (EVNT) plant species listed by name in Schedules 1-5 of the NCWR and Least Concern wildlife, not listed by name but identified as a plant indigenous to Australia in Schedule 6.

A search of the Flora Survey Trigger Map identifies that the site is not located within a 'High Risk' Area (refer to **Appendix D**, Map 1). Regardless, if a protected plant is identified on the subject site, under the amended NCA, a protected plant that is in the wild must not be 'taken', which includes being cleared, unless taking is under:

- A conservation plan applicable to the plant;
- A license, permit or other authority under a regulation.; or
- An exemption under a regulation.

3.3. Vegetation Management Act 1999

The *Vegetation Management Act 1999* (VMA) is the key mechanism by which the Queensland Government protects the state's environmental resources pertaining to vegetation. Under the VMA, a series of maps delineate vegetation features across the landscape which are each assigned a conservation value directly related to the remaining extent



of these features in the landscape. The VMA also protects 'essential habitat' vegetation where listed threatened species have been known to occur.

Under the *Vegetation Management Framework Amendment Act 2013* (VMFAA), regulated Vegetation Management Mapping shows vegetation categories used to determine clearing requirements. While areas shown on the map as Category X are not regulated under the VMA, those shown as a Category A, B, C or R are subject to clearing requirements. The latter vegetation categories can only be cleared in accordance with an exemption, self-assessable vegetation clearing code, area management plan or development approval. A supporting map defining Regional Ecosystems, wetlands, watercourses and essential habitat is provided with the Regulated Vegetation Management Map. Approval for clearing of regulated vegetation is required under the *Sustainable Planning Act 2009* (SPA); specifically, assessment is required against *Module 8: Native Vegetation Clearing* of the State Development Assessment Provisions (SDAP).

A property search of the Regulated Vegetation Management Map identifies the site contains Category X non-regulated vegetation and Category B Regulated Vegetation which is protected under the VMA (**Figure 3**). The Vegetation Management Support Map (**Figure 4**) identified the site is mapped with the Regional Ecosystem (RE) that is Least Concern RE12.9-10.2 vegetation as the result of a previously submitted Property Map of Assessable Vegetation (PMAV). This RE is described as:

Corymbia citriodora subsp. variegata open forest or woodland usually with *Eucalyptus crebra*. Other species such as *Eucalyptus tereticornis* and *Corymbia intermedia* may be present in scattered patches or in low densities. Understorey can be grassy or shrubby. Shrubby understorey of *Lophostemon confertus* (whipstick form) often present in northern parts of bioregion. Occurs on Cainozoic and Mesozoic sediments. (BVG1M: 10b).

Clearing of Least Concern remnant vegetation on this property is exempt from approval under the VMA as the vegetation clearing is for an urban purpose in an area zoned for an urban use, therefore a response to *Module 8: Native Vegetation Clearing* of the SDAP is not required.

3.3.1 Vegetation Management Amendment Bill

On 17 March 2016 the Queensland Government introduced the Vegetation Management (Reinstatement) and other Legislation Amendment Bill 2016. This Bill has not been passed however key changes to the VMA resulting from the Amendment Bill would include:

- Reinstatement of protection of high value regrowth on freehold and indigenous land;
- Removal of provisions which permit clearing applications for high value agriculture and irrigated high value agriculture;
- Broadening the protection of regrowth vegetation in watercourse areas to the Burnett-Mary, Eastern Cape York and Fitzroy Great Barrier Reef catchments. In effect land located within 50 m of a watercourse or drainage feature identified on VMA mapping within these catchments will be protected as Category R areas; and
- Reinstating compliance provisions for the reverse onus of proof and remove the 'mistake of fact' defence for vegetation clearing offences.



The amendment would also result in changes to other legislation, in particular the *Offsets Act 2014* and the *Water Act 2000*. Key changes to these Acts would include:

- Amend the Offsets Act so that offsets will be required for any residual impact on prescribed environmental matters rather than only significant residual impacts as is currently the case;
- Give the State the ability to not accept payment in relation to a Commonwealth offset condition if will not achieve the conservation outcomes required under the Queensland environmental offsets framework; and
- Amend the Water Act to allow a person to apply for a riverine protection permit to destroy vegetation in a watercourse, lake or spring. Currently the Act only requires a person to apply for a riverine protection permit to excavate or place fill in a watercourse, lake or spring.

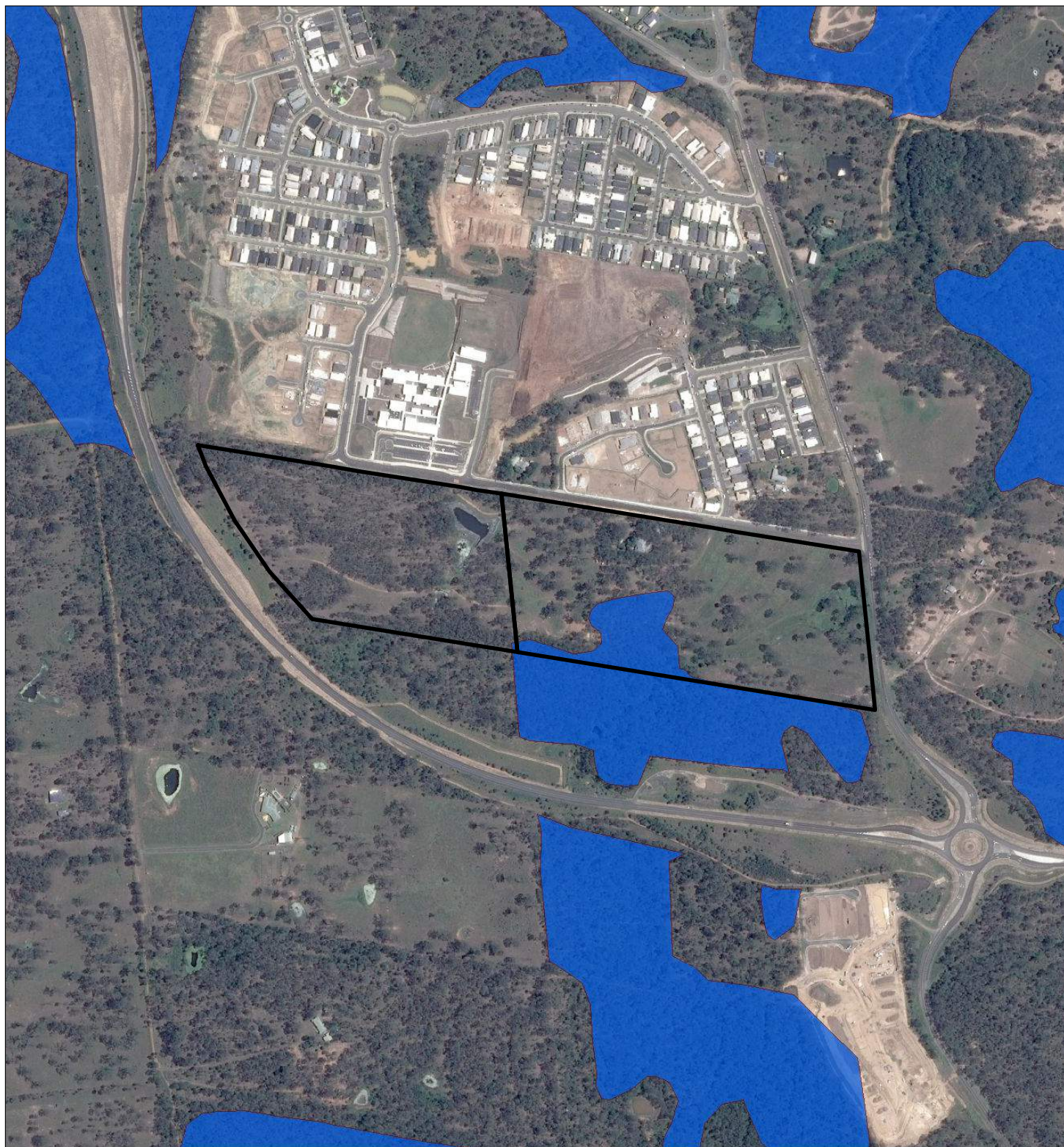
It is not yet clear how vegetation clearing applications will be assessed during the interim period, however explanatory notes released with the Bill may adversely affect “the right to have certain applications considered or amended” retrospectively. This will generally relate only to projects requiring clearing for high value agriculture or in areas mapped as containing high value regrowth vegetation.

A search was carried out of proposed vegetation mapping for the Deebling Heights site. The proposed mapping shows two additional polygons mapped on-site, both described as “Category C and Proposed Category C area containing Endangered Regional Ecosystems”, with the composite RE 12.9-10.2/12.9-10.7/12.3.3/12.9-10.3 mapped over a large portion of the site, and a small amount of RE 12.3.3d/12.3.3 mapped around the waterway in the east of the site. The Category C mapping represents High Value Regrowth, but it is expected that clearing in these areas will be exempt under the “urban purpose in an area zoned for an urban use” rule.

3.4. South East Queensland Koala Conservation State Planning Regulatory Provisions

The *South East Queensland Koala Conservation State Planning Regulatory Provisions* (SEQ Koala Conservation SPRP) came into effect in May 2010, aiming to protect areas of highest priority for Koala conservation action by regulating new development at the assessment stage. It therefore targets areas of the Koala Coast and Pine Rivers (Priority Koala Assessable Development Areas) and prohibits clearing bushland habitat in these areas, as well as areas outside the urban footprint. It also covers Koala Assessable Development Areas which are areas managed under previous state koala conservation initiatives.

The western portion of the site is within the Broad-Hectare Koala Area and is also mapped as a Koala Assessable Development Area (KADA) under the SEQ Koala Conservation State Planning Regulatory Provisions (SPRP) (**Figure 5**). A response to Division 3 of the Koala SPRP has been developed and submitted separately to this report. It is noted that the KADA only occurs on a small area (2.9 ha) at the western extent of Lot 194 on SP193445. Of this 2.9 ha, 2 ha are located west of the Centenary Highway (in the area not being developed), and 0.9 ha is located east of the Centenary Highway. Only 0.09 ha of KADA mapping exists within the development footprint (refer to **Figure 5** and **Appendix A**).



Legend



Project Site DCDB

Regulated Vegetation v1.10



Category A area -
Vegetation Offset/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 -
Vegetation not regulated
under the VMA



Water



Area not categorised

Figure 3

VMA Regulated Vegetation Management Map

File ref. 8122 E Figure 3 Reg Veg A

Date 12/02/2016

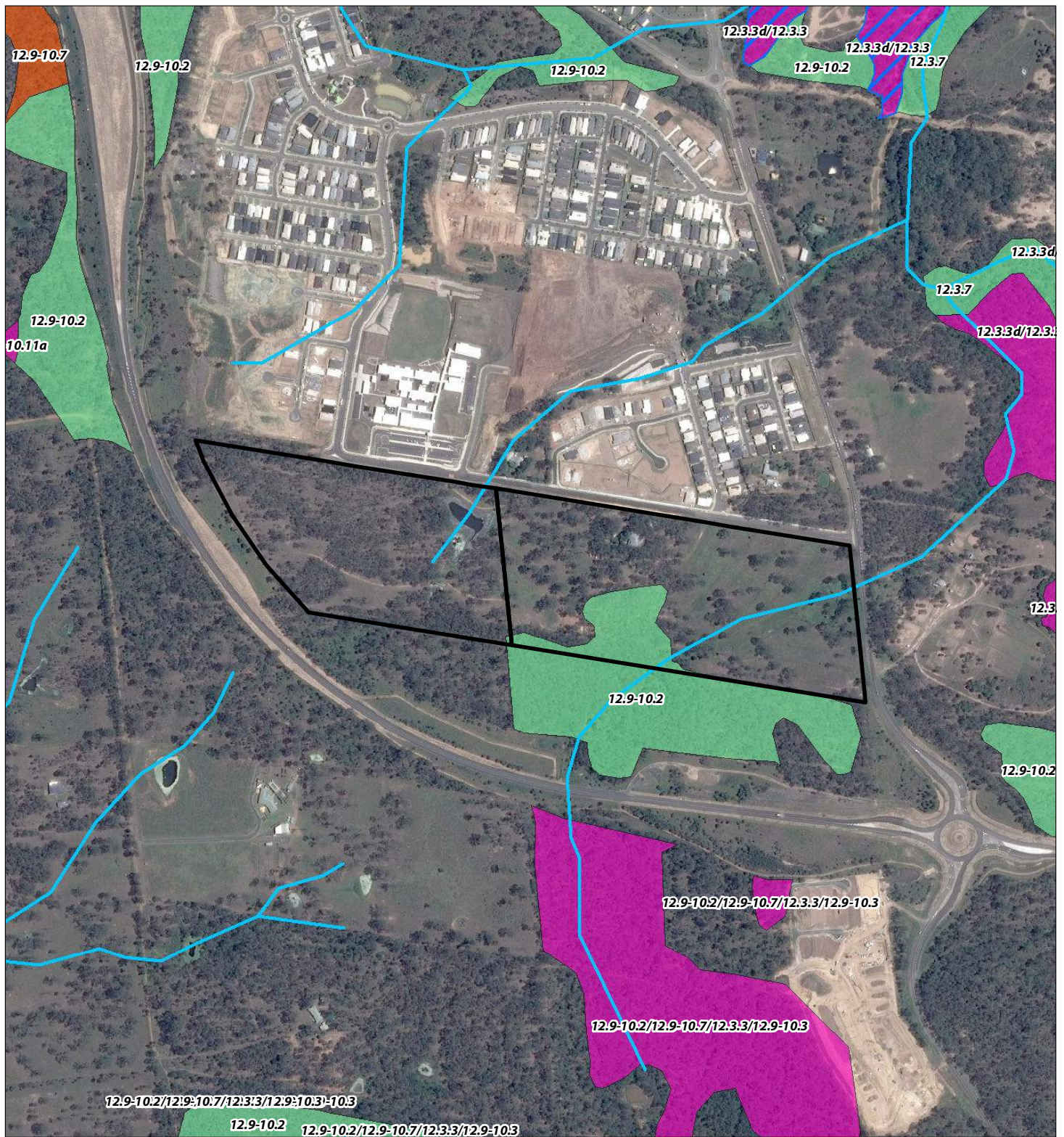
Project Rawlings Road, Deebling Heights

0 50 100 200 300 m

Scale (A4): 1:9,000 [GDA 1994 MGA Z56]



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Legend



Project Site DCDB



Watercourse v1.3



Essential Habitat



Wetland

Regional Ecosystem



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

Figure 4

*VMA Regulated Vegetation
Supporting Map*

File ref. 8122 E Figure 4 REs A

Date 22/02/2016

Project Rawlings Road, Deebling Heights

0 50 100 200 300 m

Scale (A4): 1:9,000 [GDA 1994 MGA Z56]



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3.5. Coastal Protection and Management Act 1995

The *Coastal Protection and Management Act 1995* (Qld) seeks to protect the coastal resources of the coastal zone. The Act establishes a framework for the protection, conservation, rehabilitation and management of the coastal zone with regard to the core objectives of the national strategy for ecologically sustainable development in the use of the Coastal Zone. The Act also ensures decisions about land use and development safeguard life and property from the threat of coastal hazards.

Coastal Development is managed to protect coastal resources through the planning and development framework established under the *Sustainable Planning Act 2009* (Qld) (SPA). Specifically, coastal development requiring assessment under SPA is required to respond to Module 10: Coastal Protection of the State Development Assessment Provisions specifically in relation to:

- Tidal Works; and
- Development in a Coastal Management District.

The proposed development site is not located within a Coastal Management District and do not involve tidal works (refer to Map 2 in **Appendix D**). Therefore, the development does not trigger assessment under the Act.

3.6. Wetland Protection Areas

The Queensland Government is committed to the statutory protection of wetlands in catchments adjoining the Great Barrier Reef lagoon, with a focus on actions outlined in the *Reef Water Quality Protection Plan 2013*.

The **Department of State Development** is an assessment manager or referral agency for a development application for material change of use, reconfiguring a lot or operational works involving high impact earthworks (as defined in the *Sustainable Planning Regulation 2009*) in wetland protection areas (WPA). Under Schedule 26 of the *Sustainable Planning Regulation 2009*, high impact earthworks is defined as operational work that involves changing the form of land, or placing a structure on land, in a way that diverts water to or from a wetland.

The SDAP Module 11: Wetland Protection seeks to ensure that development is planned, designed, constructed and operated so as to not cause harm to the hydrology of wetlands in wetland protection areas that protect matters of national and state environmental significance.

The site does not contain any wetland protection areas and therefore does not trigger an assessment against Module 11 of the SDAP (refer to **Appendix D**, Map 3).

3.7. Fisheries Act 1994

The *Fisheries Act 1994* deals with the use, conservation and improvement of Queensland's fisheries resources and fish habitats. The Fisheries Act seeks to ensure adequate provision for fish movement and habitat access during development processes that include:

- Building work in or adjacent to a declared Fish Habitat Area (FHA);
- Carrying out operational work completely or partly within a declared fish habitat area;
- Carrying out operational work that is the removal, destruction or damage of marine plants; and



- Carrying out Waterway Barrier Works.

Developments that involve any of these above activities require assessment against *Module 5: Fisheries Resources* of the SDAP.

The proposed residential development does not occur within any area mapped as FHA or associated waterways (refer to **Appendix D** Map 4). Therefore, an assessment against *Module 5: Fisheries Resources* of the SDAP is not required.

3.8. Australian Soil Resource Information System

The Australian Soil Resource Information System (ASRIS) collates and maintains the best available, nationally consistent soil and land resource information for Australia. It provides a scientific information infrastructure for assessing and monitoring the condition of Australia's soil and land resources and contains a set of spatial and temporal databases that maintain national soil and land information in a consistent and usable format. The ASRIS maps the entire site as Chromosols (**Figure 6**). Chromosols are considered a component of Land Zone 9-10 Regional Ecosystems which is mapped on-site (**Section 3.3**).

Chromosols

Description
Chromosols have a strong contrasting texture. They are not strongly acidic or sodic in the upper B horizon. The parent material of Chromosols ranges from highly siliceous, siliceous to intermediate in composition. These soils are found in imperfectly drained and well-drained sites. These soils have moderate agricultural potential with moderate chemical fertility and water-holding capacity. They can be susceptible to soil acidification and soil structure decline.



Legend




-  Project Site DCDB
-  Chromosols
-  Demosols

Figure 6

ASRIS Soil Classification

File ref. 8122 E Figure 6 ASRIS Soils A
Date 23/05/2016
Project Rawlings Road, Deebling Heights

0 50 100 200 300 m

Scale (A4): 1:10,000 [GDA 1994 MGA Z56]



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3.9. State Planning Policy

On 2 December 2013, the Queensland Government's single State Planning Policy (SPP) came into effect replacing the previous ten State Planning Policies. **Part A** of the SPP confirms the hierarchical order of the State planning instruments, with the SPP placed third below the SPA and State Planning Regulatory Provisions (SPRPs), but above Regional Plans, Standard Planning Scheme Provisions and Local Planning Instruments. **Part B** confirms the application of the SPP to:

1. The making or amending of a planning scheme,
2. Designation of land for community infrastructure by a Minister,
3. Making or amending a regional plan,
4. Assessment of a development application mentioned in **Part E**, to the extent that the SPP has not been identified in the planning scheme as being appropriately integrated in the planning scheme, and
5. Carrying out of self-assessable development mentioned in **Part F**.

The core of the SPP is contained in **Part D**, where it identifies 16 Matters of State Environmental Significance (MSES) in land use planning and development, arranged into five broad categories. These State interests will be consequently integrated into Local Government Planning Schemes across Queensland. State interests are included within the category of Environment and Heritage, which are:

1. Biodiversity
2. Coastal Environment
3. Cultural Heritage
4. Water Quality

Importantly, **Part E** of the SPP provides interim development assessment requirements which ensures that State interests are considered by local government when assessing development applications where the local government planning scheme does not yet integrate the State interests in the SPP. Interim development assessment requirements have been prepared for eight of the 16 State interests, including Biodiversity, Coastal Environment and Water Quality. In essence, any development application across a site containing a State interest identified in **Part E** will need to demonstrate compliance with the interim development assessment requirements.

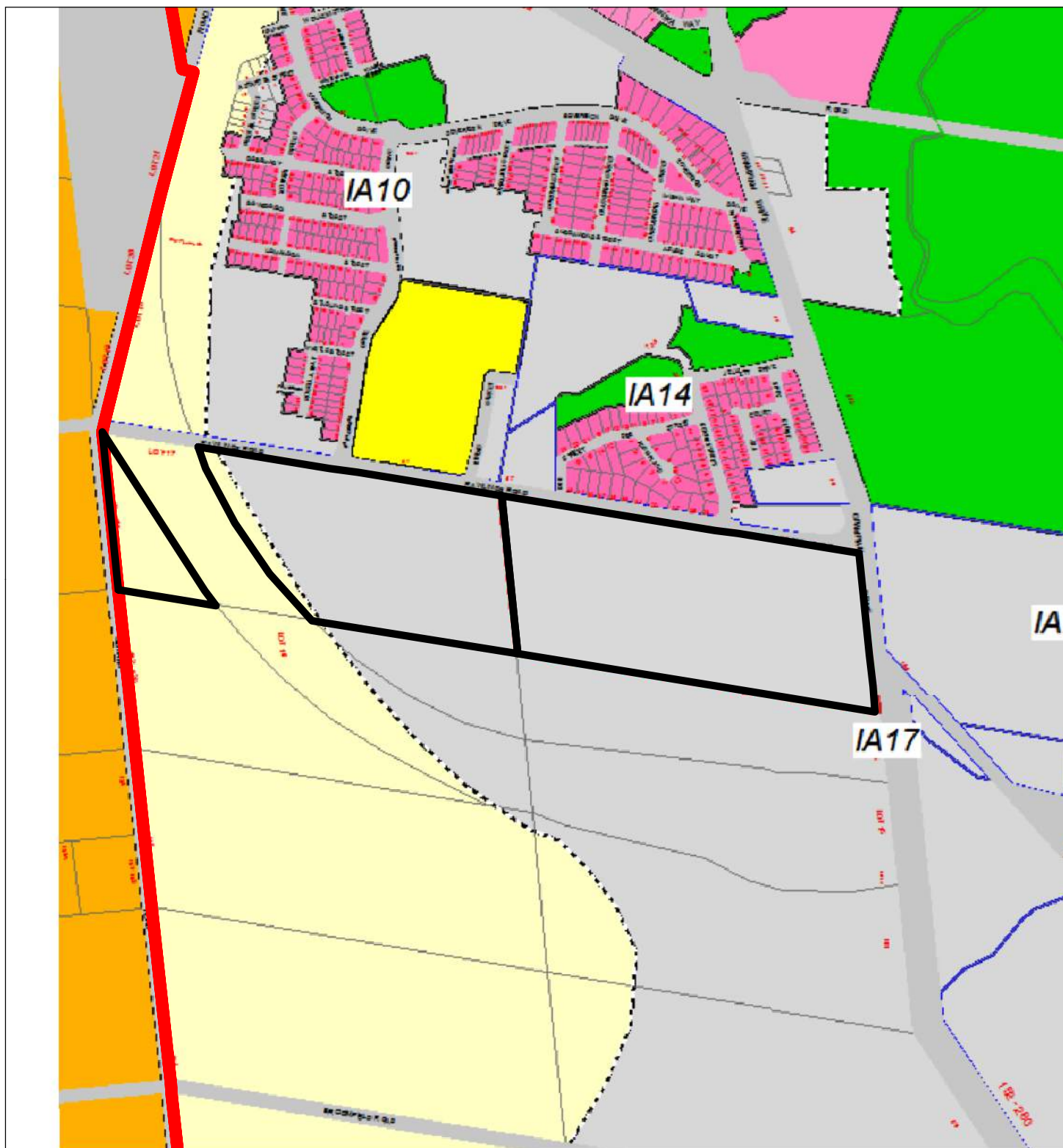
The subject site is mapped as containing Matters of State Environmental Significance – Wildlife Habitat (which is reflective of the Koala SPP mapping) and Regulated Vegetation intersecting a watercourse. The site is also mapped as MSES – Water Quality (Climatic Regions) which is a blanket layer along coastal regions of Queensland and requires the development to adopt applicable stormwater management design objectives. The entire site is mapped as Flood Hazard Area (Local Government), and has Medium and High Bushfire Potential Hazard, and Potential Impact Buffer mapped on it. Refer **Appendix D**, Maps 5-7.

The Ripley Valley has been designated by **Economic Development Queensland** as a Priority Development Area (PDA), which covers 4,680 hectares and will consist of 50,000 residences, housing 120,000 people. PDAs are parcels of land identified for specific accelerated development with a focus on economic growth, for which the State Government works with Local Councils to streamline the planning, approval, and development processes to get results. This planning intention is reflected under SARA mapping, which designates the site as within the Regional



Plan Urban Footprint, and adjacent to the Ripley Valley PDA (**Figure 7**). This site is also zoned under Ipswich City Council's planning scheme as "Future Urban" (**Figure 7**).

A small portion in the west of the Lot 194 is mapped as Rural/Constrained Land Zone as part of the Ripley Valley Master Planned Area Structure Plan (refer to **Appendix D** Map 8), however this portion of the site is west of Centenary Highway and is not intended for development under the current proposal.



Legend

- Regional Plan - Urban Footprint Boundary
- Project Site DCDB
- Sub-Urban T3 (Ripley)
- Residential Low Density
- Special Uses - Ripley Valley
- Recreation - Ripley Valley
- Future Urban
- Rural Constrained - Ripley Valley
- Rural B (Pastoral)

Figure 7

Ipswich Planning Scheme - Zoning

File ref. 8122 E Figure 7 ICC Zoning A
Date 23/05/2016
Project Rawlings Road, Deebling Heights

0 50 100 200 300 m

Scale (A4): 1:9,000 [GDA 1994 MGA Z56]



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4. Ecological Assessment

4.1. Introduction

The proposed residential development site at Rawlings Road, Deebling Heights has been subject to on ground surveys by **SHG** to identify existing ecological values. Two Senior Ecologists conducted field assessments across the subject site on 28 and 29 January 2016, with a follow up visit on 4 February 2016. The weather conditions during the site assessment was sunny with intermittent rain periods. In addition to identifying site flora and fauna values, species presence, and adjoining habitats, a primary focus of the investigations was to conduct detailed surveys for matters identified as having the highest likelihood of presence on-site, and therefore the most potential to be impacted by the proposed action. The EPBC Act listed species identified as having the highest potential to occur on-site are listed in **Table 3** with the full assessment of the likelihood of occurrence of TECs and species identified through the PMST included as **Appendix E**, and discussed in **Section 4.7**.

Table 3: EPBC-listed species identified as having the potential to occur on-site

Scientific Name	Common Name	Status	Type of Presence
Fauna			
<i>Lathamus discolor</i>	Swift Parrot	Endangered	Species or species habitat known to occur within area.
<i>Phascolarctos cinereus</i>	Koala	Vulnerable	Species or species habitat likely to occur within the area.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vulnerable	Species or species habitat likely to occur within the area.

4.2. Field Assessment Methods

The field survey methods conducted during the January and February 2016 field assessments included:

- Active searches for species of note;
- Broad assessment of habitat features to identify vegetation communities and potential habitat for threatened species;
- Observations of potential usage of the area (scats, scratches, footprints, and feeding evidence);
- Deployment and recording using motion detection cameras (for five nights);
- Random meander search technique for flora species; and
- Targeted surveys for EPBC listed species.

The following Sections present results from flora and fauna surveys conducted at the site with a focus on the presence or absence of *Matters of National Environmental Significance* (MNES) and assessment of the potential for the proposed action to impact on these matters. These surveys were carried out to address all EPBC Act issues (refer to **Section 3.1** and **Appendix E**), however, the primary focus was placed on Koalas as they are known to occur in the region, and *Pteropus poliocephalus* (Grey-headed Flying-fox) and *Lathamus discolor* (Swift Parrot) as they were



identified as potentially utilising the site as a food source when food trees are flowering. Survey effort is shown in **Plan 1**.

4.3. General Observations

The following general observations were made across the entire proposed development site:

- The investigation area consists of the development footprint, which includes Lot 195 on S3157 and Lot 194 on SP193445 east of the Centenary Highway. Approximately two hectares of Lot 194 is located on the western side of the highway and is not included in the development footprint.
- Although historically disturbed, the application area contains a small patch of least concern remnant Regional Ecosystem (RE), with the majority of the site containing non-remnant vegetation (refer to **Figure 3**). The dominant vegetation assemblage in remnant and regrowth areas is the mature and semi-mature canopy forming the ecologically dominant layer. As typically found in open forest and woodland structures, very few shrub species were recorded with the ground layer dominated by a mix of native and exotic grass species. The balance of the site is open paddocks, and infrastructure for the existing residence including a house, sheds, and constructed garden beds (refer to **Photos 5-8**).
- Vegetated areas were uniform in density and age structure, with only mild variations occurring in tree species dominance and co-dominance. Generally, these variations coincided with topographical features (ridges, plains, gullies, etc.), soils and geology.
- The site is bound by Rawlings Road to the north (see **Photos 1-2**), South Deebling Creek Road to the east (**Photos 3-4**), and Centenary Highway to the west. Additionally, along the southern side of the property there is an average of about 200 m of land between the subject site and the Centenary Highway (refer to **Figure 2**).
- Two stream order one drainage lines are located on-site, one near the centre of the site in a south to north direction, and one in the eastern portion of the site in a southwest to northeast direction (refer to **Figure 4**). Both mapped waterways are highly modified as a result of vegetation clearing and a number of constructed dams. Further details are provided in **Section 4.5**. Both drainage lines are to be retained and rehabilitated as part of the development, which will improve the current condition and ecological values on-site.
- Six threatened plant and 18 threatened fauna species listed under the provisions of the EPBC Act are considered to have potential to occur within the vicinity of the application site (refer to **Section 3.1** and **Appendix B**). Six flora species and eight fauna species listed under the *Nature Conservation Act 1992* (NCA) were also identified as potentially occurring on-site (refer to **Section 3.2** and **Appendix C**).
- In addition, three listed Threatened Ecological Communities (TECs) described as *Lowland Rainforest of Subtropical Australia*, *Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland* and *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* were considered to have potential to occur on-site. No listed TECs were observed on-site, or in the vicinity, however, it is noted that *Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland* is known to occur locally and the species has been recorded within close vicinity of this site. Extensive searches of this species were



conducted on the subject site, particularly in areas where the pre-clear mapping showed the endangered RE 12.3.3 which includes *Melaleuca irbyana* (Swamp Tea Tree) as an indicator species.

