environmental management

saunders havill group

100 Stern Road, Bellmere
EPBC Act Referral

Bellmere Land Holdings 1 Pty Ltd

Mr. Jaryd Collins
19 July 2016
8166

surveying town planning urban design environmental management landscape architecture

Referral of proposed action

Project title: Stern Road Development, Bellmere

1 Summary of proposed action

1.1 **Short description**

This referral is for a proposed residential development located at 100 Stern Road, Bellmere, within the **Moreton Bay Regional Council** (**MBRC**) Local Government area, and specifically within the Caboolture West Local Plan area. The proposed action is for a development covering approximately 48 hectares (ha) which will create approximately 756 new residential lots and dwellings. The development will result in the clearing of some young regrowth vegetation occurring on highly disturbed paddock areas, and approximately 3 ha of more mature vegetation.

1.2 **Latitude and longitude**

ID	Longitude (east)	Latitude (south)	ID	Longitude (east)	Latitude (south)
1	152.891560202	-27.0793723114	26	152.903814508	-27.0849530827
2	152.891890615	-27.0791963925	27	152.903427713	-27.0847467844
3	152.892040571	-27.0793577511	28	152.902032750	-27.0853579467
4	152.892881175	-27.0793763100	29	152.901292189	-27.0853275688
5	152.893051205	-27.0794779630	30	152.902257699	-27.0861733772
6	152.893053872	-27.0801826584	31	152.902851790	-27.0858453304
7	152.893294040	-27.0801947849	32	152.904279620	-27.0858164500
8	152.893293765	-27.0804844256	33	152.905106121	-27.0869105298
9	152.893483902	-27.0804905417	34	152.902270516	-27.0869414771
10	152.893657126	-27.0807444819	35	152.901777059	-27.0864656689
11	152.895011101	-27.0811486079	36	152.901990751	-27.0862508270
12	152.896488814	-27.0808668253	37	152.900889667	-27.0851762942
13	152.896669539	-27.0800024658	38	152.900220920	-27.0854230609
14	152.896895277	-27.0799598866	39	152.899530855	-27.0852576434
15	152.896782460	-27.0795369877	40	152.897696746	-27.0841045473
16	152.898536552	-27.0791357371	41	152.897148900	-27.0839752156
17	152.899067439	-27.0796953306	42	152.895897574	-27.0830206255
18	152.899341752	-27.0803515299	43	152.894644393	-27.0829623611
19	152.900325185	-27.0810718538	44	152.893374453	-27.0825677311
20	152.901201210	-27.0825594944	45	152.892667801	-27.0825423500
21	152.902212258	-27.0822466725	46	152.892654574	-27.0829799662
22	152.902661828	-27.0831427809	47	152.891111030	-27.0829310035
23	152.903217902	-27.0843345739	48	152.891119948	-27.0827491239
24	152.904527020	-27.0840800779	49	152.890743053	-27.0826861258
25	152.904734750	-27.0847798569			

1.3 **Locality and property description**

The referral area is located within the property at 100 Stern Road, Bellmere, approximately four kilometres (km) west of Caboolture, and 44 km northwest of Brisbane City, in Queensland (refer to **Figure 1**). Stern Road bounds the western boundary of the property, with cleared rural residential land on all other sides. Bellmere Road is approximately 500 m to the south of the property, and there are a number of other roads within the residential development areas near the property, as well as main roads connecting outer suburbs to Caboolture. There is a 60 m wide cleared power line easement transecting the western portion of the property.

The property is within the **MBRC** jurisdiction and zoned as Emerging Community. It is located within the Caboolture West Master Planned Area, and includes areas designated as Urban Living (where the proposed development footprint is located), and Green Network (the vegetated area surrounding the proposed development footprint). The property is surrounded by large and small lot rural residential and fruit growing properties of which, the majority have been cleared of most native vegetation. Higher density residential developments are approximately 1 km to the east of the site, and approximately 1.7 km to the north. The current and proposed land uses on the properties surrounding the project site have resulted in the clearing of most native vegetation, and consequentially, the surrounding landscape is relatively disturbed.

The entire property is 178 ha, however the referral area is located in the central portion of the property and reflects the development footprint of approximately 48 ha (refer to