- No threatened flora specimens were observed on-site or within the vicinity of the site.



Photo 1. Looking north at Rawlings Road.



Photo 2. Rawlings Road, looking toward the northeast.

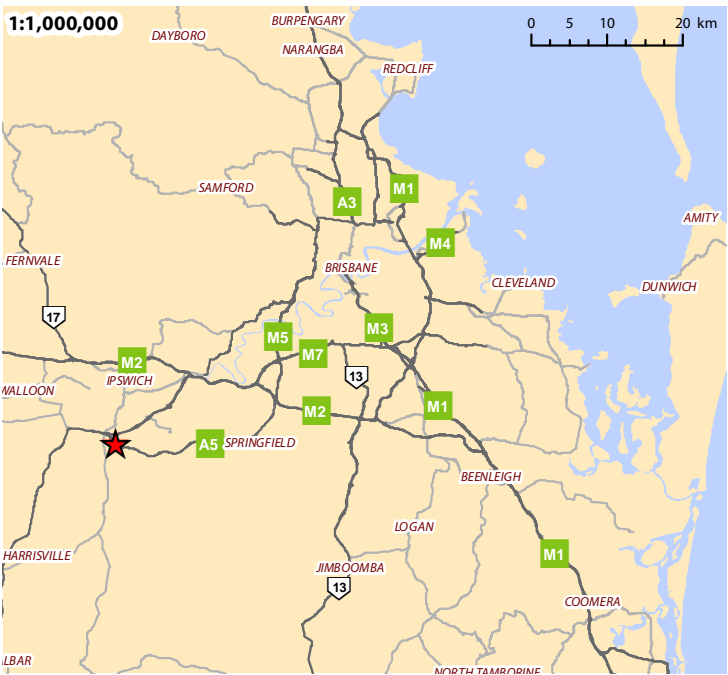
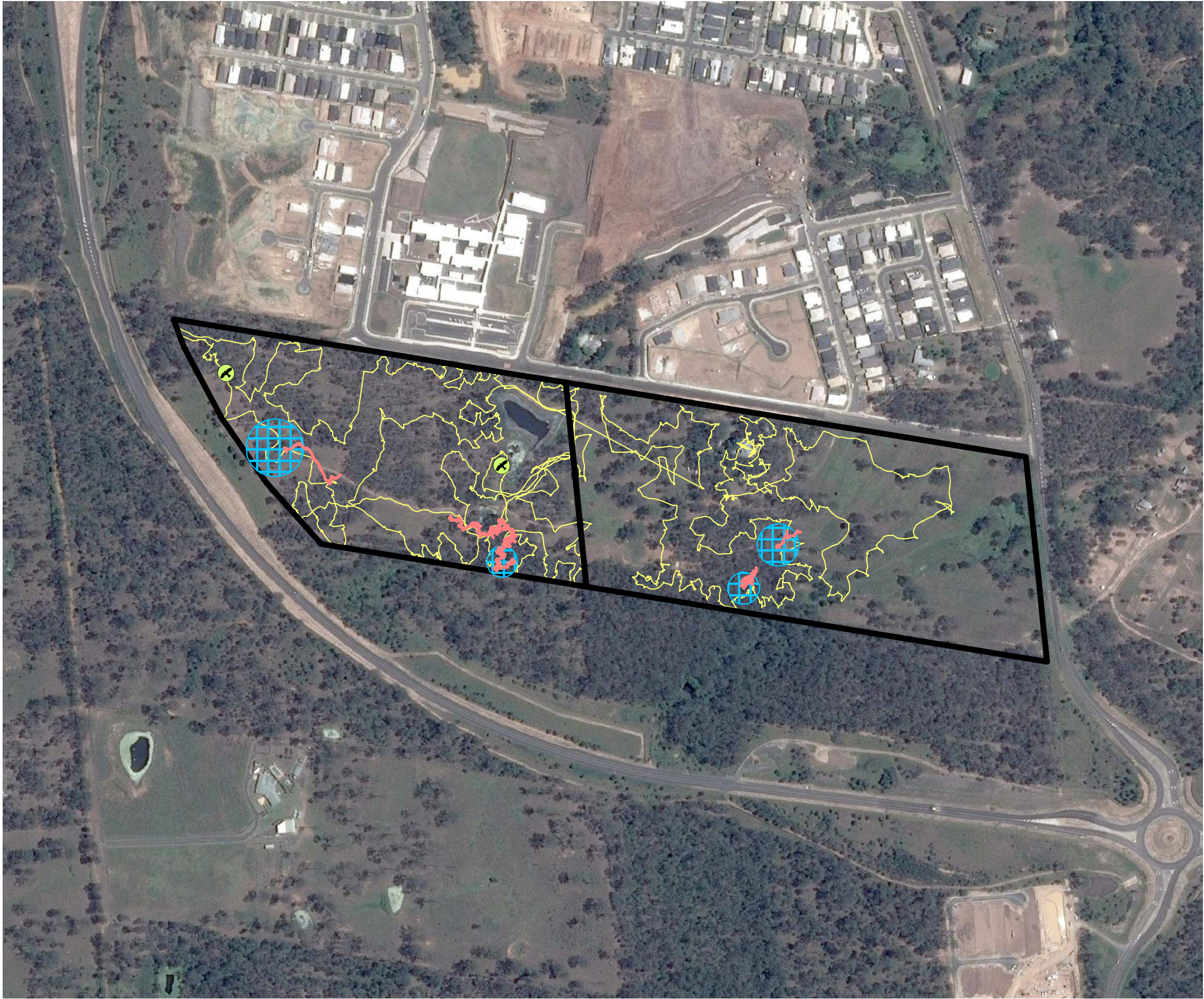







Photos 3-4. Eastern side of site, facing north along South Deebling Creek Road.

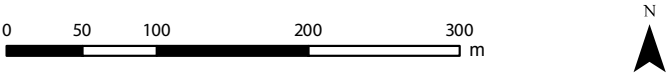




Photos 5-8. Vegetation around the residences and associated structures on-site.



- Legend**
-  Project site DCDB
 -  Bird survey
 -  Scat meander search
 -  SAT location
 -  GPS tracklog



SH saunders
havill
group



APPROVED
COMPANY
ISO 9001
Quality
Management Systems
QMS Certification
Services

APPROVED
COMPANY
ISO 14001
Environmental
Management Systems
QMS Certification
Services

Grampian Drive, Deebling Heights

Ecological Field Survey

Date | 25/02/2016
Scale | 1:5,000 @ A3
Coordinate System | GDA 1994 MGA Zone 56
Projection | Transverse Mercator
Client | DHA
Project | Grampian Drive, Deebling Heights
Address/RPD | 19553157
Sources | QLD GIS Layers (QLD Gov. Info Services 2015),
Aerial (Nearmap, 2015)

Plan 1

SHG File
8122 E 01 Field Survey A

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CONFIRM ALL DIMENSIONS ON SITE PRIOR TO CONSTRUCTION AND DO NOT SCALE FROM THE DRAWINGS. ALL DIMENSIONS ARE IN METRES. ANY DISCREPANCIES SHOULD BE CLARIFIED IN WRITING WITH SAUNDERS HAVILL GROUP PRIOR TO THE COMMENCEMENT OF WORK.
PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR FURTHER UNDER-GROUND SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.

ISSUES:				
Issue	Date	Description	Drawn	Checked
A	25/02/2016	Prelim Draft	TC	MS



4.4. Flora

The following flora observations were made across the proposed development site:

- The investigation area on Lot 195 on S3157 and Lot 194 on SP193445 included over 25 ha of land covering both mapped remnant and non-remnant vegetation across two landzones. The site includes approximately 1.84 ha of mapped Least Concern RE 12.9-10.2 (approximately 7% of the site). The majority of this remnant polygon exists on the adjacent property to the south, with the portion on Lot 195 effectively forming a small projection. This RE community is described as *Corymbia citriodora* subsp. *variegata* +/- *Eucalyptus crebra* open forest on sedimentary rocks. Site survey confirmed species within this remnant patch to be dominated by *Corymbia citriodora* (Spotted Gum) and consistent with the current regional ecosystem mapping (refer to **Photo 9**).
- The remainder of the site is mapped as non-remnant vegetation and includes patches of regrowth vegetation, open paddocks, and residential infrastructure including planted garden beds (refer to **Photos 5-8 and 10-15**).
- A total of 99 flora species were observed on-site, made up of 49 native species and 50 introduced species (refer to **Table 4** for the native flora species list and **Table 7** for the introduced flora species list). A number of the native species have been planted in the constructed garden beds.
- The regrowth vegetation recorded on-site contained patches dominated by either Spotted Gum or *Eucalyptus crebra* (Narrow Leaf Ironbark). All of these patches are largely devoid of understorey species with a very sparse sub-canopy layer. Species within this layer included Spotted Gum, Narrow Leaf Ironbark, *Corymbia intermedia* (Pink Bloodwood), *Corymbia tessellaris* (Moreton Bay Ash), *Acacia disparrima* (Hickory Wattle), and *Alphitonia excelsa* (Soap Tree).
- In its current condition, the site would not be considered high value habitat to support any threatened flora species or TECs.



Photo 9. Mapped Least Concern RE12.9-10.2.



Photos 10 – 15. General site vegetation – regrowth and scattered trees on maintained paddocks.

Table 4: Site Native Flora Species List

Scientific Name	Common Name
<i>Acacia concurrens</i>	Black Wattle
<i>Acacia disparrima</i>	Hickory Wattle
<i>Acacia fimbriata</i>	Fringed Wattle



Scientific Name	Common Name
<i>Acacia podalyriifolia</i>	Silver Wattle
<i>Agapanthus sp.</i>	Agapanthus
<i>Allocasuarina luehmannii</i>	Bull Oak
<i>Alphitonia excelsa</i>	Soap Tree
<i>Angophora leiocarpa</i>	Smooth Bark Apple
<i>Araucaria cunninghamii</i>	Hoop Pine
<i>Archontophoenix alexandra</i>	Alexandra Palm
<i>Azolla pinnata</i>	Azolla Fern
<i>Breynia oblongifolia</i>	Coffee Bush
<i>Cheilanthes distans</i>	Bristle Cloak Fern
<i>Chrysocephalum apiculatum</i>	Yellow Buttons
<i>Corymbia citriodora</i>	Spotted Gum
<i>Corymbia intermedia</i>	Pink Bloodwood
<i>Corymbia tessellaris</i>	Moreton Bay Ash
<i>Dianella longifolia</i>	Blueberry Lilly
<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark
<i>Eucalyptus mollucana</i>	Gum Topped Box
<i>Eucalyptus siderophloia</i>	Grey Ironbark
<i>Eucalyptus tereticornis</i>	Forest Red Gum
<i>Eustrephus latifolius</i>	Wombat Berry
<i>Gahnia aspera</i>	Saw Sedge
<i>Geitonoplesium cymosum</i>	Scrambling Lilly
<i>Glochidion sumatranum</i>	Large Leaved Cheese Tree
<i>Goodenia rotundifolia</i>	Goodenia
<i>Grevillea robusta</i>	Silky Oak
<i>Hardenbergia violacea</i>	Native Sarsaparilla
<i>Imperata cylindrica</i>	Blady Grass
<i>Jagera pseudorhus</i>	Foambark
<i>Juncus usitatus</i>	Common Rush
<i>Lomandra longifolia</i>	Mat Rush
<i>Lophostemon suaveolens</i>	Swamp Box
<i>Ludwigia peploides</i>	Water Primrose
<i>Macaranga tanarius</i>	Macaranga
<i>Melaleuca quinquenervia</i>	Broad Leaf Paperbark
<i>Nymphoides indica</i>	Water Snowflakes
<i>Parsonsia straminea</i>	Monkey Rope Vine
<i>Persicaria decipiens</i>	Slender Knotweed
<i>Philydrum lanuginosum</i>	Woolly Frogmouth
<i>Platynerium superbum</i>	Staghorn
<i>Plectranthus parviflorus</i>	A Herb



Scientific Name	Common Name
<i>Poa labillardieri</i>	Tussock Grass
<i>Sida cordifolia</i>	Flannel Weed
<i>Themeda triandra</i>	Kangaroo Grass
<i>Trema tomentosa</i>	Poison Peach
<i>Typha</i> sp.	Typha
<i>Xanthorrhoea johnsonii</i>	Grass Tree

4.4.1 GPS Tree Plot

A tree plot was carried out locating and identifying all trees on-site with a trunk Diameter at Breast Height (DBH) greater than 300 mm. Data for the GPS Tree Plot has is summarised below. Refer to **Plan 2** for the Tree Plot and **Appendix F** for the Tree Schedule.

- A total of 665 tree specimens were located and details were recorded – including species, DBH, height, canopy spread, and general conditions including any signs of fauna activity. These tree specimens consisted of seven native flora species (refer to **Table 5**).
- The dominant species recorded is *Corymbia citriodora* (Spotted Gum) accounting of over 43% of trees and *Eucalyptus crebra* (Narrow Leaf Ironbark) which accounted for approximately 31% of the site. *Eucalyptus tereticornis* (Forest Red Gum) accounted for over 15% of the tree plot, with this species recorded within regrowth patches, as well as along the stream order one drainage lines. **Table 5** provides a summary of the GPS Tree Plot Survey completed across the site.
- **Table 6** provides a summary of the DBH of trees recorded as part of the Tree Plot. Over 55% of trees recorded retained a trunk DBH between 300 and 399 mm. Almost 87% of trees had a trunk DBH less than 600 mm. This is significant in that the age structure and size of the majority of the trees did not contain hollows or any features suitable for nesting and roosting requirements of native fauna.

Table 5: Tree Plot Summary

Species	Common Name	Number Recorded	Percentage Recorded (%)
<i>Corymbia citriodora</i>	Spotted Gum	287	43.16
<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	207	31.13
<i>Eucalyptus tereticornis</i>	Forest Red Gum	102	15.34
<i>Corymbia intermedia</i>	Pink Bloodwood	30	4.51
<i>Corymbia tessellaris</i>	Moreton Bay Ash	18	2.71
Dead	Dead	11	1.65
<i>Acacia disparrima</i>	Hickory Wattle	8	1.2
<i>Eucalyptus siderophloia</i>	Grey Ironbark	2	0.3
Total		665	100



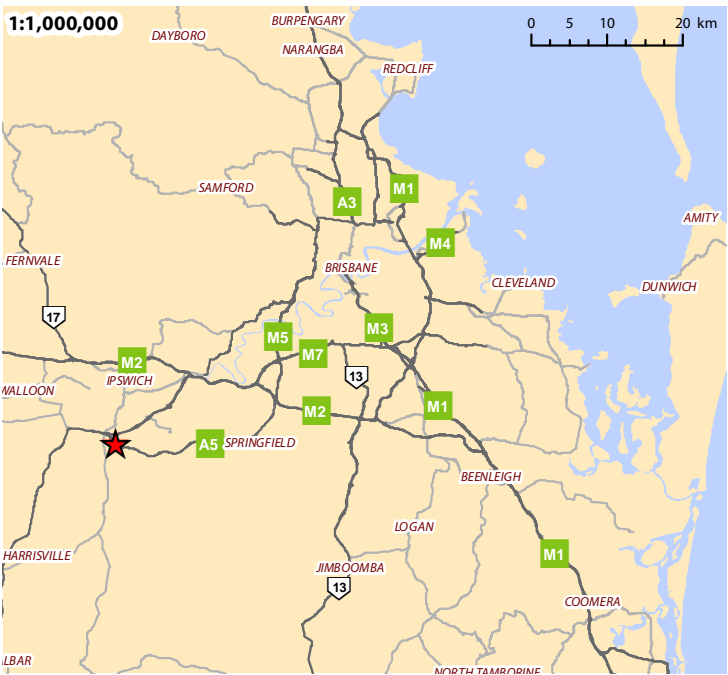
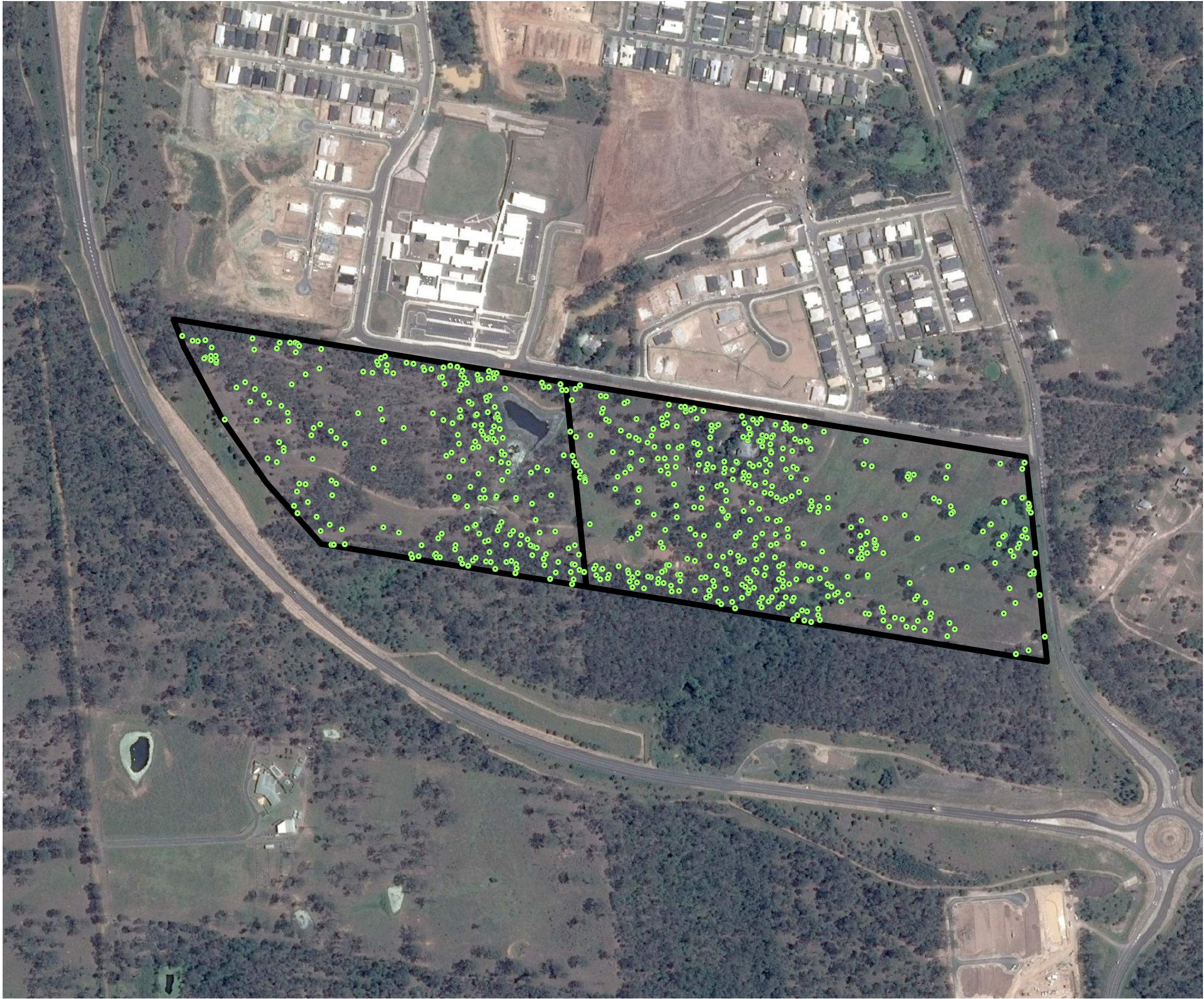
Table 6: Tree Plot Size Summary



Total DBH (mm)	Number Recorded	Percentage Recorded (%)
300 – 399 mm	370	55.64
400 – 499 mm	122	18.35
500 – 599 mm	83	12.48
600 – 699 mm	65	9.77
700 – 799 mm	15	2.26
800 – 899 mm	6	0.90
900 – 999 mm	1	0.15
> 1000 mm	3	0.45
Total Recorded	665	100%

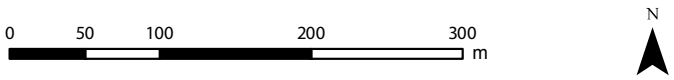
4.4.2 Weeds and Introduced Species

The following observations were made on weeds and introduced species observed on-site during the field survey:

- Fifty introduced flora species were recorded on-site, with a number of these being weed species (see **Table 7**).
- Seven of the 50 introduced species identified on-site are listed as declared pests under the *Land Protection (Pest and Stock Route Management) Act 2002* (LPA) (see **Table 7**). These species include four Class 2 weeds identified as *Ambrosia artemisiifolia* (Annual Ragweed), *Baccharis halimifolia* (Groundsel Bush), *Bryophyllum delagoense* (Mother-of-millions), and *Senecio madagascariensis* (Fireweed). The other three declared pests are Class 3 weeds and identified as *Asparagus africanus* (Ornamental Asparagus), *Lantana camara* (Lantana), and *Lantana montevidensis* (Creeping Lantana). LPA declared weeds must be managed according to the following:
 - Class 1 – All landholders are required by law to keep their land free of Class 1 pests.
 - Class 2 – All landholders must try to keep their land free of Class 2 pests and it is an offence to possess, sell or release these pests without a permit.
 - Class 3 – A landowner may have to take reasonable action against the weed if it is causing, or has the potential to cause an adverse impact, on a nearby 'environmentally significant area' (e.g. national park). It is an offence to sell, introduce, release or supply a Class 3 pest.
- Fifteen weed species observed on-site are listed locally by Ipswich City Council as environmental weeds and have been prioritised as High, Medium, or Low Priority species to highlight the importance of particular species. These are identified in **Table 7**.
- The majority of declared weeds were observed as isolated individuals or within small isolated clumps, however *Lantana montevidensis* (Creeping Lantana) was observed in greater densities throughout the site. Severe infestations of *Lantana camara* (Lantana) were observed within the adjacent properties to the south, however it should be noted that infestations on the subject site have largely been managed.



- Legend**
-  Project site DCDB
 -  Native Tree



Grampian Drive, Deebling Heights

Tree Plot

Plan 2

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ISSUES:				
Issue	Date	Description	Drawn	Checked
A	15/02/2016	Prelim Draft	TC	MS

Date | 15/02/2016
Scale | 1:5,000 @ A3
Coordinate System | GDA 1994 MGA Zone 56
Projection | Transverse Mercator
Client | DHA
Project | Grampian Drive, Deebling Heights
Address/RPD | 19553157
Sources | QLD GIS Layers (QLD Gov. Info Services 2015),
Aerial (Nearmap, 2015)

SHG File
8122 E 02 Tree Plot A



Table 7: Introduced Flora Species

Species	Common Name	LPA declaration	ICC Classification
<i>Ageratum houstonianum</i>	Blue Billygoat Weed		
<i>Ambrosia artemisiifolia</i>	Annual Ragweed	Class 2	
<i>Asparagus aethiopicus</i>	Ground Asparagus	Class 3	
<i>Asparagus africanus</i>	Ornamental Asparagus		
<i>Baccharis halimifolia</i>	Groundsel Bush	Class 2	
<i>Bidens pilosa</i>	Cobblers Pegs		
<i>Bougainvillea glabra</i>	Bougainvillea		
<i>Brunfelsia bonodora</i>	Yesterday-today-tomorrow		
<i>Bryophyllum delagoense</i>	Mother-of-millions	Class 2	
<i>Cassytha glabella</i>	Devil's Twine		
<i>Centella asiatica</i>	Pennywort		
<i>Chloris gayana</i>	Rhodes Grass		Low Priority Species
<i>Chloris virgata</i>	Feathertop Rhodes Grass		
<i>Cirsium vulgare</i>	Spear Thistle		
<i>Commelina diffusa</i>	Wandering Jew		
<i>Conyza bonariensis</i>	Flaxleaf Fleabane		
<i>Corymbia torrelliana</i>	Cadaghi		Low Priority Species
<i>Cyperus polystachyos</i>	Bunchy Sedge		
<i>Cyperus rotundus</i>	Nutgrass		
<i>Desmodium intortum</i>	Green-leaf Desmodium		
<i>Duranta erecta</i>	Duranta		
<i>Eragrostis curvula</i>	African Lovegrass		
<i>Eremophila debilis</i>	Winter Apple		
<i>Gloriosa superba</i>	Glory Lily		
<i>Gomphocarpus physocarpus</i>	Balloon Cotton Bush		Low Priority Species
<i>Heliotropium amplexicaule</i>	Blue Heliotrope		
<i>Hypoestes phyllostachya</i>	Polka Dot Plant		
<i>Jacaranda mimosifolia</i>	Jacaranda		Medium Priority Species
<i>Jasminum officinale</i>	Jasmine Vine		
<i>Lantana camara</i>	Lantana	Class 3	Low Priority Species
<i>Lantana montevidensis</i>	Creeping Lantana	Class 3	Low Priority Species
<i>Megathyrsus maximus</i>	Guinea Grass		
<i>Melinis repens</i>	Red Natal Grass		
<i>Murraya paniculata</i>	Murraya		
<i>Nephrolepis cordifolia</i>	Fishbone Fern		Low Priority Species
<i>Nymphaea caerulea</i>	Blue Water Lilly		
<i>Ochna serrulata</i>	Ochna		Low Priority Species
<i>Opuntia tomentosa</i>	Prickly Pear		
<i>Passiflora suberosa</i>	Corky Passion Vine		Low Priority Species



<i>Plumeria rubra</i>	Frangipani		
<i>Sansevieria trifasciata</i>	Mother-in-law's Tongue		Low Priority Species
<i>Schefflera actinophylla</i>	Umbrella Tree		Low Priority Species
<i>Senecio madagascariensis</i>	Fireweed	Class 2	
<i>Senna pendula</i>	Easter Cassia		Medium Priority Species
<i>Solanum chrysotrichum</i>	Giant Devil's Fig		
<i>Solanum mauritianum</i>	Wild Tobacco Tree		Low Priority Species
<i>Solanum nigrum</i>	Blackberry Nightshade		
<i>Solanum seaforthianum</i>	Brazilian Nightshade		High Priority Species
<i>Spathodea companionata</i>	African Tulip Tree		
<i>Syragrus romanzoffiana</i>	Cocus Palm		Low Priority Species

4.5. Watercourses

Two stream order one drainage lines are mapped within the subject site (refer to **Figures 4 and 6**). The following observations have been made based on a field surveys within the mapped waterways.

4.5.1 Central Watercourse

A stream order one watercourse is mapped as traversing the central portion of the site adjacent to Rawlings Road, flowing in a south to north direction. This mapped feature extends approximately 150 m into the site. The site visit verified this mapped watercourse does not contain defined bed and banks, and more likely to be a "drainage feature" as defined under the *Water Act 2000*.

The majority of the mapped watercourse includes a constructed dam and has been completely modified from its natural state (**Photos 16-19**). There is a distinct lack of waterway-associated vegetation in this area with established canopy trees dominated by Spotted Gum and Narrow Leaf Ironbark, with scattered Forest Red Gum and *Eucalyptus moluccana* (Gum Topped Box) specimens.

The flora species observed within and along the edges of the constructed dam were all common species typical of such modified environments including both native and exotic species. *Nymphaea caerulea* (Blue Water Lilly) and *Nymphoides indica* (Water Snowflakes) were the dominant water lilies identified in the dam with patches of *Cyperus polystachyos* (Bunchy Sedge) and *Juncus usitatus* (Juncus) along the edges.



Photos 16-19. Dammed waterway in central portion of site, adjacent to Rawlings Road.

4.5.2 Eastern Watercourse

A watercourse is mapped traversing the eastern portion of the property, in a northeast direction (refer to **Figures 4 and 7**). The site visit verified the mapped watercourse to not contain defined bed and banks, and it is more likely a “drainage feature” as defined under the *Water Act 2000*. The drainage line has been almost completely cleared of vegetation with only a few scattered and established native trees, with a ground layer dominated by introduced grasses and weed species (refer to **Photos 20-23**).

The flow paths were limited to certain sections of the mapped waterway with the balance areas typical of flood plain conditions. This watercourse contained limited water pools and appeared to only run in times of relatively high rainfall. Pools were mainly observed within the lower portion of the watercourse towards South Deebling Creek Road. As such, very limited instream habitat types were recorded. The waterways are not considered suitable habitat for threatened species given the relatively high levels of disturbance, primarily from weed incursion, stock watering, and pastoral activities.

The vegetation located in this area is typical of floodplains and includes Gum Topped Box woodland with other frequently occurring species including Forest Red Gum, Narrow Leaf Ironbark, Grey Ironbark and Pink Bloodwood. A small patch of vegetation dominated by *Allocasuarina luehmannii* (Bull Oak) with scattered *Corymbia tessellaris* (Moreton Bay Ash) and Forest Red Gum is also located adjacent to the eastern boundary within the mapped watercourse.



The balance of the mapped watercourse is dominated by both introduced and native ground layer species including large patches of *Imperata cylindrica* (Blady Grass), *Megathyrsus maximus* (Guinea Grass) and in the dryer areas *Chloris gayana* (Rhodes Grass). All other species observed are common to the local area.



Photos 20-23. Waterway mapped in eastern portion of the site.

4.6. General Site Fauna

The following observations were made during site surveys regarding the site fauna:

- Thirty-seven fauna species were observed on-site, consisting of 28 bird species, two mammal species, five reptile species, and two amphibian species (see **Table 8**). No threatened species listed under the EPBC Act or NCA (refer to **Section 3.1** and **3.2** respectively) were observed on-site.
- Utilisation of the site is limited to fauna that can adapt to a highly modified and disturbed landscape containing anthropogenic influences. A variety of common avi-fauna were observed utilising the site as part of a broader home range.
- A large number of *Macropus giganteus* (Eastern Grey Kangaroo) were observed utilising the western portion of the site and within the regrowth vegetation east of the central mapped watercourse (**Photo 24**). Throughout



each of the site visits the species was seen foraging on-site and resting amongst the regrowth trees. These site conditions are ideal for such species, including the permanent water in the form of two constructed dams.

- A total of 665 native trees with a trunk DBH greater than 300 mm recorded throughout the investigation area (refer to **Section 4.2.1**). Of these located trees, twelve contained bird nests which appeared to be utilised by *Corvus orru* (Torresian Crow), *Manorina melanocephala* (Noisy Minor), and *Gymnorhina tibicen* (Australian Magpie). Nine trees were recorded with hollows, some of which were being utilised by families of *Trichoglossus haematodus* (Rainbow Lorikeet). Eight trees were also recorded with obvious termite mounds.
- The motion detecting cameras did not capture any additional fauna species to those seen on-site during the site survey.



Photo 24. Eastern Grey Kangaroo mob observed within the western portion of the site near the central watercourse.



Photo 25. *Demansia psammophis* (Yellow-faced Whip Snake)



Photo 26: *Cacatua sanguinea* (Little Corella) observed within *E. siderophloia* towards the sites eastern boundary.

Table 8: Fauna Species List

Scientific Name	Common Name
BIRDS	
<i>Alectura lathami</i>	Australian Brush-turkey



Scientific Name	Common Name
<i>Ardea ibis</i>	Cattle Egret
<i>Cacatua sanguinea</i>	Little Corella
<i>Centropus phasianinus</i>	Pheasant Coucal
<i>Chenonetta jubata</i>	Australian Wood Duck
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike
<i>Corvus orru</i>	Torresian Crow
<i>Coturnix ypsilophora</i>	Brown Quail
<i>Dacelo novaeguineae</i>	Laughing Kookaburra
<i>Dendrocygna eytoni</i>	Plumed Whistling Duck
<i>Egretta novaehollandiae</i>	White-faced Heron
<i>Eolophus roseicapilla</i>	Galah
<i>Eurystomus orientalis</i>	Dollarbird
<i>Gallinula tenebrosa</i>	Dusky Morehen
<i>Grallina cyanoleuca</i>	Magpie-lark
<i>Gymnorhina tibicen</i>	Australian Magpie
<i>Manorina melanocephala</i>	Noisy Minor
<i>Meliphaga lewinii</i>	Lewins Honeyeater
<i>Merops ornatus</i>	Rainbow Bee-eater
<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant
<i>Phaps chalcoptera</i>	Common Bronzewing
<i>Platycercus adscitus</i>	Pale-headed Rosella
<i>Rhipidura leucophrys</i>	Willie Wagtail
<i>Scythrops novaehollandiae</i>	Channel-billed Cuckoo
<i>Todiramphus macleayi</i>	Forest Kingfisher
<i>Trichoglossus chlorolepidotus</i>	Scaly-breasted Lorikeet
<i>Trichoglossus haematodus</i>	Rainbow Lorikeet
<i>Vanellus miles</i>	Masked Lapwing
MAMMALS	
<i>Trichosurus vulpecula</i>	Common Brushtail Possum
<i>Macropus giganteus</i>	Grey Kangaroo
REPTILES	
<i>Cryptoblepharus virgatus</i>	Wall Skink
<i>Demansia psammophis</i>	Yellow-faced Whip Snake
<i>Intellagama lesueurii</i>	Eastern Water Dragon
<i>Lampropholis delicata</i>	Grass Skink
<i>Pogona barbata</i>	Common Bearded Dragon
AMPHIBIANS	
<i>Litoria caerulea</i>	Common Green Treefrog
<i>Rhinella marina</i>	Cane Toad



4.7. Potential for EPBC Flora and Fauna Species

Overall, the desktop assessment identified some potential for *Lathamus discolor* (Swift Parrot), *Phascolarctos cinereus* (Koala), and *Pteropus poliocephalus* (Grey-headed Flying-fox) to occur on-site (refer to the Likelihood of Occurrence table – **Appendix E**). Assessment of on-ground conditions at the site found that the Swift Parrot (Endangered) and the Grey-headed Flying-fox (Vulnerable) have could potentially be visitors to the site due to the presence of suitable food resources in the form of winter flowering eucalypts on-site. However, the quality and amount available is considered insignificant in the context of the surrounding landscape.

Of the thirty-seven fauna species observed on-site, the only evidence of listed species under the EPBC Act was evidence of historical Koala usage (discussed in further detail in **Section 4.7.1**). Stratified log, leaf litter, and habitat searches did not reveal any other signs of usage by listed threatened species, and the site's ability to support such fauna species is highly unlikely as these species are generally highly sensitive, specialised, and require particular habitat features, which this site does not provide. Field surveys did not detect any evidence of any other listed fauna species utilising the site, including a lack of detection with motion-detection cameras (refer to **Table 8**). As a result, the site is not considered to provide any significant or unique values for these species.

Four migratory species were considered to have potential to utilise the site or be fly-over species – Rainbow Bee-eater, Cattle Egret, White-throated Needle-tail, and Osprey (refer to **Appendix E**). The Rainbow Bee-eater and Cattle Egret were observed on-site (refer to **Table 8**), however these two species are considered common within the local area and are generalist species that utilise a broad range of habitats. No White-throated Needle-tail or Osprey individuals were recorded on-site. The site has the potential to provide some low value foraging habitat for these species, however the habitat and vegetation values present are not considered to provide any significant or unique ecological values for these species. It is not expected the proposed development would impact upon these species.

The Likelihood of Occurrence assessment provided in **Appendix E** provides further detail on the potential presence and impacts on all EPBC species identified by the protected matters search.

4.7.1 *Phascolarctos cinereus* (Koala)

As the Koala is known to occur in the area, and Koala habitat is mapped on-site, Koala specific surveys were carried out by experienced ecologists during the site survey. The objective of these surveys was to apply methods specified in the *EPBC Act Referral Guidelines for the Vulnerable Koala*, specifically the Spot Assessment Technique (SAT) assessments.

The SAT method is an assessment of Koala activity involving a search for any Koalas and signs of Koala usage. The SAT involves identifying a non-juvenile tree of any species within the site that is either observed to have a Koala or scats or is known to be a food tree or otherwise important for Koalas, and recording any evidence of Koala usage of that tree including presence, identifiable scratches or scats. The nearest non-juvenile tree is then identified and the same data recorded. The next closest non-juvenile tree to the first tree is then assessed and so on until 30 trees have been surveyed. The number of trees showing evidence of Koala activity is expressed as a percentage of the total number of trees sampled to indicate the frequency of Koala usage. Assessment of each tree involves a systematic search for Koala scats beneath the tree within one metre radius of the trunk. After approximately two person minutes of searching for scats, the base of the trunk is observed for scratches and the crown for Koala (refer Phillips & Callaghan 2011).



Four SAT surveys were carried out at the site with the locations shown on **Plan 1**. A summary of the SAT results is provided in **Table 9** (refer **Appendix G** for full SAT data). These estimates are taken from the **Australian Koala Foundation** Koala activity level classification table (Phillips & Callaghan 2011) using the East Coast (med-high) Activity Category, which is applicable in habitats dominated by residual, transferral or alluvial type landscapes considered medium-high nutrient soils with good water holding capacity (Steve Phillips, personal communication). The mapping on-site shows chromosol soils across the entire site (refer to **Figure 6**). Chromosols have medium water-holding capacity and chemical fertility. Additionally, the presence of low-lying land associated with the two mapped waterways on-site would suggest Koala density could be medium to high in this area, supporting the activity category applied.

Table 9: Summary of SAT Surveys

SAT (Spot Assessment Technique) Assessment No.	Evidence of Koala Use (%)	Koala Use (High / Medium / Low)
1	23.33	Medium
2	16.67	Low
3	13.34	Low
4	20.00	Low

AKF Koala Activity Level Classification Table

ACTIVITY CATEGORY	LOW USE	MEDIUM (NORMAL) USE	HIGH USE
Area (density)			
East Coast (low)	< 9.47%	≥ 9.47% but ≤ 12.59%	> 12.59%
East Coast (med – high)	< 22.52%	≥ 22.52% but ≤ 32.84%	> 32.84%
Western areas (med – high)	< 35.84%	≥ 35.84% but ≤ 46.72%	> 46.72%

No Koalas were sighted during field surveys. Evidence of Koala in the form of scats observed on-site resulted in a Koala usage level of 'Low' to 'Medium' across the site which most likely represents transient Koalas utilising the site. Given the isolated location of the site with the Centenary Highway to the west and south, Rawlings Road to the north, and South Deebling Creek Road to the east, it is unlikely that the site provides important habitat for the Koala. Additionally, increased traffic and encroaching development around the site will be a deterrent to Koalas. It is considered highly unlikely that the proposed development will impact any Koala populations.



5. Conclusions

Ecological assessments were conducted over the proposed development site in January and February 2016 to describe the environmental values and target specific EPBC Act listed species. The survey effort was designed to provide adequate information to assess the likelihood of occurrence and impact on species listed under the EPBC Act.

The following conclusions have been made:

- Although historically disturbed, the application area contains a small amount of mapped remnant vegetation, with the majority of the site containing non-remnant vegetation. The site is bound by Rawlings Road to the north, South Deebling Creek Road to the east, and Centenary Highway to the west, and near south. The site includes approximately 1.84 ha of mapped Least Concern RE 12.9-10.2, with the remaining portion of the site mapped as non-remnant and including patches of regrowth vegetation, open paddocks, and infrastructure for the existing residence including a house, sheds, and constructed garden beds.
- Two stream order one watercourses are mapped on-site, one near the centre of the site and one in the eastern portion of the site. Site survey found both watercourses were more representative of drainage lines, with no defined bed or banks and both being cleared of watercourse-associated vegetation and having a number of constructed dams.
- No threatened flora or fauna species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or *Nature Conservation Act 1992* (NCA) were recorded during field studies. Further, the three TECs identified as potentially occurring on-site were not present.
- No Koala sightings were recorded on-site or in the surrounds. Koala habitat and usage assessments as per EPBC Act Guidelines found evidence of 'Low' to 'Medium' Koala usage within areas containing recognised Koala habitat trees located within the proposed development area.
- Two EPBC listed migratory species were observed on-site (Rainbow Bee-eater and Cattle Egret), however these are both considered to be common species within the local area, and utilise a broad range of habitats.
- Ninety-nine flora species were observed on-site, consisting of 49 native species and 50 introduced species. A number of the native and introduced species have been planted in the constructed garden beds. Of the introduced species, seven are declared pest species under the LPA, and 15 are **Ipswich City Council** environmental weeds.
- Fauna observed on-site included species adapted to a highly modified and disturbed landscape containing anthropogenic influences. A variety of common avi-fauna were observed utilising the site as part of a broader home range. A large number of Eastern Grey Kangaroos were observed using the site. Of the 665 native trees with a trunk DBH greater than 300 mm on-site, 12 trees contained bird nests, nine had hollows, and eight had obvious termite mounds.

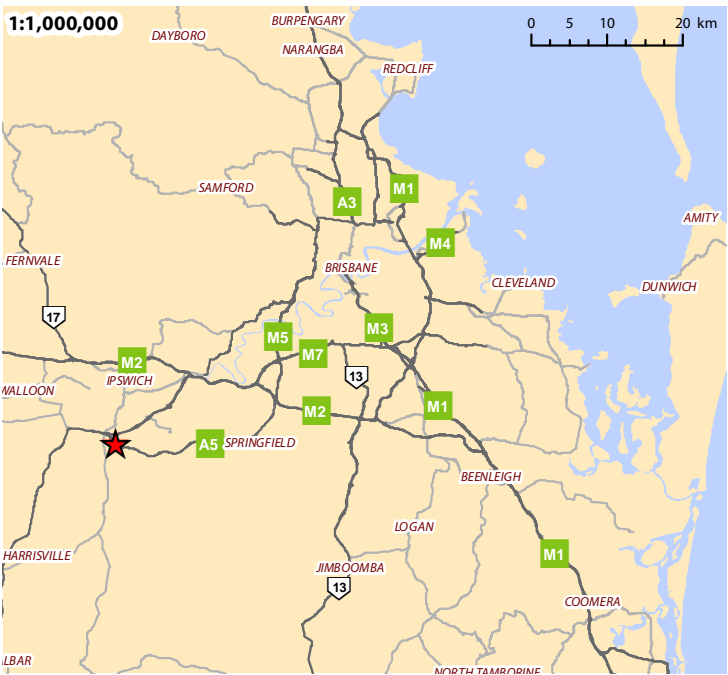
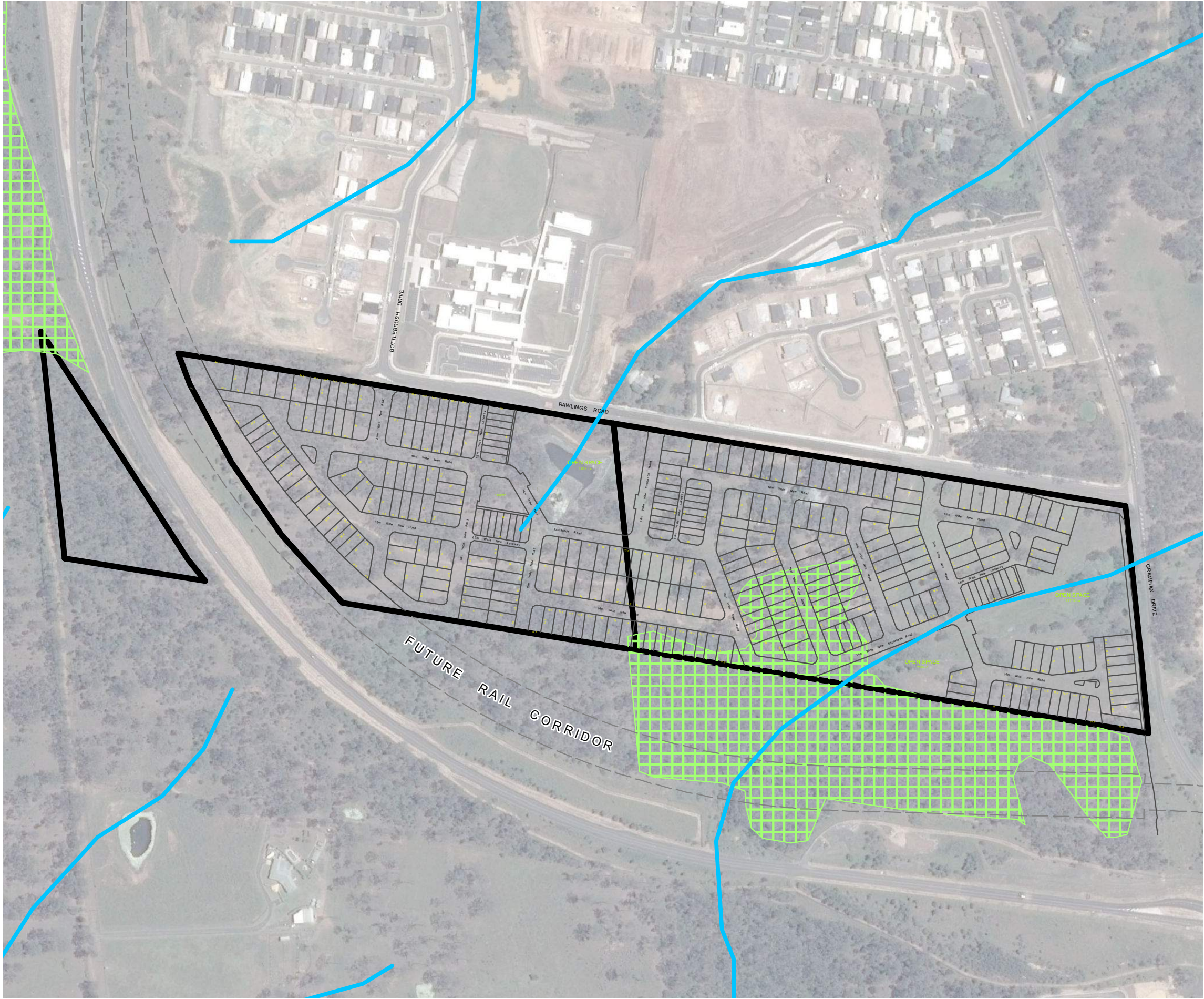


5.1. Development Proposal

The development proposal is for a residential development consisting of 295 lots with 332 dwellings (refer to **Appendix A**) on a site ideally situated for development. The entire property is 27.37 ha, with the proposed development layout covering approximately 25 ha, meeting the planning scheme “Neighbourhoods” density outcome. The site is surrounded by existing rural residential allotments to the west and south. Rawlings Road bounds the north of the site, and South Deebling Creek Road bounds the east. The property to the north of Rawlings Road has recently undergone residential development, and properties to the south of Centenary Highway and east of South Deebling Creek Road have development applications in process currently. The Ripley Valley PDA is adjacent to the site, indicating the entire area is slated for development.

The site is predominately cleared of significant vegetation, with the majority of the site containing cleared paddock with scattered trees and regrowth. Field survey identified no TECs or threatened species under Commonwealth or State legislation on-site. Overall, the development will be located on highly disturbed areas, consistent with maintained paddocks, minimal understory vegetation, high disturbance levels and introduced flora species incursion, and edge effects from surrounding development. The proposed development will include the clearing of some native vegetation, however, it includes the establishment of approximately 4.2 ha of Open Space areas to provide areas for retention and rehabilitation of ecological values (refer to **Appendix A** and **Plan 3**). Drainage areas currently have the highest ecological values on-site and will be retained within the Open Space areas and rehabilitated. The only fauna observed on-site were common species mostly made up of generalist avi-fauna that would only utilise the site intermittently amongst a mosaic of other areas and could still use the retained areas within the development area.

Based on the conclusions from field assessment discussed in this report, while the proposal will result in the loss of some disturbed vegetation, it will not impact on any unique or high ecological values. In keeping with the zoning intent, the project proposes the establishment of 295 residential lots. Earthworks are required to facilitate development and create a suitable development footprint, resulting in the removal of mapped remnant vegetation and regrowth vegetation. The retention of the western portion of the property west of the Centenary Highway and the Open Space areas associated with the mapped watercourses (refer **Appendix A** and **Plan 3**) will ensure continued habitat values and connectivity to common species that may be utilising the site.



- Legend**
- Project site DCDB
 - VMA Watercourse
 - VMA Regulated Vegetation
 - Development Layout



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ISSUES:				
Issue	Date	Description	Drawn	Checked
A	22/02/2016	Prelim Draft	TC	MS
B	14/04/2016	Layout Amendments	TC	KD

Grampian Drive, Deebling Heights

Development Layout

Date | 14/04/2016
Scale | 1:4,500 @ A3
Coordinate System | GDA 1994 MGA Zone 56
Projection | Transverse Mercator
Client | DHA
Project | Grampian Drive, Deebling Heights
Address/RPD | 19553157
Sources | QLD GIS Layers (QLD Gov. Info Services 2015),
Aerial (Nearmap, 2015)

Plan 3

SHG File
8122 E 03 Development Layout B



6. Recommendations

6.1. Establishment of Open Space in Development

The proposed development design includes an Open Space of approximately 4.2 ha throughout the development (refer to **Appendix A**). These areas align with the mapped waterways and will seek to retain as much existing vegetation as possible (potentially up to 1,600 m² of the mapped RE). The establishment of these areas will allow for refuge and a corridor for any fauna on-site trying to traverse the area. The establishment of this Open Space will assist to mitigate the removal of mature native trees, and will provide significant opportunity to include Koala habitat trees in any rehabilitation works in these areas. Additionally, the portion of Lot 194 west of the Centenary Highway will not be developed as part of this proposal and will continue to provide habitat and connectivity on the western side of the road.

6.2. Vegetation Clearing and Management Plan

A Vegetation Clearing and Management Plan (VC&MP) should form part of the broader management document submitted as part of the OPERATIONAL WORKS drawings for the project site. The VC&MP will need to consider incidental tree retention across the site as well as areas available for planting to offset cleared mature native trees.

6.2.1 VC&MP

The VC&MP should cover clearing of all vegetation listed in this report and include details on:

- Clearly shown trees to be removed;
- All civil works likely to impact on existing vegetation;
- Temporary and permanent exclusion and protection fencing;
- Roles and responsibilities for site contractors, the developer and the consultant group;
- Stockpiling and site access locations;
- A clearing sequence plan showing the commencement of clearing and direction of removal (this should be in conjunction with the Fauna Management Plan to allow for the appropriate flushing of fauna towards safe havens and/or the application of an appropriate relocation program);
- Links to weed management and revegetation proposals;
- The stock piling and reuse of cleared vegetation;
- Areas for replanting and species to be utilised.

6.3. Fauna Management Plan

A Fauna Management Plan (FMP) should be prepared for potential impacts of the construction phase covering the loss of vegetated areas, isolated trees and likely barriers and impediments to local dispersal.

6.3.1 FMP

The FMP should link closely with the VC&MP and include details on:

- Species surveyed as using the site with a focus on those most likely impacted by development works;
- A list of relevant State and Commonwealth legislation constraints and controls for the above listed fauna;
- A plan showing existing habitat opportunities and locations;
- Details of the threats to existing fauna species;



- Clearing sequence plan from the VC&MP;
- Management and mitigation measures i.e. temporary use of fauna exclusion fencing;
- Fauna spotter role, contacts and certification; and
- Specific fauna management procedures for potential or known habitat trees.



7. Appendices

Appendix A

Proposed Layout

Appendix B

Environment Protection and Biodiversity Conservation Act 1999 Protected Matters Database Search

Appendix C

Nature Conservation Act 1992 (Qld) Wildlife Online Database Search Results

Appendix D

Environmental Searches

Appendix E

Likelihood of Occurrence Schedule for EPBC Act Listed Species

Appendix F

Tree Schedule

Appendix G

Koala SAT and Habitat Assessment Survey Results



Appendix A

Proposed Layout

Legend

- Site Boundary
- Rail Resumption
- Road Resumption
- Open Space / Drainage
- Pedestrian Link
- Potential Dual Occupancy
- Q100
- Q20
- Q10

YIELD BREAKDOWN						
STANDARD ALLOTMENTS						
Lot Type	Lot Dimensions	Standard Lot Area	Total Allotments	%	Small Lot Mix	
Villa	10.7m x 32m	342.4m²	98	33.8%	81.7%	< 450m²
Premium Villa	12.5m x 32m	400m²	89	30.7%		
Courtyard	14m x 32m	448m²	50	17.2%		
Premium Courtyard	16m x 32m	512m²	34	11.7%	18.3%	> 450m²
Traditional	18m x 32m	576m²	19	6.6%		
Total Standard Allotments			290	100.00%		
MEDIUM DENSITY SUPER ALLOTMENTS						
Lot Type	Total Allotments	Total Dwellings				
28m Deep Laneway	2	18				
30m Deep Laneway	3	24				
Total Medium Density	5	42				
OVERALL YIELD						
	Total Allotments	Total Dwellings				
Overall Totals	295	332				

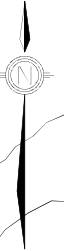
LAND BUDGET		
	Area	Percentage
Area of Subject Site	25.473 ha	100.0%
SALEABLE AREA		
Standard Allotments	12.810 ha	50.3%
Medium Density Allotments	0.980 ha	3.8%
Total Area of Allotments	13.790 ha	54.1%
ROAD RESERVE		
Collector Streets	0.687 ha	2.7%
Local Access Streets	5.096 ha	20.0%
Pedestrian Connections	0.297 ha	1.2%
Gramplan Drive Resumption	0.178 ha	0.7%
Rawlings Road Resumption	0.139 ha	0.5%
Total Area of New Road	6.398 ha	25.1%
RAIL RESUMPTION		
Rail Resumption	1.100 ha	4.3%
Total Rail Resumption	1.100 ha	4.3%
OPEN SPACE		
Stormwater / Drainage	4.186 ha	16.4%
Total Open Space	4.186 ha	16.4%

DENSITY CALCULATION OPTION 1	
Including Southern Drainage Corridor	
Site Area	25.473 ha
Net Developable Area*	21.524 ha
Total Dwellings	332
Density (dw/ha)	15.4
*excludes Trunk Infrastructure (Road and Rail Resumptions) and Regional Drainage Corridor	

DENSITY CALCULATION OPTION 2	
Excluding Southern Drainage Corridor	
Site Area	25.473 ha
Net Developable Area*	24.057 ha
Total Dwellings	332
Density (dw/ha)	13.8
*excludes Trunk Infrastructure (Road and Rail Resumptions)	

Note:
All Lot Numbers, Dimensions and Areas are approximate only, and are subject to survey and Council approval.
Dimensions have been rounded to the nearest 0.1 metres.
Areas have been rounded down to the nearest 5m².
The boundaries shown on this plan should not be used for final detailed engineers design.
Source Information:
Site boundaries: RPS Survey.
Adjoining information: DCDB.
Contours: RPS Survey.
Q10, Q20 & Q100: Water Technology.

DRAFT





Appendix B

Environment Protection and Biodiversity Conservation Act 1999
Protected Matters Database Search



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: 06/05/16 10:15:35

[Summary](#)

[Details](#)

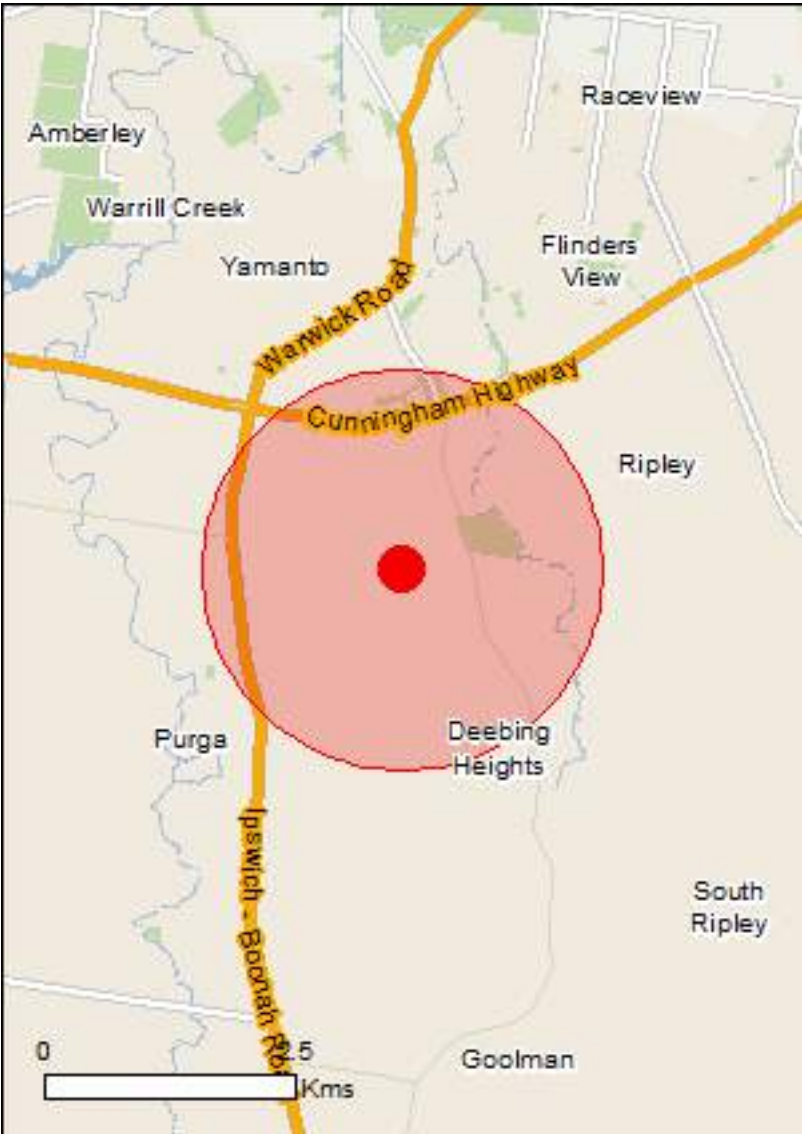
[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

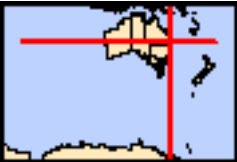
[Acknowledgements](#)



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

[Coordinates](#)

[Buffer: 2.0Km](#)



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:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	24
Listed Migratory Species:	14

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	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:	30
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

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
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area
Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland	Critically Endangered	Community likely to 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	Foraging, feeding or related behaviour may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat known to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Poephila cincta cincta Black-throated Finch (southern) [64447]	Endangered	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur

Name	Status	Type of Presence within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll [331]	Endangered	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 may occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Plants		
Arthraxon hispidus Hairy-joint Grass [9338]	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
Notelaea ipsviciensis Cooneana Olive [81858]	Critically Endangered	Species or species habitat may occur within area
Notelaea lloydii Lloyd's Olive [15002]	Vulnerable	Species or species habitat likely to occur within area
Phebalium distans Mt Berryman Phebalium [81869]	Critically Endangered	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Delma torquata Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species

Name	Threatened	Type of Presence
Hirundapus caudacutus White-throated Needletail [682]		habitat may occur within area Species or species habitat known to 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 may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may 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 likely to occur within area

Migratory Wetlands Species		
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely 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		
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

Name	Threatened	Type of Presence
Ardea ibis Cattle Egret [59542]	Endangered	habitat likely to occur within area
Cuculus saturatus Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]		Species or species habitat likely to 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 may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]	Endangered*	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		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 Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat likely 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

Name	Status	Type of Presence
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		
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
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

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.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

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

-27.67659 152.7515

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](#)
- [-Parks and Wildlife Commission NT, Northern Territory Government](#)
- [-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, Atherton and Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- 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.



Appendix C

Nature Conservation Act 1992 (Qld)
Wildlife Online Database Search Results



Queensland Government

Wildlife Online Extract

Search Criteria: Species List for a Specified Point

Species: All

Type: All

Status: Rare and threatened species

Records: All

Date: All

Latitude: -27.676

Longitude: 152.7512

Distance: 10

Email: kimdelaney@saundershavill.com

Date submitted: Tuesday 01 Dec 2015 10:50:58

Date extracted: Tuesday 01 Dec 2015 11:00:03

The number of records retrieved = 14

Disclaimer

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

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

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

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	amphibians	Limnodynastidae	<i>Adelotus brevis</i>	tusked frog		V		2
animals	birds	Cacatuidae	<i>Calyptorhynchus lathami lathami</i>	glossy black-cockatoo (eastern)		V		1
animals	birds	Psittacidae	<i>Psephotus pulcherrimus</i>	paradise parrot		PE	EX	1
animals	birds	Rostratulidae	<i>Rostratula australis</i>	Australian painted snipe		V	E	8
animals	birds	Scolopacidae	<i>Numenius madagascariensis</i>	eastern curlew		V	CE	1
animals	birds	Strigidae	<i>Ninox strenua</i>	powerful owl		V		4
animals	mammals	Macropodidae	<i>Petrogale penicillata</i>	brush-tailed rock-wallaby		V	V	2
animals	mammals	Phascolarctidae	<i>Phascolarctos cinereus</i>	koala		V	V	1065
plants	higher dicots	Apocynaceae	<i>Marsdenia coronata</i>	slender milkvine		V		14/13
plants	higher dicots	Lamiaceae	<i>Plectranthus habrophyllus</i>			E	E	1/1
plants	higher dicots	Myrtaceae	<i>Eucalyptus curtisii</i>	Plunkett mallee		NT		8/8
plants	higher dicots	Myrtaceae	<i>Melaleuca irbyana</i>			E		5/4
plants	higher dicots	Oleaceae	<i>Notelaea ipsviciensis</i>			E	CE	12/12
plants	higher dicots	Oleaceae	<i>Notelaea lloydii</i>	Lloyd's native olive		V	V	7/7

CODES

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

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

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

Records – The first number indicates the total number of records of the taxon for the record option selected (i.e. All, Confirmed or Specimens).

This number is output as 99999 if it equals or exceeds this value. The second number located after the / indicates the number of specimen records for the taxon.

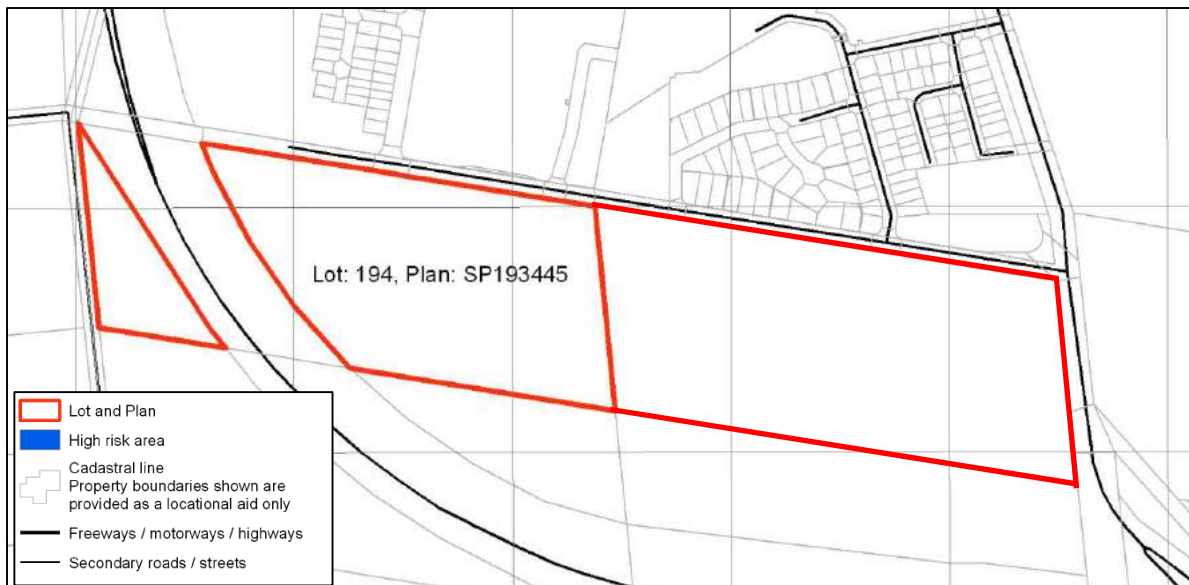
This number is output as 999 if it equals or exceeds this value.



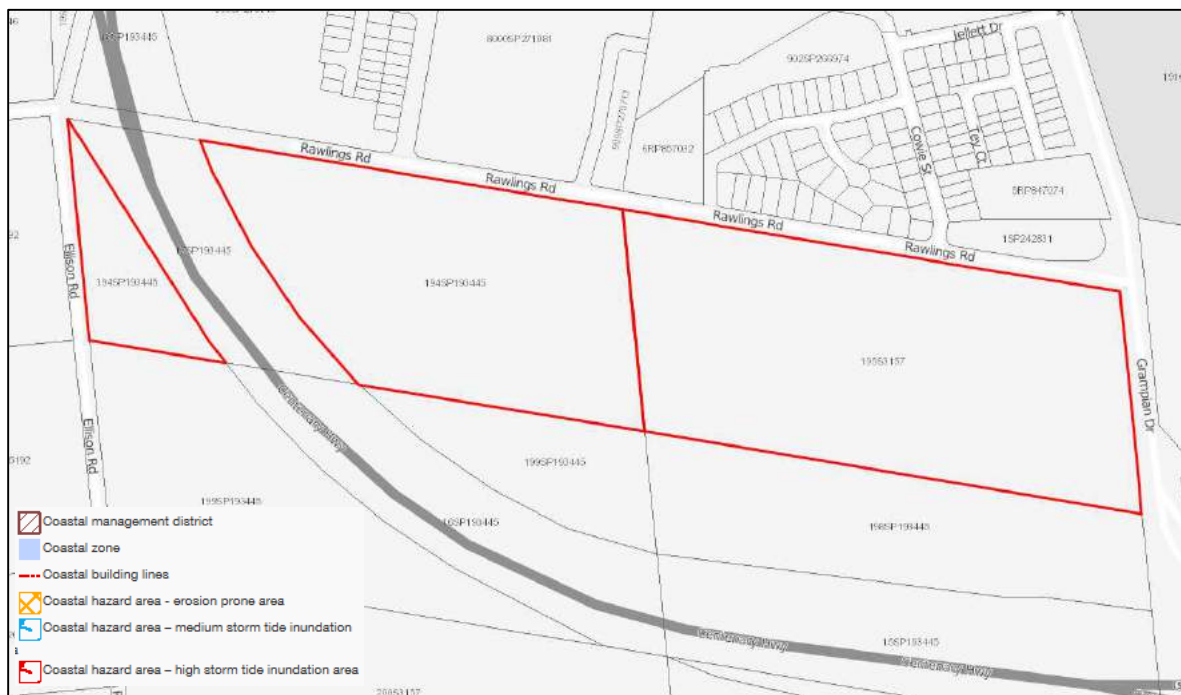
Appendix D

Environmental Searches

Map 1 - NCA Protected Plants Survey Trigger Map



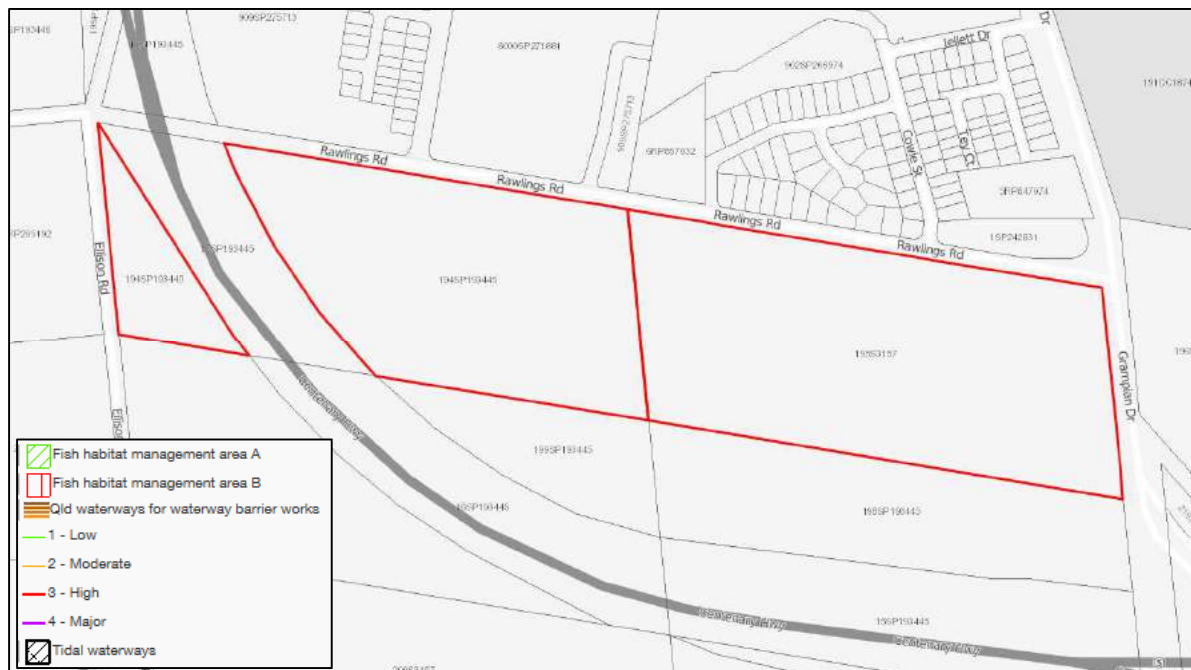
Map 2 - SARA Coastal Protection Mapping



Map 3 - SARA Wetland Protection Mapping

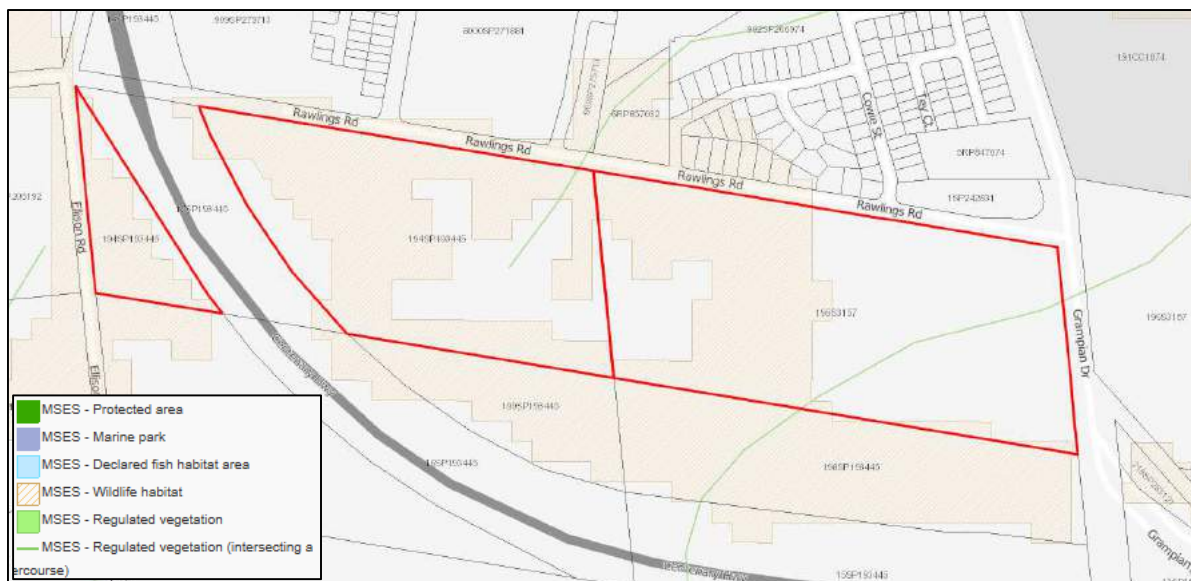


Map 4 - SARA Fish Habitat Mapping

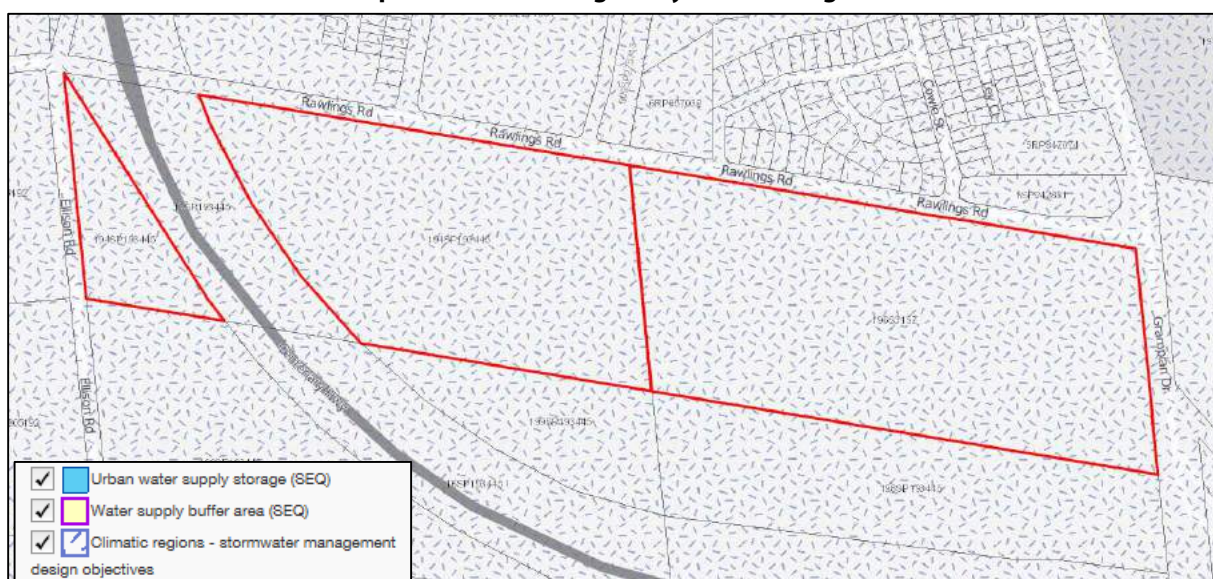




Map 5 - State Planning Policy Biodiversity (MSES)

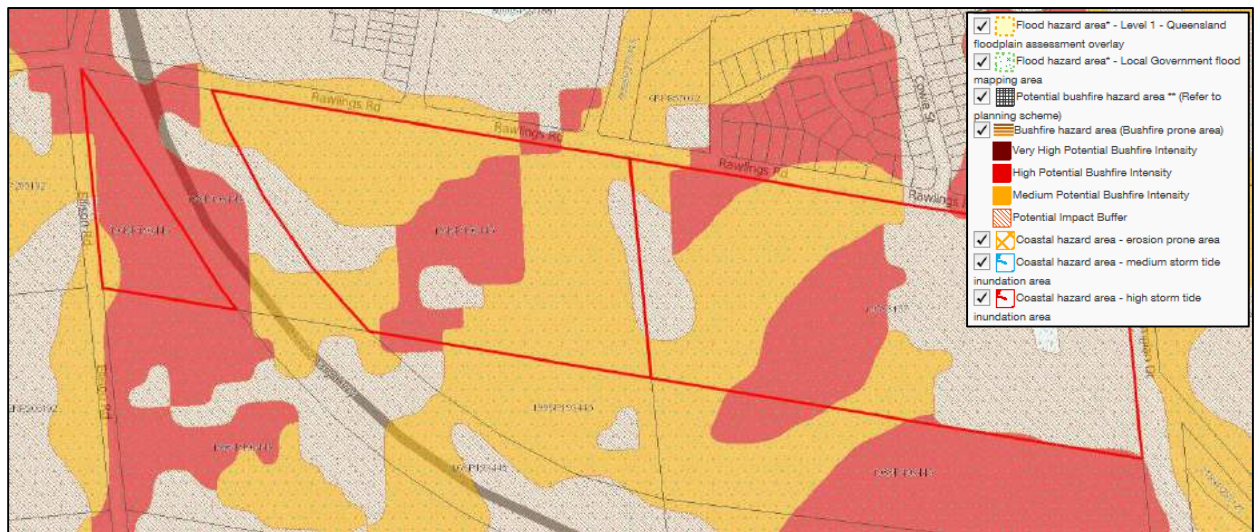


Map 6 - State Planning Policy Climatic Regions

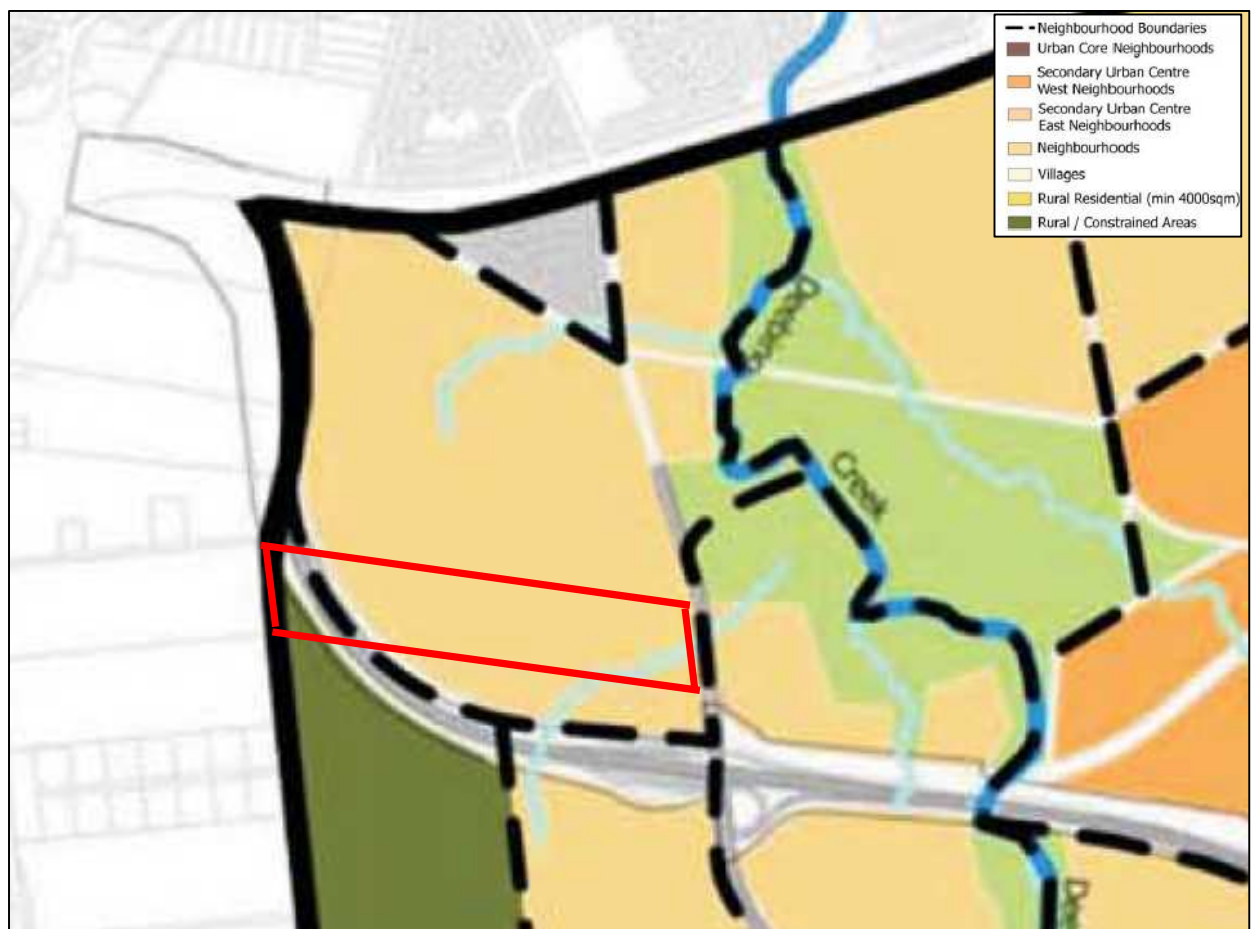




Map 7 - State Planning Policy Natural Hazards



Map 8 - Ripley Valley Master Plan





Appendix E

Likelihood of Occurrence Schedule for EPBC Act Listed Species

HABITAT ASSESSMENT FOR LISTED EPBC SPECIES (8122)				
Listed Threatened Ecological Communities				
Name	Status	Habitat Niche	Assessment	
Lowland Rainforest of Subtropical Australia	Critically Endangered	This TEC occurs mainly on basalt and alluvial soils and is characteristic of a low abundance of Eucalyptus, Melaleuca and Casuarina species. Specimens with buttress roots are most common throughout this TEC. Tree species with compound leaves are also common and leaves are relatively large (notophyll to mesophyll).	No characteristics or species representing this community were observed on or within the immediate vicinity of this site.	
Swamp Tea-tree (Melaleuca irbyana) Forest of South-east Queensland	Critically Endangered	This TEC is usually represented within the Endangered Regional Ecosystem community 12.3.3 and Regional Ecosytem12.9-10.11.	There is no RE 12.3.3 or RE 12.9-10.11 mapped on-site, and this was confirmed during site survey.	
White Box-Yellow Box-Blakely's red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Grasses representative of the native grassland include Themeda triandra (Kangaroo Grass) and Poa sieberiana (Snow Grass). The RE12.8.16 is usually representative of this TEC however is only representative with in the far western edge of the bioregion.	No characteristics or species representing this community were observed on or within the immediate vicinity of this site.	
Listed Threatened Species				
Scientific Name	Common Name	Status	Habitat Niche and Likelihood	Field Results
Birds				
Anthochaera phrygia	Regent Honeyeater	Endangered	<p>Widespread but sparsely scattered over south east Australia occasionally visits south east Queensland. Range and numbers have contracted significantly since 1940s. Habitat preference for eucalypt woodlands particularly with box and ironbark species, especially in moister, more fertile sites along creeks, valleys and lower foothills. Sometimes found in river she oaks Casuarina cunninghamiana , particularly where mistletoe is present. Although the site contains areas of suitable habitat there are no recent reliable records from the vicinity. Its occurrence therefore is unlikely and the higher value habitats are being retained. No significant impact.</p> <p>Species is unlikely to occur on-site.</p>	Not observed.
Botaurus poiciloptilus	Australasian Bittern	Endangered	<p>The Australasian Bittern occurs in terrestrial wetlands and, rarely, estuarine habitats, mainly in the temperate southeast and southwest. It favours 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 platforms or mats of vegetation over deep water. It favours permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and / or reeds or cutting grass growing over muddy or peaty substrate. The Australasian Bittern occurs in the far South-East of Queensland; it has been reported North to Baralaba and West to Wyandra, although in most years it is probably confined to a few coastal swamps. It is rarely recorded in Queensland, and possibly survives only in protected areas such as the Cooloola and Fraser regions.</p> <p>Unlikely to occur as this species is restricted to protected un-degraded wetlands, with no habitat recorded on-site.</p>	Not observed.
Dasyornis brachypterus	Eastern Bristlebird	Endangered	<p>The Eastern Bristlebird inhabits low dense vegetation in a broad range of habitat types including sedgeland, heathland, swampland, shrubland, sclerophyll forest and woodland, and rainforest. It occurs near the coast, on tablelands and in ranges. The Eastern Bristlebird is found in habitats with a variety of species compositions, but is defined by a similar structure of low, dense, ground or understorey vegetation.</p> <p>The site is not part of a tableland or range near the coast and it harbours relatively sparse understorey vegetation so this species is not expected to occur.</p>	Not observed.
Erythrotriorchis radiatus	Red Goshawk	Vulnerable	<p>No confirmed local records of this uncommon species, which has been declining in its southern range for a number of years. A wide ranging and highly mobile species generally observed over eucalypt habitats. Habitat is undisturbed forest or woodland with mosaic of mixed vegetation, especially patches that include areas of river, billabong or swamp wetland with large bird populations. Due to the scarcity of this species and lack of local records its occurrence is highly unlikely. The proposed actions will result in a minor loss of habitat for the species and its prey, however this habitat occurs in a highly disturbed and altered landscape. No notable impact will result.</p> <p>Species is unlikely to occur on-site.</p>	Not observed.
Geophaps scripta scripta	Squatter Pigeon (southern)	Vulnerable	<p>This species inhabits open grasslands and woodlands typically with a native understorey although may occur in artificial pasture. No confirmed local records. The species is now very rarely observed in southern Queensland. Not expected onsite and no direct impact from proposed actions.</p>	Not observed.

Scientific Name	Common Name	Status	Habitat Niche and Likelihood	Field Results
			Species is unlikely to occur on-site.	
<i>Grantiella picta</i>	Painted Honeyeater	Vulnerable	<p>The Painted Honeyeater is a specialist feeder on the fruits of mistletoes growing on woodlands eucalypt species. This species inhabits dry, open forests and woodlands (box, ironbark, yellowgum, melaleuca, casuarina, callitris, acacia). Studies have been conducted which suggest that habitat areas which have undergone less fragmentation and land clearing may see a greater number of Painted Honeyeaters present. They have also been found to be more abundant in locations where there are a large number of trees present and a high percentage of canopy cover.</p> <p>Species is unlikely to occur on-site due to degraded habitat.</p>	Not observed.
<i>Lathamus discolor</i>	Swift Parrot	Endangered	<p>Swift Parrots breed in Tasmania during spring to early summer. During autumn and winter the species migrates to the mainland where it follows a nomadic existence linked to the availability and timing of flowering of trees in various locations. While the species is very uncommon in south-east Queensland, its occurrence cannot be completely discounted. There are suitable winter flowering species present on the site which may attract birds during flowering (e.g. <i>E. tereticornis</i>), however the majority of these are immature. The remainder of the site is dominated by <i>Corymbia citriodora</i> and the clearing of this site is not anticipated to result in any significant loss of resource for this species.</p> <p>Species is a potential rare visitor to flowering eucalypts.</p>	Not observed.
<i>Poephila cincta cincta</i>	Black-throated Finch	Endangered	<p>The Black-throated Finch (southern) occurs mainly in grassy, open woodlands and forests, typically dominated by <i>Eucalyptus</i> , <i>Corymbia</i> and <i>Melaleuca</i> , and occasionally in tussock grasslands or other habitats (for example freshwater wetlands), often along or near watercourses, or in the vicinity of water. It occurs at two general locations: in the Townsville region, where it is considered to be locally common at a few sites around Townsville and Charters Towers; and at scattered sites in central-eastern Queensland (between Aramac and Great Basalt Wall National Park). It has been absent from Brisbane and its surrounds since the 1930s.</p> <p>Not expected to occur on-site due to limited records and its absence now from its southern distribution.</p>	Not observed.
<i>Rostratula australis</i>	Australian Painted Snipe	Vulnerable	<p>The Australian Painted Snipe is usually found in shallow inland wetlands, either freshwater or brackish, that are either permanently or temporarily filled. The species has a scattered distribution throughout many parts of Australia, with a single record from Tasmania.</p> <p>No suitable riparian habitat or wetlands occur on-site and is not expected to occur.</p>	Not observed.
<i>Turnix melanogaster</i>	Black-breasted Button-quail	Vulnerable	<p>Typical habitat occurs in dry rainforest and vegetation immediately adjacent to rainforest. However the species has also been recorded in a variety of low coastal heathlands around Fraser Island and nearby mainland. Deep leaf litter in which the species can forage appears to be particularly favoured. Habitats on the site are disturbed due to prior disturbances, weed invasion and prior pastoral/grazing activities. Little to no suitable habitat for this species occurs and where potential habitat is present is not subject to the proposed actions.</p> <p>Species is unlikely to occur on-site due to a history of rural uses as well as pest animal species such as feral dog and cat recordings within the local area.</p>	Not observed.
Mammals				
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat, Large Pied Bat	Vulnerable	<p>No confirmed local records of this uncommon species. In South East Queensland the species has primarily been recorded from higher altitude moist tall open forest adjacent to rainforest. Little is known about the roosting requirements of this species but natural roosts may depend heavily on sandstone outcrops. Not expected to occur and no impact expected.</p> <p>Species is unlikely to occur.</p>	Not observed.
<i>Dasyurus hallucatus</i>	Northern Quoll	Endangered	<p>The Northern Quoll is known to occur as far south as Gracemere and Mr Morgan, south of Rockhampton and as far north as Cooktown. The species occupies rocky areas, eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrubland, grassland and desert. This species requires rocky outcrops for dens and relatively large patches of intact bushland habitat.</p>	Not observed.

Scientific Name	Common Name	Status	Habitat Niche and Likelihood	Field Results
			Species is unlikely to occur due to a lack of records as well as a lack of rocky outcrops and possible den sites.	
<i>Dasyurus maculatus maculatus</i> (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)	Endangered	Confirmed records in the local and regional landscape have been associated with areas containing rock outcrops with dens as well as larger areas of intact buhmland habitat. Although the site contains exposed rock, no significant rocky outcrops or den areas have been recorded. Given the lack of surrounding connected suitable habitat the potential for this species to occur is extremely low. This species is highly unlikely to occur on-site.	Not observed.
<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	Vulnerable	The Brush-tailed Rock-wallaby prefers rocky habitats such as boulder piles, rocky outcrops, steep rocky slopes, cliffs and isolated rock stacks. It can also be found utilising tree limbs. The habitat of the rock-wallaby is generally associated with arboreal cover like fig trees which provides food and shelter. Not likely to occur due to lack of suitable habitat.	Not observed.
<i>Phascolarctos cinereus</i> (combined populations of Qld, NSW and the ACT)	Koala (combined populations of QLD, NSW and the ACT)	Vulnerable	They are found in a range of habitats, from coastal islands and tall Eucalypt forests to low woodlands inland. The species is known from the broader area and as part of this survey evidence was collected showing low to extremely low usage. Evidence of this species has been recorded across the site.	Evidence Observed.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vulnerable	Species generally roosts in camps in trees adjacent to larger permanent watercourses than those which occur onsite. There are no camps currently active in the vicinity. However this species is likely to forage on site when Eucalyptus and Melaleuca species are flowering and particularly during winter when these provide important resources for this species. It is a common species in SEQ and there is unlikely to be any notable loss of resources or significant impact on the species long term viability with the retention of all mature remnant communities. Likely to occur on-site when food trees are in flower.	Not observed.
Plants				
<i>Arthraxon hispidus</i>	Hairy Joint Grass	Vulnerable	Hairy Joint Grass has been recorded from scattered locations throughout Queensland, with most occurrences recorded from Noosa southwards. It is found in or on the edges of rainforest and in wet eucalypt forest, often near creeks or swamps. It has also been recorded in woodland and around freshwater springs on coastal foreshore dunes, in shaded small gullies, on creek banks, and on sandy alluvium in creek beds in open forest. Unlikely to occur on-site due to lack of suitable habitat.	Not observed.
<i>Bosistoa transversa</i>	Three-leaved Bosistoa	Vulnerable	The Three-leaved Bosistoa is conserved within Mt Warning National Park, Numinbah Nature Reserve, Limpinwood Nature Reserve and Whian Whian State Forest. While population information is unavailable, it is thought to be common in its range. It generally grows in wet sclerophyll forest, dry sclerophyll forest and rainforest up to 300 metres in altitude. It is commonly associated with <i>Argyrodendron trifoliolatum</i> , <i>Syzygium hodgkinsoniae</i> , <i>Endiandra pubens</i> , <i>Dendrocnide photinophylla</i> , <i>Acmena ingens</i> , <i>Diploglottis australis</i> and <i>Diospyros mabacea</i> . Unlikely to occur on-site due to lack of suitable habitat.	Not observed.
<i>Notelaea ipsviciensis</i>	Cooneana Olive	Critically endangered	This species is known to occur in three areas around Ipswich and has a total extent of occurrence of less than two square kilometres. The Cooneana Olive is an understory plant and occurs in open woodlands such as eucalypt-dominant sclerophyll communities situated on sandstone based soils. Although early habitat characteristics which might support this species are located on-site the vegetation is too immature and degraded to support this species.	Not observed.
<i>Notelaea lloydii</i>	Lloyd's Olive	Vulnerable	Lloyd's Olive is endemic to South East Queensland species and occurs between Mt Brisbane (near Somerset Dam), Beaudesert and Laidley. It commonly occurs in open eucalypt forest, often near the margin of vine thickets, vine forests and softwood scrub at altitudes between 80 and 480 metres. It is found in areas with steep slopes or drainage features and prefers shallow and rocky soils derived from sandstone or acid volcanic rock. The species is generally found within remnant vegetation. Due to a history of rural type disturbances this species is very unlikely to occur.	Not observed.

Scientific Name	Common Name	Status	Habitat Niche and Likelihood	Field Results
<i>Phebalium distans</i>	Mt Berryman Phebalium	Critically endangered	<p>Mt Berryman Phebalium is found in semi-evergreen vine thicket on red volcanic soils, or in communities adjacent to this vegetation type. Geology of the area in which this species occurs is deeply weathered basalt with undulating to hilly terrain. Soils range from red-brown earths to brown clays (derived from siltstone and mudstones), and lithosols to shallow, gravelly krasnozems (very dark brown loam), derived from the Main Range Volcanics of the Tertiary period. Vegetation associations in which Mt Berryman Phebalium occur include microphyll to notophyll vine forest with or without <i>Araucaria cunninghamii</i> and low microphyll vine forest and semi-evergreen vine thicket with or without <i>Araucaria cunninghamii</i> which can be divided further into regional ecosystems depending on substrate, geography and associated vegetation species.</p> <p>Unlikely to occur on-site due to lack of suitable habitat.</p>	Not observed.
<i>Thesium australe</i>	Austral Toadflax, Toadflax	Vulnerable	<p>Austral Toadflax occurs in grassland on coastal headlands or grassland and grassy woodland away form the coast. It is often found in association with <i>Themeda triandra</i> (Kangaroo Grass). This species is a root parasite that takes water and some nutrient from other plants. It is often found in damp sites. Examples of associated vegetation includes open woodland with <i>Eucalyptus tereticornis</i> on skeletal soils, on heavy alluvium soil in grassy <i>Eucalyptus populnea</i> woodland; and grassland dominated by <i>Themeda triandra</i> and <i>Heteropogon contortus</i> on basaltic rocky soils.</p> <p>Unlikely to occur on-site due to lack of suitable habitat and disturbances from a history of cattle use and weed invasion.</p>	Not observed.
Reptiles				
<i>Delma torquata</i>	Collared Delma	Vulnerable	<p>In general, the species occurs on rocky hillsides on basalt and lateritic soils supporting open eucalypt and <i>Acacia</i> woodland with a sparse understorey of shrubs and tussocks or semi-evergreen vine thicket.</p> <p>The site has a history of land clearing and regular grazing, resulting in a lack of understory and shrub layer over most of the site. Additionally, there is a lack of leaf litter and debris across the site. As habitat is limited throughout the site, it is unlikely that this species will occur.</p>	Not observed.
<i>Furina dunmalli</i>	Dunmall's Snake	Vulnerable	<p>Dunmall's Snake has been found in a broad range of habitats, including forests and woodlands on black alluvial cracking clay and clay loams dominated by Brigalow other Wattles, native Cypress or Bull-oak, and various Blue Spotted Gum, Ironbark, White Cypress Pine and Bulloak open forest and woodland associations on sandstone derived soils. Dunmall's Snake occurs primarily in the Brigalow Belt region in the South-eastern interior of Queensland. Records indicate sites at elevations between 200–500 m above sea level. The snake is very rare or secretive with limited records existing. It has been recorded at Archokoora, Oakey, Miles, Glenmorgan, Wallaville, Gladstone, Lake Broadwater, Mount Archer, Exhibition Range National Park, roadside reserves between Inglewood and Texas, Rosedale, Yeppoon and Lake Broadwater Conservation Park.</p> <p>Not expected to occur on-site.</p>	Not observed.
Listed Migratory Species				
Migratory Marine Birds				
<i>Apus pacificus</i>	Fork-tailed Swift	Migratory Marine Bird Listed Marine Species	<p>This species is sometimes found over cities and nearby forests.</p> <p>A marine species, unlikely to occur on-site.</p>	Not observed.
Migratory Terrestrial Species				
<i>Cuculus optatus</i>	Oriental Cuckoo, Horsfield's Cuckoo	Migratory Terrestrial Species	<p>Cuculus optatus is a solitary and rather elusive species. It is a brood parasite as the female lays her eggs in the nests of other bird species, particularly Phylloscopus warbler species. It mainly inhabits forests, occurring in mixed, deciduous and coniferous forests.</p> <p>Unlikely to occur due to a lack of suitable habitat.</p>	Not observed.
<i>Hirundapus caudacutus</i>	White throated Needletail	Migratory Terrestrial Species Listed Marine Species	<p>This species is known to inhabit airspace over forests, woodlands, plains and riparian areas.</p> <p>Possible flyover species.</p>	Not observed.
<i>Merops ornatus</i>	Rainbow Bee-eater	Migratory Terrestrial Species Listed Marine Species	<p>This species occurs in areas containing sandy, loamy soil, including woodlands, mangroves, rainforests, golf courses and sand dunes.</p> <p>This species was observed foraging on the site.</p>	Observed.

Scientific Name	Common Name	Status	Habitat Niche and Likelihood	Field Results
<i>Monarcha melanopsis</i>	Black faced Monarch	Migratory Terrestrial Species Listed Marine Species	This species is known to inhabit rainforests and eucalypt woodlands with a dense mid-storey. Unlikely to occur due a lack of suitable habitat.	Not observed.
<i>Monarcha trivirgatus</i>	Spectacled Monarch	Migratory Terrestrial Species Listed Marine Species	This species is known to inhabit the understorey of mountain and lowland rainforests and waterside vegetation. Unlikely to occur due to a lack of suitable habitat.	Not observed.
<i>Montacilla flava</i>	Yellow Wagtail	Migratory Terrestrial Species Listed Marine Species	The Yellow Wagtail occurs in open country near swamps, salt marshes, sewage ponds, grassed surrounds to airfields, bare ground and occasionally on drier inland plains. It is a rare but regular visitor around the Australian coast. Unlikely to occur due to a lack of suitable habitat.	Not observed.
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	Migratory Terrestrial Species Listed Marine Species	This species prefers densely vegetated areas and may also forage in wetland vegetation and trees in open country during migration. Unlikely to occur due to a lack of suitable habitat.	Not observed.
<i>Rhipidura rufifrons</i>	Rufous Fantail	Migratory Terrestrial Species Listed Marine Species	This species inhabits rainforests, dense wet eucalypt and monsoon forest, paperbark and mangrove swamp and riverside vegetation. This species utilises open country including buildings, parks and gardens during migrations. Unlikely to occur due to a lack of suitable habitat, however possible throughout migratory periods.	Not observed.
Migratory Wetland Species				
<i>Ardea ibis</i>	Cattle Egret	Migratory Wetlands Species Listed Marine Species	This species is found in stock paddocks, grasslands, wetlands and drains. Suitable habitat for this species occurs on the site. This species has been recorded on the site. Observed on-site and within the local area .	Observed.
<i>Ardea alba</i>	Great Egret	Migratory Wetlands Species Listed Marine Species	This species prefers shallows of rivers, estuaries, tidal and freshwater wetlands, sewage ponds, dams and irrigation areas. Suitable habitat does not occur on the site. Unlikely to occur due to a lack of suitable habitat.	Not observed.
<i>Gallinago hardwickii</i>	Latham’s Snipe	Migratory Wetlands Species Listed Marine Species	This species prefers soft wet ground and marshy areas. No suitable habitat is present on this site. Unlikely to occur due to a lack of suitable habitat.	Not observed.
<i>Pandion haliaetus</i>	Osprey	Migratory Wetlands Species Listed Marine Species	Eastern Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical wetlands of tropical and temperate Australia and offshore islands. They are mostly found in coastal areas but occasionally travel inland along major rivers, particularly in northern Australia. They require extensive areas of open fresh, brackish or saline water for foraging. No nests observed on-site, could occur as fly over .	Not observed.



Appendix F

GPS Tree Plot Schedule

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
1	<i>Corymbia citriodora</i>	Spotted Gum	520		520	20.0	7.0	6.2	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
2	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	470		470	20.0	9.0	5.6	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
3	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	420		420	20.0	9.0	5.0	2.3	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
4	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	605		605	19.0	9.0	7.3	2.7	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
5	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	340		340	18.0	8.0	4.1	2.1	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
6	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	410		410	17.0	8.0	4.9	2.3	Regular	-	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	
7	<i>Corymbia citriodora</i>	Spotted Gum	380		380	22.0	9.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
8	<i>Corymbia citriodora</i>	Spotted Gum	370	175	409	22.0	6.0	4.9	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
9	<i>Eucalyptus tereticornis</i>	Forest Red Gum	400		400	18.0	5.0	4.8	2.3	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
10	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	390		390	23.0	7.0	4.7	2.2	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
11	<i>Eucalyptus tereticornis</i>	Forest Red Gum	405		405	21.0	5.0	4.9	2.3	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
12	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	375		375	21.0	9.0	4.5	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	Small	-	-	
13	<i>Corymbia citriodora</i>	Spotted Gum	360		360	23.0	6.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
14	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	500		500	24.0	9.0	6.0	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
15	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	19.0	7.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	Minor	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
16	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	370		370	22.0	8.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
17	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	530		530	23.0	10.0	6.4	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
18	<i>Eucalyptus tereticornis</i>	Forest Red Gum	600		600	23.0	12.0	7.2	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
19	<i>Eucalyptus tereticornis</i>	Forest Red Gum	420		420	19.0	8.0	5.0	2.3	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
20	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	385		385	17.0	9.0	4.6	2.2	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	Small	-	-	
21	<i>Eucalyptus tereticornis</i>	Forest Red Gum	540		540	22.0	9.0	6.5	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
22	<i>Eucalyptus tereticornis</i>	Forest Red Gum	515		515	22.0	9.0	6.2	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
23	<i>Eucalyptus tereticornis</i>	Forest Red Gum	390		390	19.0	8.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
24	<i>Corymbia intermedia</i>	Pink Bloodwood	520	320	611	16.0	8.0	7.3	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
25	<i>Corymbia citriodora</i>	Spotted Gum	440		440	25.0	6.0	5.3	2.3	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
26	<i>Corymbia citriodora</i>	Spotted Gum	535		535	23.0	7.0	6.4	2.5	Regular	-	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
27	<i>Corymbia citriodora</i>	Spotted Gum	545		545	22.0	11.0	6.5	2.6	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	Small	-	-	
28	<i>Corymbia citriodora</i>	Spotted Gum	490		490	24.0	7.0	5.9	2.5	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
29	<i>Corymbia citriodora</i>	Spotted Gum	640		640	26.0	12.0	7.7	2.7	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	Trunk Dmg.	-	Typical	-	-	Small	-	Termites	-	
30	<i>Corymbia citriodora</i>	Spotted Gum	385		385	26.0	5.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
31	<i>Corymbia citriodora</i>	Spotted Gum	580		580	26.0	9.0	7.0	2.6	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
32	<i>Corymbia citriodora</i>	Spotted Gum	385		385	23.0	10.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
33	<i>Corymbia citriodora</i>	Spotted Gum	370		370	22.0	9.0	4.4	2.2	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
34	<i>Corymbia citriodora</i>	Spotted Gum	390		390	27.0	9.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
35	<i>Corymbia citriodora</i>	Spotted Gum	390		390	24.0	9.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
36	<i>Corymbia citriodora</i>	Spotted Gum	390	100	403	26.0	7.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
37	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	580		580	27.0	12.0	7.0	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	Small	-	-	-	
38	<i>Corymbia citriodora</i>	Spotted Gum	310		310	22.0	4.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
39	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	335		335	22.0	7.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
40	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	400		400	23.0	9.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
41	<i>Eucalyptus tereticornis</i>	Forest Red Gum	415		415	17.0	7.0	5.0	2.3	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
42	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	365		365	23.0	9.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
43	<i>Corymbia citriodora</i>	Spotted Gum	350		350	24.0	7.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
44	<i>Corymbia citriodora</i>	Spotted Gum	340		340	25.0	8.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
45	<i>Corymbia citriodora</i>	Spotted Gum	320		320	24.0	7.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
46	<i>Corymbia citriodora</i>	Spotted Gum	330		330	26.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
47	<i>Corymbia citriodora</i>	Spotted Gum	350	140	377	25.0	8.0	4.5	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
48	<i>Corymbia citriodora</i>	Spotted Gum	360		360	25.0	10.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	Small	-	-	
49	<i>Corymbia citriodora</i>	Spotted Gum	335		335	21.0	7.0	4.0	2.1	One-sided	-	-	-	-	-	-	Typical	Minor	-	-	-	Typical	-	-	-	-	-	-	
50	<i>Corymbia citriodora</i>	Spotted Gum	520		520	27.0	11.0	6.2	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
51	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	650		650	28.0	14.0	7.8	2.8	Regular	-	-	Thinning	Die-back	Epicormic	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
52	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	520		520	24.0	7.0	6.2	2.5	One-sided	-	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	Small	-	-	wasp nest in trunk
53	DEAD/STAG		510		510	23.0	10.0	6.1	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
54	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	290	130	318	21.0	7.0	3.8	2.0	Regular	-	-	Thinning	Die-back	Epicormic	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
55	<i>Eucalyptus tereticornis</i>	Forest Red Gum	375		375	20.0	7.0	4.5	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
56	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	310		310	22.0	7.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
57	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	20.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
58	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	330		330	21.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
59	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	390		390	18.0	9.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
60	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	390		390	24.0	10.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
61	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	335		335	21.0	7.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
62	<i>Corymbia citriodora</i>	Spotted Gum	450		450	25.0	11.0	5.4	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
63	<i>Corymbia citriodora</i>	Spotted Gum	525		525	26.0	11.0	6.3	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
64	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	395		395	24.0	9.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
65	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	525		525	26.0	12.0	6.3	2.5	Regular	-	-	Thinning	Die-back	Epicormic	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
66	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	610	400	729	28.0	12.0	8.8	2.9	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
67	<i>Corymbia citriodora</i>	Spotted Gum	330		330	21.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
68	<i>Corymbia citriodora</i>	Spotted Gum	350		350	23.0	8.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
69	<i>Corymbia citriodora</i>	Spotted Gum	385		385	23.0	7.0	4.6	2.2	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
70	<i>Corymbia citriodora</i>	Spotted Gum	305		305	23.0	7.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
71	<i>Corymbia citriodora</i>	Spotted Gum	315		315	23.0	7.0	3.8	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
72	<i>Corymbia citriodora</i>	Spotted Gum	300		300	22.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
73	<i>Corymbia citriodora</i>	Spotted Gum	305		305	22.0	8.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
74	<i>Corymbia citriodora</i>	Spotted Gum	315		315	23.0	8.0	3.8	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
75	<i>Corymbia citriodora</i>	Spotted Gum	355		355	23.0	7.0	4.3	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
76	<i>Corymbia citriodora</i>	Spotted Gum	360		360	23.0	7.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
77	<i>Corymbia citriodora</i>	Spotted Gum	440		440	27.0	11.0	5.3	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
78	<i>Corymbia citriodora</i>	Spotted Gum	300		300	20.0	6.0	3.6	2.0	One-sided	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
79	<i>Corymbia citriodora</i>	Spotted Gum	355		355	24.0	8.0	4.3	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
80	<i>Corymbia citriodora</i>	Spotted Gum	335		335	26.0	7.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
81	<i>Corymbia citriodora</i>	Spotted Gum	390	160	422	26.0	9.0	5.1	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
82	<i>Corymbia citriodora</i>	Spotted Gum	310		310	26.0	6.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
83	<i>Corymbia citriodora</i>	Spotted Gum	395		395	24.0	9.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
84	<i>Corymbia citriodora</i>	Spotted Gum	390		390	25.0	9.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
85	<i>Corymbia citriodora</i>	Spotted Gum	340		340	27.0	7.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
86	<i>Corymbia citriodora</i>	Spotted Gum	300		300	26.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
87	<i>Corymbia citriodora</i>	Spotted Gum	305		305	27.0	6.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
88	<i>Corymbia citriodora</i>	Spotted Gum	330		330	24.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
89	<i>Corymbia citriodora</i>	Spotted Gum	330		330	26.0	6.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
90	<i>Corymbia citriodora</i>	Spotted Gum	345		345	27.0	8.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
91	<i>Corymbia citriodora</i>	Spotted Gum	335		335	27.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
92	<i>Corymbia citriodora</i>	Spotted Gum	340		340	27.0	8.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
93	<i>Corymbia citriodora</i>	Spotted Gum	315		315	26.0	5.0	3.8	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
94	<i>Corymbia citriodora</i>	Spotted Gum	300		300	26.0	8.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
95	<i>Corymbia citriodora</i>	Spotted Gum	340		340	26.0	7.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
96	<i>Corymbia citriodora</i>	Spotted Gum	620		620	28.0	12.0	7.4	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
97	<i>Corymbia intermedia</i>	Pink Bloodwood	365		365	21.0	11.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
98	<i>Corymbia citriodora</i>	Spotted Gum	310		310	25.0	9.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
99	<i>Corymbia citriodora</i>	Spotted Gum	325		325	24.0	8.0	3.9	2.1	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
100	<i>Eucalyptus tereticornis</i>	Forest Red Gum	465		465	17.0	9.0	5.6	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
101	<i>Corymbia citriodora</i>	Spotted Gum	350		350	26.0	9.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
102	<i>Corymbia citriodora</i>	Spotted Gum	560		560	28.0	12.0	6.7	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
103	<i>Corymbia citriodora</i>	Spotted Gum	310		310	23.0	6.0	3.7	2.0	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
104	<i>Eucalyptus tereticornis</i>	Forest Red Gum	360		360	21.0	7.0	4.3	2.2	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
105	<i>Corymbia citriodora</i>	Spotted Gum	420		420	25.0	9.0	5.0	2.3	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
106	<i>Corymbia citriodora</i>	Spotted Gum	380		380	25.0	9.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
107	<i>Corymbia tessellaris</i>	Moreton Bay Ash	300		300	16.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
108	<i>Corymbia citriodora</i>	Spotted Gum	300	100	316	26.0	7.0	3.8	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	

Tree ID	Specimen Details									Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
109	<i>Eucalyptus tereticornis</i>	Forest Red Gum	330		330	19.0	7.0	4.0	2.1	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
110	<i>Corymbia citriodora</i>	Spotted Gum	415		415	26.0	11.0	5.0	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
111	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320		320	23.0	5.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
112	<i>Corymbia citriodora</i>	Spotted Gum	440		440	25.0	9.0	5.3	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
113	<i>Corymbia citriodora</i>	Spotted Gum	340		340	22.0	8.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
114	<i>Corymbia citriodora</i>	Spotted Gum	380		380	27.0	6.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
115	<i>Corymbia citriodora</i>	Spotted Gum	405		405	26.0	9.0	4.9	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
116	<i>Corymbia citriodora</i>	Spotted Gum	750		750	29.0	14.0	9.0	2.9	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
117	<i>Corymbia citriodora</i>	Spotted Gum	305		305	20.0	7.0	3.7	2.0	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
118	<i>Corymbia citriodora</i>	Spotted Gum	305		305	19.0	7.0	3.7	2.0	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
119	<i>Corymbia citriodora</i>	Spotted Gum	350		350	22.0	7.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
120	<i>Corymbia citriodora</i>	Spotted Gum	320		320	24.0	7.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
121	<i>Corymbia citriodora</i>	Spotted Gum	450		450	25.0	11.0	5.4	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
122	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	390		390	22.0	7.0	4.7	2.2	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
123	<i>Eucalyptus tereticornis</i>	Forest Red Gum	330		330	21.0	7.0	4.0	2.1	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
124	<i>Eucalyptus tereticornis</i>	Forest Red Gum	320		320	18.0	6.0	3.8	2.1	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
125	<i>Corymbia citriodora</i>	Spotted Gum	370		370	25.0	7.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
126	<i>Corymbia citriodora</i>	Spotted Gum	325		325	23.0	7.0	3.9	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
127	<i>Corymbia citriodora</i>	Spotted Gum	400		400	26.0	9.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
128	<i>Corymbia citriodora</i>	Spotted Gum	330		330	23.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
129	<i>Corymbia citriodora</i>	Spotted Gum	330		330	26.0	9.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
130	<i>Eucalyptus tereticornis</i>	Forest Red Gum	335		335	21.0	8.0	4.0	2.1	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
131	<i>Corymbia intermedia</i>	Pink Bloodwood	320		320	21.0	9.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
132	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	350		350	19.0	8.0	4.2	2.1	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
133	<i>Corymbia citriodora</i>	Spotted Gum	440		440	24.0	9.0	5.3	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
134	<i>Corymbia citriodora</i>	Spotted Gum	480		480	26.0	12.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
135	<i>Corymbia citriodora</i>	Spotted Gum	405		405	26.0	11.0	4.9	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
136	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	21.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
137	<i>Eucalyptus tereticornis</i>	Forest Red Gum	360		360	22.0	8.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
138	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	510		510	32.0	11.0	6.1	2.5	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
139	DEAD/STAG		630		630	28.0	14.0	7.6	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
140	DEAD/STAG		380		380	24.0	9.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
141	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	550		550	28.0	14.0	6.6	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
142	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	665		665	26.0	14.0	8.0	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
143	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	1050		1050	27.0	14.0	12.6	3.4	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	Small	-	-	-	
144	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	595		595	28.0	14.0	7.1	2.7	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
145	<i>Corymbia citriodora</i>	Spotted Gum	440		440	27.0	12.0	5.3	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
146	<i>Corymbia citriodora</i>	Spotted Gum	335		335	25.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
147	<i>Corymbia citriodora</i>	Spotted Gum	340		340	26.0	9.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
148	<i>Corymbia citriodora</i>	Spotted Gum	340		340	23.0	9.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
149	<i>Corymbia citriodora</i>	Spotted Gum	360		360	26.0	9.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
150	<i>Corymbia citriodora</i>	Spotted Gum	380		380	25.0	8.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
151	<i>Corymbia citriodora</i>	Spotted Gum	300	180	350	24.0	7.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
152	<i>Corymbia citriodora</i>	Spotted Gum	305		305	19.0	7.0	3.7	2.0	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
153	<i>Eucalyptus tereticornis</i>	Forest Red Gum	390		390	21.0	9.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
154	<i>Corymbia citriodora</i>	Spotted Gum	440		440	26.0	9.0	5.3	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
155	<i>Corymbia citriodora</i>	Spotted Gum	360		360	27.0	11.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
156	<i>Corymbia citriodora</i>	Spotted Gum	335		335	28.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
157	<i>Corymbia citriodora</i>	Spotted Gum	300		300	27.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
158	<i>Corymbia citriodora</i>	Spotted Gum	390		390	28.0	7.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
159	<i>Corymbia citriodora</i>	Spotted Gum	360		360	28.0	9.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
160	<i>Corymbia citriodora</i>	Spotted Gum	300		300	29.0	8.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
161	<i>Corymbia citriodora</i>	Spotted Gum	410		410	26.0	9.0	4.9	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
162	<i>Corymbia citriodora</i>	Spotted Gum	430		430	26.0	9.0	5.2	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
163	<i>Corymbia citriodora</i>	Spotted Gum	320		320	24.0	7.0	3.8	2.1	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
164	<i>Corymbia citriodora</i>	Spotted Gum	630		630	29.0	14.0	7.6	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
165	<i>Corymbia citriodora</i>	Spotted Gum	380		380	27.0	12.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
166	<i>Corymbia citriodora</i>	Spotted Gum	500		500	28.0	14.0	6.0	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
167	<i>Corymbia citriodora</i>	Spotted Gum	550		550	28.0	14.0	6.6	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
168	<i>Corymbia citriodora</i>	Spotted Gum	350		350	27.0	8.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
169	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	21.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
170	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	345		345	21.0	7.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	
171	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	350		350	22.0	6.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	
172	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	365		365	23.0	9.0	4.4	2.2	Regular	-	-	Thinning	Die-back	Epicormic	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
173	<i>Eucalyptus tereticornis</i>	Forest Red Gum	360		360	19.0	8.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
174	<i>Eucalyptus tereticornis</i>	Forest Red Gum	370		370	19.0	9.0	4.4	2.2	Regular	-	-	Thinning	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
175	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	830		830	26.0	14.0	10.0	3.1	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	Trunk Dmg.	-	Typical	-	-	Large	-	-	-	
176	<i>Corymbia citriodora</i>	Spotted Gum	670		670	28.0	16.0	8.0	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
177	<i>Eucalyptus tereticornis</i>	Forest Red Gum	530		530	26.0	9.0	6.4	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
178	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	23.0	8.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
179	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	23.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
180	<i>Corymbia tessellaris</i>	Moreton Bay Ash	390		390	18.0	8.0	4.7	2.2	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
181	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	19.0	5.0	3.6	2.0	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
182	<i>Eucalyptus tereticornis</i>	Forest Red Gum	460		460	24.0	9.0	5.5	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
183	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	440		440	21.0	9.0	5.3	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
184	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	340		340	20.0	7.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
185	<i>Eucalyptus tereticornis</i>	Forest Red Gum	300		300	19.0	6.0	3.6	2.0	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
186	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320		320	19.0	6.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
187	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	330		330	21.0	6.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
188	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	22.0	6.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
189	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	310		310	21.0	7.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
190	<i>Corymbia citriodora</i>	Spotted Gum	370		370	23.0	8.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
191	<i>Corymbia citriodora</i>	Spotted Gum	660		660	24.0	14.0	7.9	2.8	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
192	<i>Corymbia citriodora</i>	Spotted Gum	300		300	22.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
193	<i>Corymbia citriodora</i>	Spotted Gum	300		300	22.0	6.0	3.6	2.0	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
194	<i>Corymbia citriodora</i>	Spotted Gum	325		325	23.0	8.0	3.9	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
195	<i>Corymbia citriodora</i>	Spotted Gum	320		320	23.0	7.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
196	<i>Corymbia citriodora</i>	Spotted Gum	300		300	23.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
197	<i>Corymbia citriodora</i>	Spotted Gum	360		360	23.0	8.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
198	<i>Corymbia citriodora</i>	Spotted Gum	300		300	25.0	5.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
199	<i>Corymbia citriodora</i>	Spotted Gum	330		330	23.0	6.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
200	<i>Corymbia citriodora</i>	Spotted Gum	520		520	26.0	12.0	6.2	2.5	Regular	-	-	-	Die-back	Epicormic	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
201	<i>Corymbia citriodora</i>	Spotted Gum	300		300	23.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
202	DEAD/STAG		310		310	18.0	6.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
203	<i>Corymbia citriodora</i>	Spotted Gum	300		300	22.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
204	<i>Corymbia citriodora</i>	Spotted Gum	410		410	24.0	9.0	4.9	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
205	<i>Corymbia citriodora</i>	Spotted Gum	300		300	23.0	5.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
206	<i>Corymbia citriodora</i>	Spotted Gum	330		330	24.0	6.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
207	<i>Corymbia citriodora</i>	Spotted Gum	400		400	27.0	9.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
208	<i>Corymbia citriodora</i>	Spotted Gum	310		310	23.0	7.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
209	<i>Corymbia tessellaris</i>	Moreton Bay Ash	270	240	361	14.0	6.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
210	<i>Corymbia citriodora</i>	Spotted Gum	335		335	26.0	7.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
211	<i>Corymbia citriodora</i>	Spotted Gum	310		310	25.0	5.0	3.7	2.0	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
212	<i>Eucalyptus tereticornis</i>	Forest Red Gum	360		360	21.0	7.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
213	<i>Corymbia citriodora</i>	Spotted Gum	620		620	27.0	14.0	7.4	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
214	<i>Corymbia citriodora</i>	Spotted Gum	410		410	25.0	9.0	4.9	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
215	<i>Corymbia citriodora</i>	Spotted Gum	320		320	26.0	8.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
216	<i>Corymbia citriodora</i>	Spotted Gum	320		320	25.0	6.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	

Tree ID	Specimen Details									Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
217	DEAD/STAG		730		730	19.0	9.0	8.8	2.9	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	Small	-	Termites	High	
218	Corymbia citriodora	Spotted Gum	400		400	26.0	8.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
219	Corymbia citriodora	Spotted Gum	435		435	27.0	12.0	5.2	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
220	Corymbia citriodora	Spotted Gum	580		580	27.0	11.0	7.0	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
221	Corymbia citriodora	Spotted Gum	320		320	22.0	7.0	3.8	2.1	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
222	Corymbia citriodora	Spotted Gum	330		330	26.0	6.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
223	Corymbia citriodora	Spotted Gum	375		375	28.0	9.0	4.5	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
224	Corymbia citriodora	Spotted Gum	570		570	22.0	12.0	6.8	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
225	Corymbia citriodora	Spotted Gum	470		470	28.0	11.0	5.6	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
226	Corymbia citriodora	Spotted Gum	380		380	23.0	8.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
227	Corymbia citriodora	Spotted Gum	710		710	27.0	12.0	8.5	2.9	Regular	-	-	-	-	-	Lopped	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
228	Eucalyptus crebra	Narrow Leaf Ironbark	810		810	30.0	14.0	9.7	3.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
229	Corymbia citriodora	Spotted Gum	495		495	29.0	14.0	5.9	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
230	Eucalyptus crebra	Narrow Leaf Ironbark	640		640	28.0	16.0	7.7	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
231	Eucalyptus crebra	Narrow Leaf Ironbark	310		310	17.0	6.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
232	Corymbia citriodora	Spotted Gum	325		325	22.0	8.0	3.9	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
233	Eucalyptus tereticornis	Forest Red Gum	345		345	24.0	8.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
234	Corymbia citriodora	Spotted Gum	360		360	23.0	9.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
235	Corymbia tessellaris	Moreton Bay Ash	320		320	18.0	11.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
236	Eucalyptus crebra	Narrow Leaf Ironbark	580		580	27.0	12.0	7.0	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
237	Eucalyptus crebra	Narrow Leaf Ironbark	340		340	19.0	7.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
238	Eucalyptus crebra	Narrow Leaf Ironbark	300	290	417	21.0	8.0	5.0	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
239	Eucalyptus crebra	Narrow Leaf Ironbark	350		350	21.0	8.0	4.2	2.1	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
240	Eucalyptus crebra	Narrow Leaf Ironbark	590		590	27.0	14.0	7.1	2.7	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
241	Corymbia intermedia	Pink Bloodwood	340		340	21.0	8.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
242	Corymbia citriodora	Spotted Gum	430		430	27.0	9.0	5.2	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
243	Corymbia tessellaris	Moreton Bay Ash	340		340	17.0	9.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
244	Eucalyptus crebra	Narrow Leaf Ironbark	325		325	22.0	7.0	3.9	2.1	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
245	Eucalyptus crebra	Narrow Leaf Ironbark	355		355	26.0	7.0	4.3	2.1	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
246	Corymbia tessellaris	Moreton Bay Ash	305		305	18.0	7.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
247	Eucalyptus crebra	Narrow Leaf Ironbark	300		300	21.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
248	Eucalyptus crebra	Narrow Leaf Ironbark	305		305	21.0	7.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
249	Eucalyptus crebra	Narrow Leaf Ironbark	300		300	18.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
250	Eucalyptus crebra	Narrow Leaf Ironbark	545		545	32.0	12.0	6.5	2.6	Regular	-	-	-	Die-back	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	
251	Eucalyptus crebra	Narrow Leaf Ironbark	565		565	32.0	14.0	6.8	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
252	Eucalyptus crebra	Narrow Leaf Ironbark	345		345	19.0	5.0	4.1	2.1	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
253	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	600		600	29.0	12.0	7.2	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
254	<i>Corymbia intermedia</i>	Pink Bloodwood	400		400	22.0	8.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
255	<i>Corymbia citriodora</i>	Spotted Gum	520		520	28.0	12.0	6.2	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
256	<i>Corymbia citriodora</i>	Spotted Gum	390		390	27.0	8.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
257	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	580		580	26.0	12.0	7.0	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
258	<i>Corymbia citriodora</i>	Spotted Gum	680		680	28.0	9.0	8.2	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
259	<i>Corymbia citriodora</i>	Spotted Gum	480		480	27.0	10.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
260	<i>Corymbia citriodora</i>	Spotted Gum	320		320	22.0	8.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
261	<i>Corymbia citriodora</i>	Spotted Gum	590		590	29.0	12.0	7.1	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
262	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	580		580	24.0	12.0	7.0	2.6	Regular	-	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
263	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	415		415	19.0	6.0	5.0	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
264	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	520		520	23.0	7.0	6.2	2.5	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
265	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	610		610	27.0	12.0	7.3	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
266	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	630		630	30.0	12.0	7.6	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
267	<i>Corymbia citriodora</i>	Spotted Gum	600		600	32.0	14.0	7.2	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
268	<i>Corymbia citriodora</i>	Spotted Gum	610		610	32.0	15.0	7.3	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
269	<i>Corymbia citriodora</i>	Spotted Gum	595		595	32.0	12.0	7.1	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
270	<i>Corymbia citriodora</i>	Spotted Gum	520		520	32.0	12.0	6.2	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
271	<i>Corymbia citriodora</i>	Spotted Gum	335		335	26.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
272	<i>Corymbia citriodora</i>	Spotted Gum	335		335	23.0	7.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
273	<i>Corymbia citriodora</i>	Spotted Gum	700		700	34.0	14.0	8.4	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
274	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	560		560	26.0	12.0	6.7	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	Small	-	-	
275	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	400		400	19.0	6.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
276	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	595		595	18.0	8.0	7.1	2.7	Regular	-	-	-	-	-	Lopped	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
277	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	420		420	18.0	6.0	5.0	2.3	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
278	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	530		530	23.0	9.0	6.4	2.5	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
279	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	770		770	32.0	14.0	9.2	3.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
280	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	680		680	24.0	9.0	8.2	2.8	Regular	-	-	-	Die-back	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
281	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	510		510	28.0	9.0	6.1	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
282	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	700		700	32.0	12.0	8.4	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
283	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	550		550	32.0	12.0	6.6	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
284	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	500		500	28.0	13.0	6.0	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
285	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	620		620	29.0	14.0	7.4	2.7	Regular	-	-	Thinning	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
286	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	590		590	29.0	14.0	7.1	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
287	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	595		595	24.0	12.0	7.1	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
288	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	640		640	29.0	13.0	7.7	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
289	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	610		610	28.0	14.0	7.3	2.7	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termites	-	
290	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	440		440	24.0	12.0	5.3	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
291	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	650		650	32.0	14.0	7.8	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
292	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	620		620	34.0	14.0	7.4	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
293	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	560		560	29.0	11.0	6.7	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
294	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	760		760	32.0	12.0	9.1	2.9	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	Native	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
295	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	680	220, 140	728	28.0	14.0	8.7	2.9	Regular	-	-	Thinning	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
296	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	610		610	32.0	12.0	7.3	2.7	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
297	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	530		530	30.0	9.0	6.4	2.5	Regular	-	-	Thinning	Die-back	Epicormic	-	Typical	-	Native	Trunk Dmg.	-	Typical	-	-	-	-	Termites	-	
298	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	630		630	35.0	12.0	7.6	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
299	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	690		690	35.0	12.0	8.3	2.8	Regular	-	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
300	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	730		730	36.0	14.0	8.8	2.9	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	Small	-	-	
301	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	18.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
302	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	17.0	5.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
303	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	18.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
304	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	700		700	36.0	14.0	8.4	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
305	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	590		590	32.0	12.0	7.1	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
306	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	820		820	34.0	14.0	9.8	3.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
307	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	370		370	26.0	12.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
308	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	530		530	24.0	9.0	6.4	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
309	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	340		340	21.0	8.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
310	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320		320	17.0	8.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
311	<i>Corymbia citriodora</i>	Spotted Gum	420		420	32.0	9.0	5.0	2.3	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
312	<i>Eucalyptus tereticornis</i>	Forest Red Gum	320		320	18.0	6.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
313	<i>Eucalyptus tereticornis</i>	Forest Red Gum	430		430	26.0	11.0	5.2	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
314	<i>Corymbia citriodora</i>	Spotted Gum	360		360	32.0	8.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
315	<i>Corymbia citriodora</i>	Spotted Gum	330		330	32.0	7.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
316	<i>Corymbia citriodora</i>	Spotted Gum	370		370	26.0	9.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
317	<i>Corymbia citriodora</i>	Spotted Gum	420		420	32.0	9.0	5.0	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
318	<i>Corymbia citriodora</i>	Spotted Gum	380		380	32.0	9.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
319	<i>Corymbia citriodora</i>	Spotted Gum	300		300	28.0	6.0	3.6	2.0	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
320	<i>Corymbia citriodora</i>	Spotted Gum	300		300	32.0	8.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
321	<i>Corymbia citriodora</i>	Spotted Gum	360		360	32.0	9.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
322	<i>Corymbia citriodora</i>	Spotted Gum	320		320	28.0	8.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
323	<i>Corymbia citriodora</i>	Spotted Gum	310		310	29.0	8.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
324	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	23.0	7.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
325	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	21.0	8.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
326	<i>Corymbia citriodora</i>	Spotted Gum	380		380	27.0	9.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	Small	-	-	
327	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	430		430	23.0	8.0	5.2	2.3	Regular	-	-	Thinning	Die-back	-	Lopped	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
328	<i>Corymbia citriodora</i>	Spotted Gum	340		340	27.0	8.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
329	<i>Corymbia citriodora</i>	Spotted Gum	360		360	27.0	12.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
330	<i>Corymbia citriodora</i>	Spotted Gum	300		300	26.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
331	<i>Corymbia citriodora</i>	Spotted Gum	300		300	28.0	8.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
332	<i>Corymbia citriodora</i>	Spotted Gum	300		300	27.0	8.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
333	<i>Corymbia citriodora</i>	Spotted Gum	300		300	28.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
334	<i>Corymbia citriodora</i>	Spotted Gum	320		320	27.0	7.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
335	<i>Corymbia citriodora</i>	Spotted Gum	1000		1000	35.0	14.0	12.0	3.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
336	<i>Corymbia citriodora</i>	Spotted Gum	330		330	28.0	9.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
337	<i>Corymbia citriodora</i>	Spotted Gum	380		380	30.0	9.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
338	<i>Corymbia citriodora</i>	Spotted Gum	350		350	29.0	9.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
339	<i>Corymbia citriodora</i>	Spotted Gum	300		300	27.0	8.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
340	<i>Corymbia citriodora</i>	Spotted Gum	380		380	28.0	8.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
341	<i>Corymbia citriodora</i>	Spotted Gum	410		410	28.0	9.0	4.9	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
342	<i>Corymbia citriodora</i>	Spotted Gum	300		300	24.0	8.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
343	<i>Corymbia citriodora</i>	Spotted Gum	330		330	25.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
344	<i>Corymbia citriodora</i>	Spotted Gum	320		320	27.0	7.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
345	<i>Corymbia citriodora</i>	Spotted Gum	300		300	27.0	9.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
346	<i>Corymbia citriodora</i>	Spotted Gum	530		530	28.0	12.0	6.4	2.5	Regular	-	-	-	-	-	-	Typical	Minor	-	-	-	Typical	-	-	-	-	-	-	
347	<i>Corymbia citriodora</i>	Spotted Gum	380		380	23.0	8.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
348	DEAD/STAG		350		350	17.0	4.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	Minor	-	-	-	Typical	-	-	Small	-	-	-	
349	<i>Corymbia citriodora</i>	Spotted Gum	680		680	32.0	14.0	8.2	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
350	<i>Corymbia citriodora</i>	Spotted Gum	380		380	23.0	11.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
351	<i>Corymbia citriodora</i>	Spotted Gum	610		610	28.0	14.0	7.3	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
352	<i>Corymbia citriodora</i>	Spotted Gum	320		320	27.0	9.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
353	<i>Corymbia citriodora</i>	Spotted Gum	460		460	27.0	12.0	5.5	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
354	<i>Corymbia citriodora</i>	Spotted Gum	320		320	22.0	7.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
355	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	19.0	5.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
356	<i>Corymbia tessellaris</i>	Moreton Bay Ash	330		330	19.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
357	<i>Corymbia intermedia</i>	Pink Bloodwood	480		480	27.0	12.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
358	<i>Eucalyptus tereticornis</i>	Forest Red Gum	310		310	17.0	6.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
359	<i>Acacia dispartima</i>	Hickory Wattle	400	360, 260	598	10.0	12.0	7.2	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
360	<i>Corymbia citriodora</i>	Spotted Gum	440		440	27.0	11.0	5.3	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
361	<i>Corymbia citriodora</i>	Spotted Gum	380		380	24.0	8.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
362	<i>Corymbia citriodora</i>	Spotted Gum	540		540	27.0	11.0	6.5	2.6	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
363	<i>Acacia disparrima</i>	Hickory Wattle	480		480	11.0	10.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
364	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	21.0	6.0	4.3	2.2	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
365	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	19.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	
366	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	310		310	19.0	6.0	3.7	2.0	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
367	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320		320	20.0	7.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
368	<i>Corymbia citriodora</i>	Spotted Gum	460		460	23.0	9.0	5.5	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
369	<i>Corymbia citriodora</i>	Spotted Gum	610		610	30.0	14.0	7.3	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
370	<i>Corymbia citriodora</i>	Spotted Gum	440		440	27.0	9.0	5.3	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
371	<i>Corymbia citriodora</i>	Spotted Gum	330		330	26.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
372	<i>Corymbia citriodora</i>	Spotted Gum	320		320	26.0	9.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
373	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	610		610	29.0	9.0	7.3	2.7	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	Minor	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
374	<i>Corymbia citriodora</i>	Spotted Gum	350		350	26.0	9.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
375	<i>Corymbia citriodora</i>	Spotted Gum	640		640	29.0	14.0	7.7	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
376	DEAD/STAG		580		580	26.0	9.0	7.0	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termites	-	
377	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	21.0	9.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
378	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	630		630	32.0	14.0	7.6	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
379	<i>Corymbia citriodora</i>	Spotted Gum	300		300	22.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
380	<i>Corymbia citriodora</i>	Spotted Gum	320		320	22.0	9.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
381	<i>Corymbia citriodora</i>	Spotted Gum	420		420	22.0	7.0	5.0	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
382	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	480		480	18.0	7.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termites	-	
383	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	17.0	5.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
384	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	740		740	24.0	11.0	8.9	2.9	Regular	-	-	Thinning	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
385	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	390		390	23.0	8.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
386	<i>Corymbia citriodora</i>	Spotted Gum	370		370	23.0	7.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
387	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	21.0	8.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
388	<i>Corymbia intermedia</i>	Pink Bloodwood	360		360	22.0	8.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
389	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	500		500	27.0	11.0	6.0	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
390	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	400		400	28.0	8.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
391	<i>Corymbia intermedia</i>	Pink Bloodwood	400		400	22.0	7.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
392	DEAD/STAG		350		350	21.0	6.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
393	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	310		310	21.0	8.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
394	<i>Corymbia citriodora</i>	Spotted Gum	420		420	27.0	9.0	5.0	2.3	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
395	<i>Corymbia citriodora</i>	Spotted Gum	690		690	30.0	12.0	8.3	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
396	<i>Corymbia citriodora</i>	Spotted Gum	520		520	32.0	9.0	6.2	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
397	<i>Corymbia citriodora</i>	Spotted Gum	330		330	23.0	7.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
398	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	420		420	24.0	9.0	5.0	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
399	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320		320	19.0	6.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
400	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	510		510	26.0	12.0	6.1	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
401	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	19.0	7.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
402	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	460		460	24.0	8.0	5.5	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
403	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	600		600	28.0	14.0	7.2	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
404	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	680		680	34.0	14.0	8.2	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
405	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	21.0	7.0	4.3	2.2	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
406	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	23.0	8.0	4.3	2.2	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
407	<i>Corymbia intermedia</i>	Pink Bloodwood	390		390	22.0	8.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	Introduced	-	-	Typical	-	-	-	-	-	-	
408	<i>Corymbia intermedia</i>	Pink Bloodwood	350		350	19.0	7.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
409	<i>Corymbia intermedia</i>	Pink Bloodwood	330		330	21.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
410	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	380		380	22.0	8.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
411	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320		320	22.0	8.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
412	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	620		620	28.0	14.0	7.4	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
413	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	380		380	22.0	8.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
414	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	310		310	22.0	7.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
415	<i>Corymbia intermedia</i>	Pink Bloodwood	340		340	21.0	7.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
416	<i>Corymbia intermedia</i>	Pink Bloodwood	320		320	17.0	6.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
417	<i>Eucalyptus tereticornis</i>	Forest Red Gum	320		320	20.0	6.0	3.8	2.1	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
418	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	330		330	21.0	6.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	
419	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	21.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
420	<i>Corymbia citriodora</i>	Spotted Gum	360		360	22.0	7.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
421	<i>Corymbia citriodora</i>	Spotted Gum	700		700	36.0	16.0	8.4	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
422	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	450		450	27.0	14.0	5.4	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
423	<i>Corymbia citriodora</i>	Spotted Gum	580		580	34.0	14.0	7.0	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
424	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	370		370	21.0	12.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
425	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	310		310	21.0	7.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
426	<i>Corymbia citriodora</i>	Spotted Gum	600		600	36.0	14.0	7.2	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
427	<i>Corymbia tessellaris</i>	Moreton Bay Ash	380		380	18.0	7.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
428	<i>Eucalyptus tereticornis</i>	Forest Red Gum	670		670	23.0	14.0	8.0	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
429	<i>Corymbia tessellaris</i>	Moreton Bay Ash	380		380	21.0	8.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
430	<i>Corymbia intermedia</i>	Pink Bloodwood	490		490	22.0	9.0	5.9	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
431	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	420		420	23.0	9.0	5.0	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
432	<i>Eucalyptus tereticornis</i>	Forest Red Gum	530		530	27.0	12.0	6.4	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
433	<i>Eucalyptus tereticornis</i>	Forest Red Gum	460		460	26.0	12.0	5.5	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
434	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	310		310	18.0	7.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
435	<i>Corymbia intermedia</i>	Pink Bloodwood	520		520	19.0	8.0	6.2	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
436	<i>Eucalyptus tereticornis</i>	Forest Red Gum	580		580	24.0	11.0	7.0	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
437	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	480		480	22.0	11.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
438	<i>Corymbia tessellaris</i>	Moreton Bay Ash	320		320	18.0	6.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
439	<i>Acacia disparrima</i>	Hickory Wattle	470	330	574	11.0	12.0	6.9	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
440	<i>Eucalyptus tereticornis</i>	Forest Red Gum	380		380	19.0	6.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
441	<i>Eucalyptus tereticornis</i>	Forest Red Gum	580		580	23.0	8.0	7.0	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
442	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	21.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
443	<i>Eucalyptus tereticornis</i>	Forest Red Gum	620		620	18.0	8.0	7.4	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
444	<i>Eucalyptus tereticornis</i>	Forest Red Gum	470		470	21.0	7.0	5.6	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
445	<i>Eucalyptus tereticornis</i>	Forest Red Gum	560		560	22.0	9.0	6.7	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
446	<i>Eucalyptus tereticornis</i>	Forest Red Gum	640		640	22.0	9.0	7.7	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
447	<i>Eucalyptus tereticornis</i>	Forest Red Gum	460		460	17.0	8.0	5.5	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
448	<i>Eucalyptus tereticornis</i>	Forest Red Gum	670		670	24.0	11.0	8.0	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
449	<i>Corymbia intermedia</i>	Pink Bloodwood	380		380	17.0	6.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
450	<i>Corymbia intermedia</i>	Pink Bloodwood	570		570	19.0	14.0	6.8	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
451	<i>Corymbia citriodora</i>	Spotted Gum	830		830	32.0	14.0	10.0	3.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
452	<i>Corymbia citriodora</i>	Spotted Gum	400		400	22.0	8.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
453	<i>Corymbia intermedia</i>	Pink Bloodwood	310		310	16.0	5.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
454	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	16.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
455	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	17.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
456	<i>Acacia disparrima</i>	Hickory Wattle	340		340	9.0	11.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
457	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	17.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
458	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	310		310	19.0	7.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
459	<i>Corymbia intermedia</i>	Pink Bloodwood	300	250, 180	430	18.0	7.0	5.2	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
460	<i>Eucalyptus tereticornis</i>	Forest Red Gum	300		300	17.0	5.0	3.6	2.0	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
461	<i>Corymbia intermedia</i>	Pink Bloodwood	500		500	21.0	8.0	6.0	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
462	<i>Eucalyptus tereticornis</i>	Forest Red Gum	300		300	18.0	5.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
463	<i>Corymbia citriodora</i>	Spotted Gum	370		370	21.0	7.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
464	<i>Corymbia intermedia</i>	Pink Bloodwood	350		350	17.0	5.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
465	<i>Corymbia citriodora</i>	Spotted Gum	470		470	24.0	9.0	5.6	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
466	<i>Corymbia intermedia</i>	Pink Bloodwood	330		330	17.0	5.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
467	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	610		610	19.0	7.0	7.3	2.7	One-sided	-	-	-	-	-	Lopped	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
468	<i>Corymbia intermedia</i>	Pink Bloodwood	350		350	18.0	6.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
469	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	560		560	23.0	9.0	6.7	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
470	<i>Eucalyptus tereticornis</i>	Forest Red Gum	330		330	16.0	5.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
471	<i>Eucalyptus tereticornis</i>	Forest Red Gum	330		330	14.0	6.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
472	<i>Eucalyptus tereticornis</i>	Forest Red Gum	550		550	17.0	9.0	6.6	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
473	<i>Eucalyptus tereticornis</i>	Forest Red Gum	330		330	17.0	6.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
474	<i>Corymbia tessellaris</i>	Moreton Bay Ash	490		490	18.0	7.0	5.9	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
475	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	18.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
476	<i>Eucalyptus tereticornis</i>	Forest Red Gum	330		330	18.0	5.0	4.0	2.1	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
477	<i>Eucalyptus tereticornis</i>	Forest Red Gum	360		360	17.0	8.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
478	<i>Eucalyptus tereticornis</i>	Forest Red Gum	330		330	18.0	7.0	4.0	2.1	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
479	<i>Eucalyptus tereticornis</i>	Forest Red Gum	330		330	18.0	6.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
480	<i>Eucalyptus tereticornis</i>	Forest Red Gum	320		320	18.0	5.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
481	<i>Eucalyptus tereticornis</i>	Forest Red Gum	340		340	17.0	6.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
482	<i>Eucalyptus tereticornis</i>	Forest Red Gum	300		300	17.0	4.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
483	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	830		830	22.0	14.0	10.0	3.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
484	<i>Corymbia tessellaris</i>	Moreton Bay Ash	420		420	17.0	7.0	5.0	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
485	<i>Eucalyptus tereticornis</i>	Forest Red Gum	520		520	18.0	7.0	6.2	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
486	<i>Eucalyptus tereticornis</i>	Forest Red Gum	400		400	19.0	8.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
487	<i>Corymbia intermedia</i>	Pink Bloodwood	350		350	16.0	9.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
488	<i>Eucalyptus tereticornis</i>	Forest Red Gum	390		390	17.0	5.0	4.7	2.2	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
489	<i>Eucalyptus tereticornis</i>	Forest Red Gum	470		470	18.0	9.0	5.6	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
490	<i>Eucalyptus tereticornis</i>	Forest Red Gum	430		430	19.0	7.0	5.2	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
491	<i>Corymbia citriodora</i>	Spotted Gum	340	190	389	19.0	9.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
492	<i>Corymbia citriodora</i>	Spotted Gum	380		380	19.0	5.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
493	<i>Corymbia citriodora</i>	Spotted Gum	420		420	21.0	8.0	5.0	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
494	<i>Eucalyptus tereticornis</i>	Forest Red Gum	760		760	26.0	14.0	9.1	2.9	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
495	<i>Eucalyptus tereticornis</i>	Forest Red Gum	330	280	433	16.0	7.0	5.2	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
496	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	480		480	17.0	8.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
497	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	480		480	19.0	9.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
498	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	680		680	25.0	12.0	8.2	2.8	Regular	-	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
499	<i>Corymbia citriodora</i>	Spotted Gum	400		400	22.0	7.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
500	<i>Corymbia citriodora</i>	Spotted Gum	390		390	21.0	6.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
501	<i>Corymbia citriodora</i>	Spotted Gum	410		410	23.0	6.0	4.9	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
502	<i>Eucalyptus tereticornis</i>	Forest Red Gum	300		300	17.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
503	<i>Eucalyptus tereticornis</i>	Forest Red Gum	530	210	570	21.0	9.0	6.8	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
504	<i>Corymbia tessellaris</i>	Moreton Bay Ash	300		300	17.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes	
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value		
505	<i>Corymbia tessellaris</i>	Moreton Bay Ash	430		430	18.0	8.0	5.2	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
506	<i>Eucalyptus tereticornis</i>	Forest Red Gum	510		510	18.0	7.0	6.1	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
507	<i>Eucalyptus tereticornis</i>	Forest Red Gum	400		400	18.0	8.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
508	<i>Eucalyptus tereticornis</i>	Forest Red Gum	540		540	21.0	8.0	6.5	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
509	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	610		610	22.0	9.0	7.3	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
510	<i>Eucalyptus tereticornis</i>	Forest Red Gum	530		530	23.0	9.0	6.4	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
511	<i>Eucalyptus tereticornis</i>	Forest Red Gum	480		480	19.0	7.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
512	<i>Eucalyptus tereticornis</i>	Forest Red Gum	320		320	18.0	5.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
513	<i>Eucalyptus tereticornis</i>	Forest Red Gum	530		530	23.0	9.0	6.4	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
514	<i>Eucalyptus tereticornis</i>	Forest Red Gum	580		580	26.0	9.0	7.0	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
515	<i>Eucalyptus tereticornis</i>	Forest Red Gum	620		620	24.0	8.0	7.4	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
516	<i>Eucalyptus tereticornis</i>	Forest Red Gum	480		480	23.0	8.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
517	<i>Eucalyptus tereticornis</i>	Forest Red Gum	470		470	22.0	9.0	5.6	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
518	<i>Eucalyptus tereticornis</i>	Forest Red Gum	460	290	544	23.0	9.0	6.5	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
519	<i>Eucalyptus tereticornis</i>	Forest Red Gum	410		410	18.0	7.0	4.9	2.3	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
520	<i>Eucalyptus tereticornis</i>	Forest Red Gum	1150		1150	27.0	14.0	13.8	3.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
521	<i>Eucalyptus siderophloia</i>	Grey Ironbark	620		620	20.0	9.0	7.4	2.7	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
522	<i>Eucalyptus tereticornis</i>	Forest Red Gum	380		380	19.0	9.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
523	<i>Eucalyptus tereticornis</i>	Forest Red Gum	370		370	21.0	8.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
524	<i>Eucalyptus tereticornis</i>	Forest Red Gum	400		400	22.0	8.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
525	<i>Corymbia tessellaris</i>	Moreton Bay Ash	500		500	22.0	12.0	6.0	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
526	<i>Acacia disparrima</i>	Hickory Wattle	360		360	9.0	8.0	4.3	2.2	One-sided	-	-	Thinning	Die-back	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	
527	<i>Eucalyptus tereticornis</i>	Forest Red Gum	650	390	758	22.0	14.0	9.1	2.9	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	Small	-	-		
528	<i>Eucalyptus tereticornis</i>	Forest Red Gum	400		400	21.0	8.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
529	<i>Eucalyptus tereticornis</i>	Forest Red Gum	440		440	23.0	8.0	5.3	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
530	<i>Eucalyptus tereticornis</i>	Forest Red Gum	330		330	17.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
531	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	650		650	22.0	11.0	7.8	2.8	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
532	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	470		470	23.0	10.0	5.6	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
533	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	480		480	23.0	11.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
534	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	540		540	23.0	11.0	6.5	2.6	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
535	<i>Corymbia citriodora</i>	Spotted Gum	340		340	22.0	8.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
536	<i>Corymbia citriodora</i>	Spotted Gum	350		350	23.0	9.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
537	<i>Corymbia citriodora</i>	Spotted Gum	370		370	24.0	9.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
538	<i>Corymbia citriodora</i>	Spotted Gum	330		330	26.0	7.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		
539	<i>Corymbia citriodora</i>	Spotted Gum	330		330	21.0	7.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	Minor	-	-	-	-	Typical	-	-	-	-	-	-	
540	122	Spotted Gum	295		295	20.0	6.0	3.5	2.0	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-		

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
541	<i>Corymbia citriodora</i>	Spotted Gum	450		450	23.0	9.0	5.4	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
542	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	330		330	10.0	7.0	4.0	2.1	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
543	<i>Corymbia citriodora</i>	Spotted Gum	600		600	23.0	8.0	7.2	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
544	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	510		510	22.0	7.0	6.1	2.5	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
545	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	24.0	11.0	4.3	2.2	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
546	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	615		615	22.0	10.0	7.4	2.7	Regular	-	-	Thinning	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
547	<i>Corymbia citriodora</i>	Spotted Gum	470		470	23.0	11.0	5.6	2.4	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
548	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	560		560	25.0	12.0	6.7	2.6	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	Small	-	-	-	
549	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	620		620	23.0	14.0	7.4	2.7	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	Termites	-	native bees
550	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	550		550	25.0	13.0	6.6	2.6	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
551	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	420		420	23.0	10.0	5.0	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
552	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	480		480	22.0	9.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	
553	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	530		530	26.0	11.0	6.4	2.5	Regular	-	-	Thinning	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
554	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	640		640	26.0	13.0	7.7	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	Small	-	-	
555	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	670		670	27.0	14.0	8.0	2.8	Regular	-	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	
556	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	805		805	26.0	15.0	9.7	3.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
557	<i>Eucalyptus tereticornis</i>	Forest Red Gum	460		460	20.0	6.0	5.5	2.4	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
558	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	675		675	25.0	13.0	8.1	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	Small	-	-	
559	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	490		490	22.0	10.0	5.9	2.5	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
560	<i>Eucalyptus tereticornis</i>	Forest Red Gum	460		460	23.0	10.0	5.5	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
561	<i>Corymbia citriodora</i>	Spotted Gum	310		310	23.0	8.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
562	<i>Corymbia citriodora</i>	Spotted Gum	540		540	21.0	6.0	6.5	2.6	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
563	<i>Corymbia citriodora</i>	Spotted Gum	320		320	22.0	5.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
564	<i>Corymbia citriodora</i>	Spotted Gum	300		300	23.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
565	<i>Corymbia citriodora</i>	Spotted Gum	300		300	21.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
566	<i>Corymbia citriodora</i>	Spotted Gum	370		370	19.0	6.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
567	<i>Corymbia citriodora</i>	Spotted Gum	340		340	22.0	6.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
568	<i>Corymbia citriodora</i>	Spotted Gum	350		350	24.0	7.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
569	<i>Corymbia citriodora</i>	Spotted Gum	300		300	18.0	5.0	3.6	2.0	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
570	<i>Corymbia citriodora</i>	Spotted Gum	330		330	23.0	8.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
571	<i>Corymbia citriodora</i>	Spotted Gum	300		300	23.0	5.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
572	<i>Corymbia citriodora</i>	Spotted Gum	410		410	24.0	8.0	4.9	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
573	<i>Corymbia citriodora</i>	Spotted Gum	300		300	22.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
574	<i>Corymbia citriodora</i>	Spotted Gum	390		390	23.0	7.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
575	<i>Corymbia citriodora</i>	Spotted Gum	320		320	15.0	6.0	3.8	2.1	Regular	-	-	-	-	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
576	<i>Corymbia citriodora</i>	Spotted Gum	310		310	22.0	7.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
577	<i>Corymbia citriodora</i>	Spotted Gum	470		470	24.0	9.0	5.6	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
578	<i>Corymbia citriodora</i>	Spotted Gum	400		400	24.0	7.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
579	<i>Corymbia citriodora</i>	Spotted Gum	300		300	19.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
580	<i>Corymbia citriodora</i>	Spotted Gum	340		340	24.0	9.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
581	<i>Corymbia citriodora</i>	Spotted Gum	340		340	26.0	6.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
582	<i>Corymbia citriodora</i>	Spotted Gum	300		300	27.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
583	<i>Corymbia citriodora</i>	Spotted Gum	430		430	23.0	7.0	5.2	2.3	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
584	DEAD/STAG		440		440	20.0	5.0	5.3	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
585	<i>Corymbia citriodora</i>	Spotted Gum	350		350	22.0	7.0	4.2	2.1	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
586	<i>Corymbia citriodora</i>	Spotted Gum	350		350	21.0	7.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
587	<i>Corymbia citriodora</i>	Spotted Gum	330		330	24.0	7.0	4.0	2.1	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
588	<i>Corymbia citriodora</i>	Spotted Gum	370		370	23.0	6.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
589	<i>Corymbia citriodora</i>	Spotted Gum	400		400	21.0	6.0	4.8	2.3	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
590	<i>Corymbia citriodora</i>	Spotted Gum	240	260	354	18.0	6.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
591	<i>Corymbia citriodora</i>	Spotted Gum	300		300	24.0	5.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
592	<i>Corymbia citriodora</i>	Spotted Gum	420		420	21.0	7.0	5.0	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
593	<i>Corymbia tessellaris</i>	Moreton Bay Ash	300		300	12.0	4.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
594	<i>Corymbia citriodora</i>	Spotted Gum	300		300	24.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
595	<i>Corymbia citriodora</i>	Spotted Gum	330		330	22.0	6.0	4.0	2.1	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
596	<i>Corymbia citriodora</i>	Spotted Gum	250	240	347	20.0	6.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
597	<i>Eucalyptus tereticornis</i>	Forest Red Gum	210	210, 210	364	7.0	4.0	4.4	2.2	Regular	-	-	Thinning	Die-back	Epicormic	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
598	<i>Corymbia citriodora</i>	Spotted Gum	300		300	16.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
599	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	330		330	21.0	8.0	4.0	2.1	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
600	<i>Corymbia citriodora</i>	Spotted Gum	350		350	22.0	7.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
601	<i>Corymbia citriodora</i>	Spotted Gum	330		330	22.0	6.0	4.0	2.1	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
602	<i>Corymbia citriodora</i>	Spotted Gum	300		300	24.0	5.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
603	<i>Corymbia citriodora</i>	Spotted Gum	380		380	22.0	6.0	4.6	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
604	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320		320	20.0	6.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
605	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	16.0	4.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
606	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	15.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
607	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	330		330	19.0	6.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
608	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	14.0	5.0	3.6	2.0	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
609	<i>Corymbia citriodora</i>	Spotted Gum	340		340	24.0	7.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
610	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	630		630	24.0	10.0	7.6	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
611	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	330		330	19.0	5.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
612	<i>Corymbia intermedia</i>	Pink Bloodwood	260	170	311	17.0	4.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
613	<i>Corymbia intermedia</i>	Pink Bloodwood	410		410	20.0	8.0	4.9	2.3	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
614	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	480		480	24.0	8.0	5.8	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
615	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	15.0	6.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
616	<i>Corymbia citriodora</i>	Spotted Gum	370		370	18.0	5.0	4.4	2.2	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
617	<i>Corymbia citriodora</i>	Spotted Gum	650		650	25.0	10.0	7.8	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	Small	-	-	-	
618	<i>Corymbia citriodora</i>	Spotted Gum	660		660	24.0	10.0	7.9	2.8	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	Small	-	-	-	
619	<i>Eucalyptus tereticornis</i>	Forest Red Gum	280	299	410	15.0	5.0	4.9	2.3	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
620	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	13.0	7.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
621	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	320		320	12.0	6.0	3.8	2.1	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
622	<i>Corymbia intermedia</i>	Pink Bloodwood	220	240	326	15.0	4.0	3.9	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
623	<i>Eucalyptus tereticornis</i>	Forest Red Gum	320		320	20.0	6.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
624	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	360		360	21.0	6.0	4.3	2.2	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
625	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	390		390	20.0	6.0	4.7	2.2	One-sided	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
626	<i>Corymbia intermedia</i>	Pink Bloodwood	400		400	10.0	4.0	4.8	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
627	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	300		300	16.0	4.0	3.6	2.0	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
628	<i>Corymbia citriodora</i>	Spotted Gum	320		320	13.0	5.0	3.8	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
629	<i>Corymbia citriodora</i>	Spotted Gum	370		370	23.0	8.0	4.4	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
630	<i>Eucalyptus tereticornis</i>	Forest Red Gum	310		310	18.0	5.0	3.7	2.0	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
631	<i>Corymbia citriodora</i>	Spotted Gum	640		640	15.0	6.0	7.7	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
632	DEAD/STAG		430		430	16.0	5.0	5.2	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
633	<i>Corymbia citriodora</i>	Spotted Gum	330		330	20.0	6.0	4.0	2.1	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
634	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	310		310	12.0	4.0	3.7	2.0	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
635	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	420		420	10.0	6.0	5.0	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
636	<i>Corymbia tessellaris</i>	Moreton Bay Ash	360		360	10.0	4.0	4.3	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
637	<i>Acacia disparrima</i>	Hickory Wattle	330		330	6.0	6.0	4.0	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
638	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	510		510	11.0	9.0	6.1	2.5	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
639	<i>Acacia disparrima</i>	Hickory Wattle	560	270	622	6.0	7.0	7.5	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
640	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	640		640	26.0	9.0	7.7	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
641	<i>Eucalyptus tereticornis</i>	Forest Red Gum	570		570	22.0	10.0	6.8	2.6	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
642	<i>Corymbia intermedia</i>	Pink Bloodwood	620		620	12.0	7.0	7.4	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
643	<i>Eucalyptus tereticornis</i>	Forest Red Gum	300		300	11.0	6.0	3.6	2.0	Regular	-	-	Thinning	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
644	<i>Eucalyptus tereticornis</i>	Forest Red Gum	430		430	12.0	9.0	5.2	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
645	<i>Eucalyptus tereticornis</i>	Forest Red Gum	320		320	20.0	7.0	3.8	2.1	Regular	-	-	Thinning	Die-back	-	-	Poor	-	-	-	-	Typical	-	-	-	-	-	-	
646	<i>Corymbia tessellaris</i>	Moreton Bay Ash	340		340	20.0	6.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
647	<i>Eucalyptus tereticornis</i>	Forest Red Gum	350		350	20.0	7.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
648	<i>Eucalyptus tereticornis</i>	Forest Red Gum	410		410	21.0	6.0	4.9	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	

Specimen Details										Canopy Condition Details								Trunk Condition Details					Fauna Details and Habitat Value						Additional Notes
Tree ID	Botanical Name	Common Name	Trunk DBH (mm)	Additional Trunks DBH (mm)	Total DBH (mm) [AS 4970-2009]	Height (m)	Spread (m)	Tree Protection Zone (m)	Structural Root Zone (m)	Canopy Form	Spreading	Seeding	Thinning	Die-Back	Epicormic Growth	Lopped	Canopy Health	Leaning	Vines	Trunk Damage	Fire Damage	Trunk Health	Scats	Scratches	Hollows	Nest	Termites	Habitat Value	
649	<i>Eucalyptus tereticornis</i>	Forest Red Gum	310		310	17.0	6.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
650	<i>Eucalyptus tereticornis</i>	Forest Red Gum	390		390	11.0	5.0	4.7	2.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
651	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	460		460	24.0	9.0	5.5	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
652	<i>Eucalyptus tereticornis</i>	Forest Red Gum	560		560	20.0	8.0	6.7	2.6	Regular	-	-	-	Die-back	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
653	<i>Eucalyptus tereticornis</i>	Forest Red Gum	360		360	16.0	6.0	4.3	2.2	Regular	-	-	Thinning	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
654	<i>Eucalyptus tereticornis</i>	Forest Red Gum	910		910	25.0	12.0	10.9	3.2	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
655	<i>Eucalyptus tereticornis</i>	Forest Red Gum	630		630	25.0	9.0	7.6	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
656	<i>Eucalyptus siderophloia</i>	Grey Ironbark	600		600	15.0	6.0	7.2	2.7	One-sided	-	-	-	-	-	-	Typical	Minor	-	-	-	Typical	-	-	-	-	-	-	
657	<i>Eucalyptus tereticornis</i>	Forest Red Gum	610		610	26.0	12.0	7.3	2.7	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
658	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	350		350	7.0	3.0	4.2	2.1	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
659	<i>Corymbia citriodora</i>	Spotted Gum	320	340	467	25.0	8.0	5.6	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
660	<i>Acacia disparrima</i>	Hickory Wattle	300		300	4.0	5.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
661	DEAD/STAG		430		430	12.0	6.0	5.2	2.3	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
662	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	340		340	21.0	5.0	4.1	2.1	Regular	-	-	-	-	-	-	Typical	-	-	Trunk Dmg.	-	Typical	-	-	-	-	-	-	
663	<i>Corymbia citriodora</i>	Spotted Gum	470		470	25.0	9.0	5.6	2.4	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	-	-	-	
664	<i>Corymbia intermedia</i>	Pink Bloodwood	300		300	15.0	6.0	3.6	2.0	Regular	-	-	-	-	-	-	Typical	-	-	-	-	Typical	-	-	-	Small	Termites	-	
665	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	310		310	25.0	5.0	3.7	2.0	Regular	-	-	-	-	-	-	Typical	-	Native	-	-	Typical	-	-	-	-	-	-	



Appendix G

Koala SAT and Habitat Assessment Survey Results

Koala SAT Data Sheet

Location: Deebing Heights (Rawlings Road)

Date: 4.02.2016

Site Number: 1

Recorder: David Havill

Locality: Rawlings Road

No.	Scientific Name	Common Name	DBH	Scats
1	<i>Eucalyptus tereticornis</i>	Forest Red Gum	230	Scats
2	<i>Acacia disparrima</i>	Hickory Wattle	180	Scats
3	<i>Corymbia tessellaris</i>	Moreton Bay Ash	130	Scats
4	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	230	Nil
5	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	100	Nil
6	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	120	Nil
7	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	420	Nil
8	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	220	Nil
9	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	160	Nil
10	<i>Corymbia tessellaris</i>	Moreton Bay Ash	200	Nil
11	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	190	Nil
12	<i>Corymbia citriodora</i>	Spotted Gum	470	Scats
13	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	120	Scats
14	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	130	Nil
15	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	230	Nil
16	<i>Corymbia intermedia</i>	Pink Bloodwood	140	Nil
17	<i>Corymbia citriodora</i>	Spotted Gum	340	Nil
18	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	110	Nil
19	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	110	Nil
20	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
21	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	100	Nil
22	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	170	Nil
23	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	160	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	280	Nil
25	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	140	Nil
26	<i>Corymbia tessellaris</i>	Spotted Gum	160	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	200	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	230	Scats
29	<i>Corymbia tessellaris</i>	Moreton Bay Ash	110	Scats
30	<i>Corymbia citriodora</i>	Spotted Gum	240	Nil

Assessment radius (m):

Percentage trees utilised (%):

23.33

Usage:

Medium

Notes:

Koala SAT Data Sheet

Location: Deebing Heights (Rawlings Road)

Date: 4.02.2016

Site Number: 2

Recorder: David Havill

Locality: Rawlings Road

No.	Scientific Name	Common Name	DBH	Scats
1	<i>Corymbia citriodora</i>	Spotted Gum	380	Scats
2	<i>Corymbia citriodora</i>	Spotted Gum	230	Scats
3	<i>Corymbia intermedia</i>	Pink Bloodwood	100	Nil
4	<i>Corymbia citriodora</i>	Spotted Gum	110	Nil
5	<i>Corymbia citriodora</i>	Spotted Gum	300	Nil
6	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
7	<i>Corymbia citriodora</i>	Spotted Gum	380	Nil
8	<i>Corymbia citriodora</i>	Spotted Gum	290	Nil
9	<i>Corymbia citriodora</i>	Spotted Gum	250	Nil
10	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
11	<i>Corymbia citriodora</i>	Spotted Gum	290	Scats
12	<i>Corymbia citriodora</i>	Spotted Gum	330	Scats
13	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
14	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
15	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
16	<i>Angophora leiocarpa</i>	Smooth Bark Apple	100	Nil
17	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
18	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
19	<i>Eucalyptus tereticornis</i>	Forest Red Gum	100	Nil
20	<i>Corymbia citriodora</i>	Spotted Gum	150	Nil
21	<i>Corymbia citriodora</i>	Spotted Gum	230	Nil
22	<i>Corymbia citriodora</i>	Spotted Gum	120	Nil
23	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	210	Nil
25	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
26	<i>Corymbia citriodora</i>	Spotted Gum	240	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	190	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
29	<i>Eucalyptus tereticornis</i>	Forest Red Gum	140	Scats
30	<i>Corymbia citriodora</i>	Spotted Gum	420	Nil

Assessment radius (m):

Percentage trees utilised (%):

16.67

Usage:

Low

Notes:

Koala SAT Data Sheet

Location: Deebing Heights (Rawlings Road)

Date: 4.02.2016

Site Number: 3

Recorder: David Havill

Locality: Rawlings Road

No.	Scientific Name	Common Name	DBH	Scats
1	<i>Corymbia citriodora</i>	Spotted Gum	320	Scats
2	<i>Alphitonia excelsa</i>	Soap Tree	210	Nil
3	<i>Corymbia citriodora</i>	Spotted Gum	100	Nil
4	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
5	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
6	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
7	<i>Corymbia citriodora</i>	Spotted Gum	190	Scats
8	<i>Corymbia citriodora</i>	Spotted Gum	200	Nil
9	<i>Eucalyptus tereticornis</i>	Forest Red Gum	100	Nil
10	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
11	<i>Corymbia citriodora</i>	Spotted Gum	210	Nil
12	<i>Corymbia citriodora</i>	Spotted Gum	180	Nil
13	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
14	<i>Corymbia citriodora</i>	Spotted Gum	310	Scats
15	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
16	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
17	<i>Corymbia citriodora</i>	Spotted Gum	110	Nil
18	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	100	Nil
19	<i>Corymbia citriodora</i>	Spotted Gum	230	Nil
20	<i>Corymbia citriodora</i>	Spotted Gum	280	Nil
21	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
22	<i>Corymbia citriodora</i>	Spotted Gum	170	Nil
23	<i>Corymbia citriodora</i>	Spotted Gum	140	Nil
24	<i>Corymbia citriodora</i>	Spotted Gum	260	Nil
25	<i>Corymbia citriodora</i>	Spotted Gum	340	Scats
26	<i>Eucalyptus tereticornis</i>	Forest Red Gum	100	Nil
27	<i>Corymbia citriodora</i>	Spotted Gum	130	Nil
28	<i>Corymbia citriodora</i>	Spotted Gum	260	Nil
29	<i>Corymbia citriodora</i>	Spotted Gum	160	Nil
30	<i>Corymbia citriodora</i>	Spotted Gum	110	Nil

Assessment radius (m):

Percentage trees utilised (%):

13.34

Usage:

Low

Notes:

Koala SAT Data Sheet

Location: Deebing Heights (Rawlings Road)

Date: 4.02.2016

Site Number: 4

Recorder: David Havill

Locality: Rawlings Road

No.	Scientific Name	Common Name	DBH	Scats
1	<i>Eucalyptus tereticornis</i>	Forest Red gum	550	Scats
2	<i>Eucalyptus tereticornis</i>	Forest Red gum	420	Scats
3	<i>Eucalyptus tereticornis</i>	Forest Red gum	130	Nil
4	<i>Eucalyptus tereticornis</i>	Forest Red gum	580	Scats
5	<i>Eucalyptus tereticornis</i>	Forest Red gum	200	Nil
6	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	200	Nil
7	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	190	Nil
8	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	180	Nil
9	<i>Acacia dispartima</i>	Hickory Wattle	280	Nil
10	<i>Eucalyptus tereticornis</i>	Forest Red gum	130	Nil
11	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	340	Nil
12	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	120	Nil
13	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	160	Nil
14	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	130	Nil
15	<i>Eucalyptus tereticornis</i>	Forest Red gum	280	Nil
16	<i>Eucalyptus tereticornis</i>	Forest Red gum	240	Nil
17	<i>Eucalyptus tereticornis</i>	Forest Red gum	650	Nil
18	<i>Eucalyptus tereticornis</i>	Forest Red gum	200	Nil
19	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	150	Nil
20	<i>Eucalyptus tereticornis</i>	Forest Red gum	280	Nil
21	<i>Eucalyptus tereticornis</i>	Forest Red gum	200	Nil
22	<i>Eucalyptus tereticornis</i>	Forest Red gum	230	Nil
23	<i>Eucalyptus tereticornis</i>	Forest Red gum	290	Scats
24	<i>Eucalyptus tereticornis</i>	Forest Red gum	270	Scats
25	<i>Eucalyptus tereticornis</i>	Forest Red gum	210	Nil
26	<i>Eucalyptus tereticornis</i>	Forest Red gum	160	Nil
27	<i>Eucalyptus tereticornis</i>	Forest Red gum	170	Nil
28	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	270	Nil
29	<i>Corymbia intermedia</i>	Pink Bloodwood	220	Nil
30	<i>Eucalyptus crebra</i>	Narrow Leaf Ironbark	260	Scats

Assessment radius (m):

Percentage trees utilised (%):

20.00

Usage:

Low

Notes:

GL DHA Environmental Management Guideline

1. Purpose

To describe how DHA addresses its environmental management obligations and seeks to improve the performance of its housing portfolio by design, equipment specification and construction processes. This also applies to its administration facilities.

2. Scope

DHA takes into account environmental aspects, impacts and controls from the inception of a project to the delivery of a product or service.

DHA maintains an ethical and environmentally responsible approach to the procurement of goods and services for its office.

3. Innovation

The Strategic Innovation Group coordinates the identification, investigation, testing and assessment of concepts and products related to the delivery of housing solutions on behalf of its principal client, the Department of Defence (DoD).

The group meets regularly with the business units to discuss how the concept or product can enhance the service delivery to DHA customers. The Property Provisioning Group (PPG) and Property and Tenancy Service (P+TS) are at the centre of the consultation as they have to convert the opportunity into a Business As Usual (BAU) solution which meets the requirements of DoD and DHA's customers. The advantages of the innovation to Lessors, Sale and Leaseback SLB, customer is taken into account.

Environmental strategies may include, but not be limited to, the following:

- New environmentally responsible construction material
- Energy saving appliances
- Energy saving light fixtures
- Efficient (cost saving) construction techniques
- Technology solutions
- 'Lifecycle' products

Evaluation processes are established and include Community Health and Outpatient Care (CHOC) which takes into account the types of innovation relevant to Defence Members and Lessors. If accepted, the concept, material or appliance will be tested in a project(s) and the outcomes are closely evaluated. This may include variations depending on the location and climatic conditions impacting on the project. This includes items which only relate to specific types of development, such as those in tropical areas or unit developments.

4. Development and Construction

The environmental controls for development and construction are largely determined by the conditions applied by the statutory body determining the development or planning application. This may include the protection of trees, heritage items, and removal or control of hazardous substances to the control of run-off, silt and noise.

These conditions will be a contractual obligation of the principal contractors appointed by DHA. However, it is the responsibility of the DHA Project Manager to ensure that principal contractors are compliant with these obligations. This is effected by regular site, document reviews and action plans to address deficiencies.

Principal contractors are required to provide site specific environmental management plans outlining how they will control the environmental aspects and impacts for the project. This will be reviewed and work is only to commence when the plan is compliant. This includes safety data sheets and the control of hazardous substances.

5. Procurement

DHA product specification requirements reflect the organisation's environmental requirements. This is the benchmark against which principal contractors develop and refine the design utilities and prime cost items for a project. This includes the inclusion of appropriate alternate environmentally effective materials and construction strategies where budget constraints allow their inclusion. These may include products or construction techniques that are being trialled and are not considered to be BAU specification.

The strategies may include, but not be limited to, the following:

- Recycling of construction waste, using segregated or co-mingled bins
- Reduced carbon footprint for a specified construction material
- Reduced water consumption for appliances and landscaping design
- Reduced construction time

These are measurable outcomes which can be tracked over time to demonstrate DHA's commitment to a reduction in the environmental impact of its operational activities.

6. Contractors

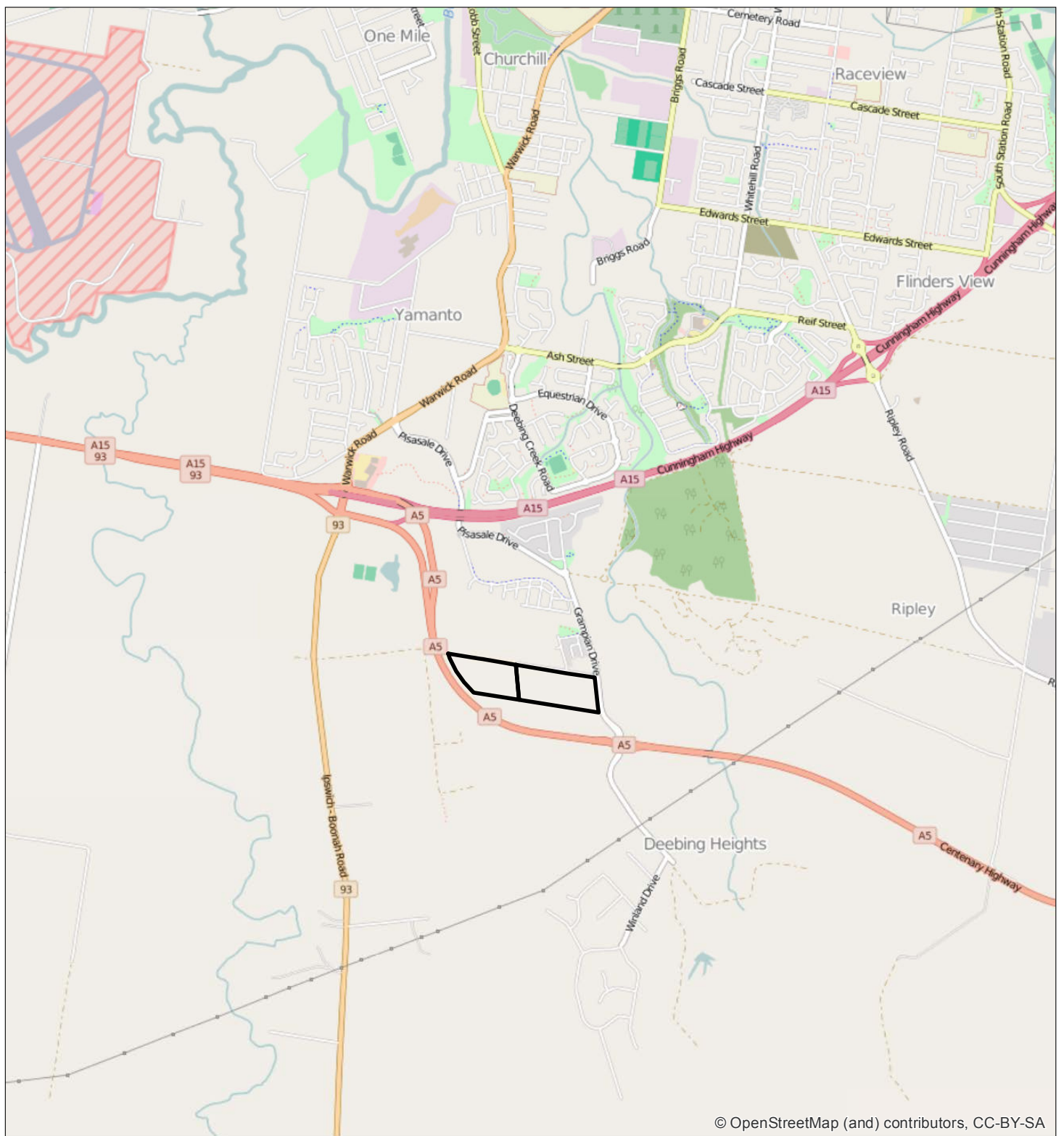
Contractors are selected via a tender process which includes information on how they will address environmental aspects, impacts and controls. They provide repair maintenance and upgrade programs in response to tenant requests, cyclical and property management determined upgrades.

Contractors are provided with information on products that are to be used when appliances are to be replaced or upgraded. Their on-site processes are reviewed by technical specialists and tenant feedback.

7. Office and Administration

The offices utilise, where appropriate, products that are made of recycled or sustainable materials. Environmentally appropriate materials are used for cleaning. Paper, plastic and metal waste is segregated and recycled according to commercial arrangements.

Vehicle fleets are effectively managed with safety, fuel consumption and whole of life recycle data considered during the procurement process.



Legend

 Project Site DCDB

Figure 1

Site Context

File ref. 8122 E Figure 1 Site Context A
Date 25/02/2016
Project Rawlings Road, Deebling Heights

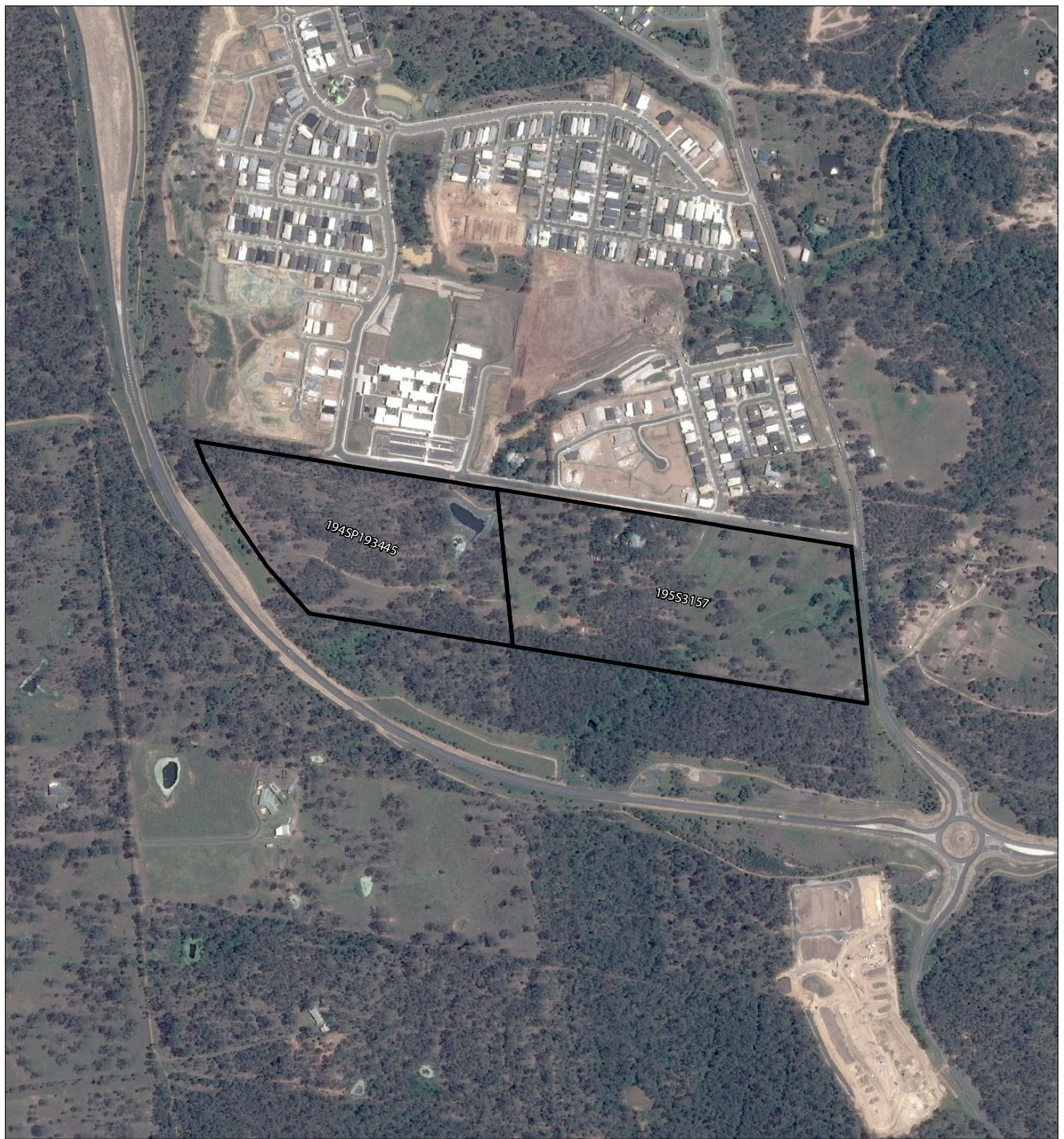
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Scale (A4): 1:40,000 [GDA 1994 MGA Z56]



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Legend



Project Site DCDB

Figure 2

Site Aerial

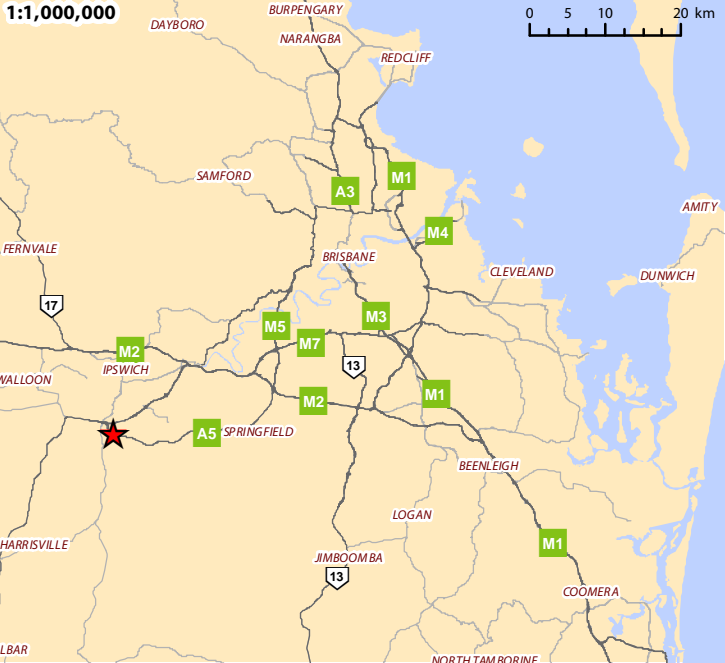
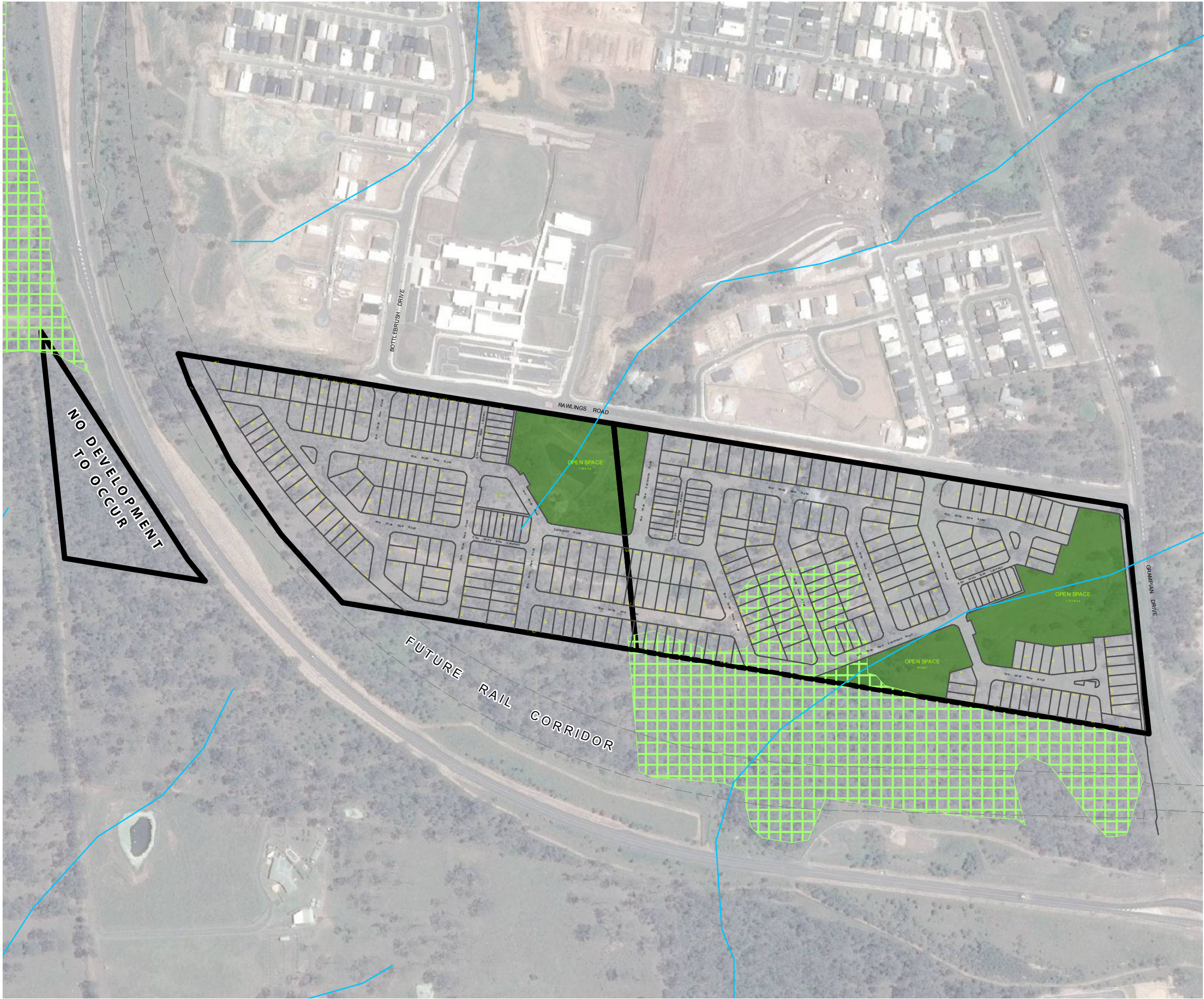
File ref. 8122 E Figure 2 Site Aerial A
Date 12/02/2016
Project Rawlings Road, Deebling Heights

0 50 100 200 300 m

Scale (A4): 1:9,000 [GDA 1994 MGA Z56]



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- Legend**
- Project site DCDB
 - VMA Watercourse
 - VMA Regulated Vegetation
 - Development Layout



Grampian Drive, Deebling Heights

Development Layout

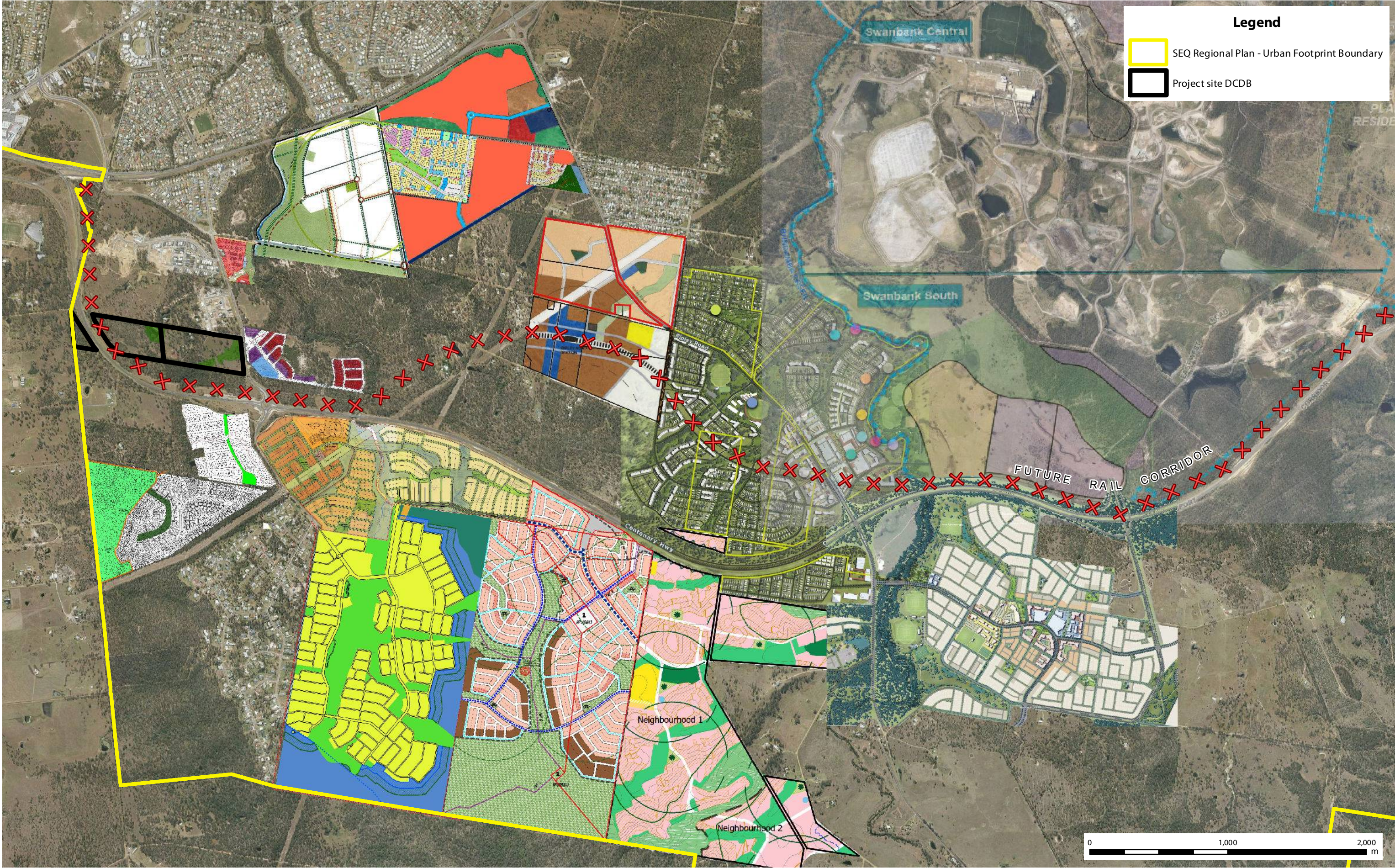
Plan 1

Date | 23/05/2016
Scale | 1:4,500 @ A3
Coordinate System | GDA 1994 MGA Zone 56
Projection | Transverse Mercator
Client | DHA
Project | Grampian Drive, Deebling Heights
Address/RPD | 19553157
Sources | QLD GIS Layers (QLD Gov. Info Services 2015),
Aerial (Nearmap, 2015)

SHG File
8122 E 03 Development Layout B

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CONFIRM ALL DIMENSIONS ON SITE PRIOR TO CONSTRUCTION AND DO NOT SCALE FROM THE DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETRES. ANY DISCREPANCIES SHOULD BE CLARIFIED BY WRITING WITH SAUNDERS HAVILL GROUP PRIOR TO THE COMMENCEMENT OF WORK.
PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR FURTHER UNDERGROUND SERVICES AND OVERHEAD LOCATIONS OF ALL SERVICES.

ISSUES:				
Issue	Date	Description	Drawn	Checked
A	22/02/2016	Prelim Draft	TC	MS
B	23/05/2016	Layout Amendments	TC	KD



Legend

SEQ Regional Plan - Urban Footprint Boundary

Project site DCDB



Grampian Drive, Deebling Heights

Ripley - Habitat Fragmentation

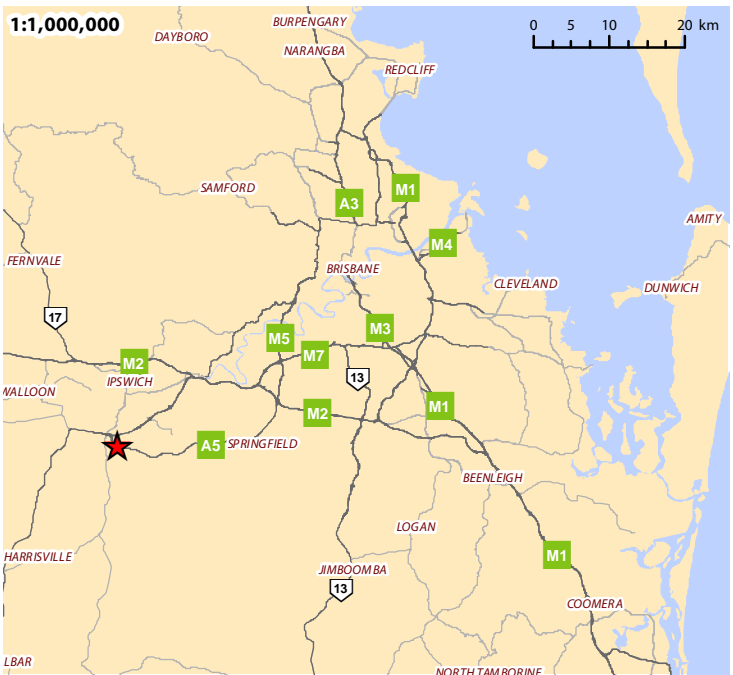
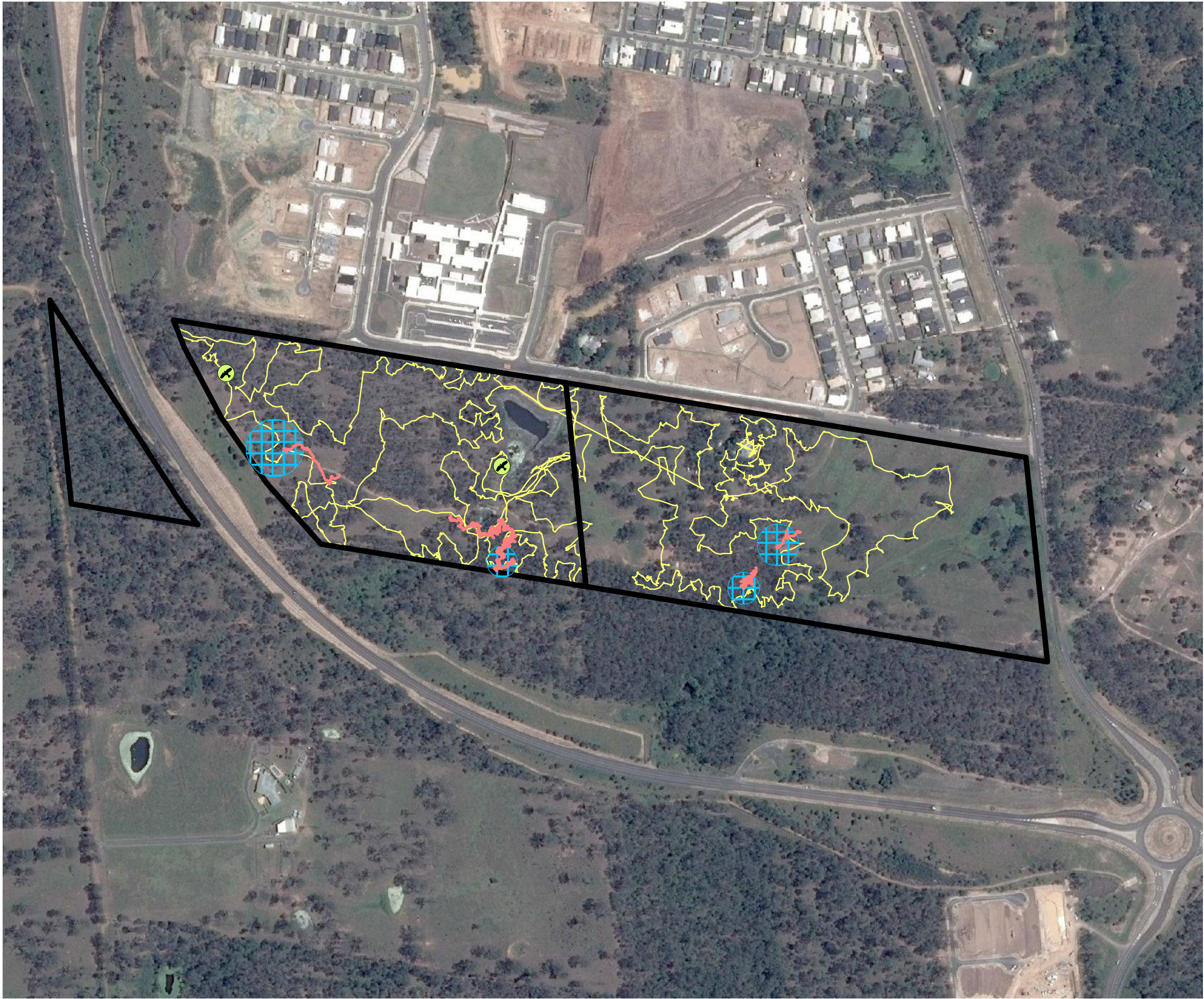
Date | 23/05/2016
Scale | 1:25,000 @ A3
Coordinate System | GDA 1994 MGA Zone 56
Projection | Transverse Mercator
Client | DHA
Project | Grampian Drive, Deebling Heights
Address/RPD | 19553157
Sources | QLD GIS Layers (QLD Gov. Info Services 2015),
Aerial (Nearmap, 2015)

Plan 2

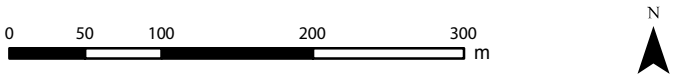
SHG File
8122 E 02 Fragmentation A

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PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON SITE, THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR FURTHER UNDERGROUND SERVICES AND DEELED LOCATIONS OF ALL SERVICES.

ISSUES:				
Issue	Date	Description	Drawn	Checked
A	22/02/2016	Prelim Draft	TC	MS
B	23/05/2016	Layout Amendments	TC	KD



- Legend**
- Project site DCDB
 - Bird survey
 - Scat meander search
 - SAT location
 - GPS tracklog



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Grampian Drive, Deebling Heights

Ecological Field Survey

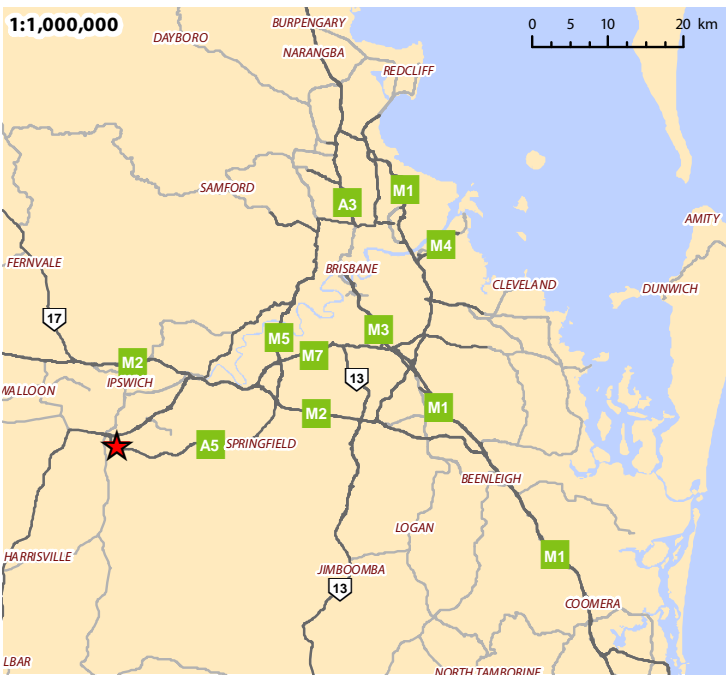
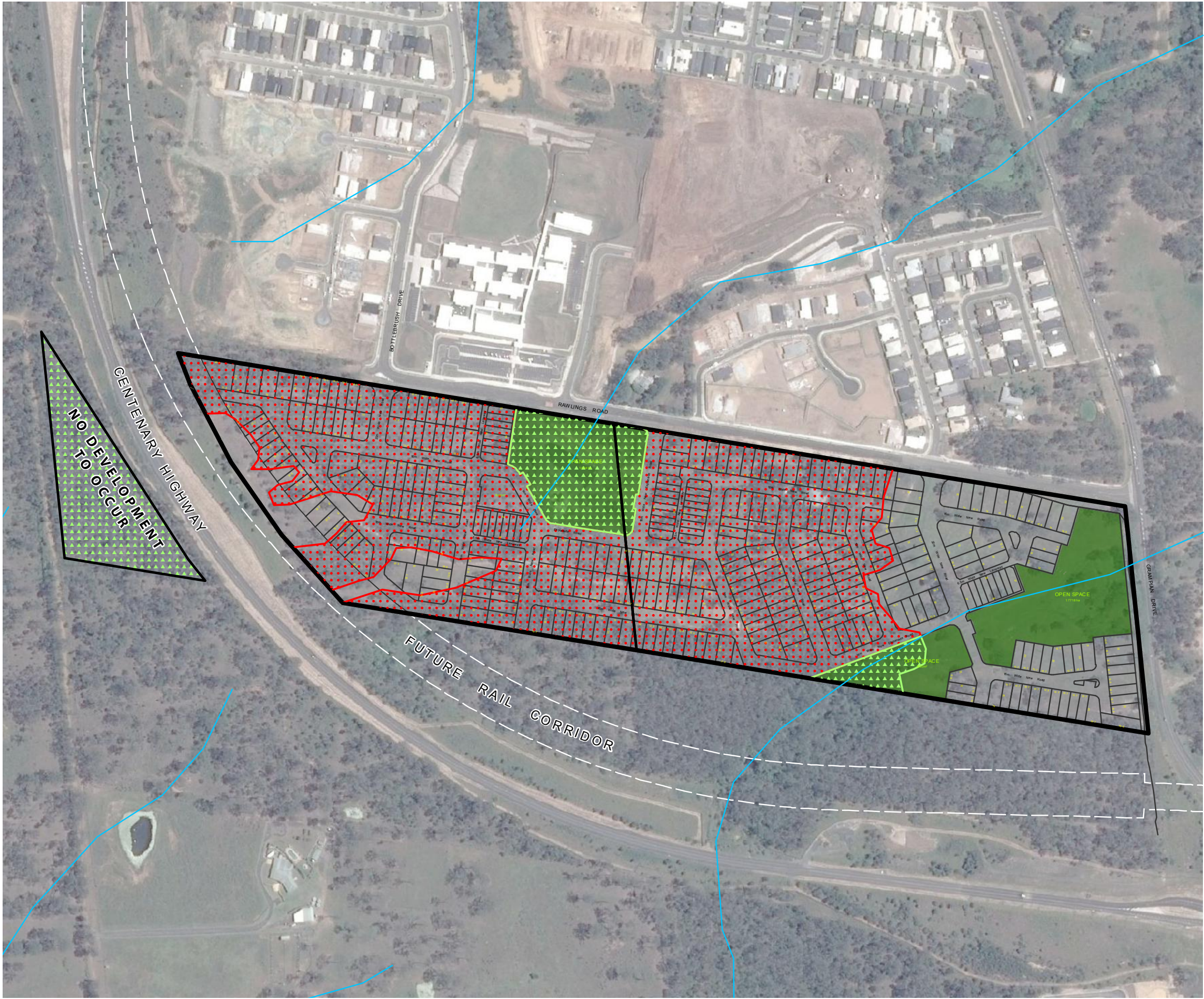
Date | 23/05/2016
Scale | 1:5,000 @ A3
Coordinate System | GDA 1994 MGA Zone 56
Projection | Transverse Mercator
Client | DHA
Project | Grampian Drive, Deebling Heights
Address/RPD | 19553157
Sources | QLD GIS Layers (QLD Gov. Info Services 2015),
Aerial (Nearmap, 2015)

Plan 3






SHG File
8122 E 04 Field Survey A

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ISSUES:				
Issue	Date	Description	Drawn	Checked
A	23/05/2016	Prelim Draft	TC	MS



Legend

-  Project site DCDB
-  VMA Watercourse
-  Development Layout
-  Potential Koala Habitat to remove (15 ha)
-  Potential Koala to retain (4 ha)



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Potential Koala Habitat Plan

Date | 31/05/2016
Scale | 1:4,500 @ A3
Coordinate System | GDA 1994 MGA Zone 56
Projection | Transverse Mercator
Client | DHA
Project | Grampian Drive, Deebing Heights
Address/RPD | 19553157
Sources | QLD GIS Layers (QLD Gov. Info Services 2015),
Aerial (Nearmap, 2015)

Plan 4

SHG File
8122 E 04 Koala Habitat A

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ISSUES:				
Issue	Date	Description	Drawn	Checked
A	31/05/2016	Prelim Draft	TC	KD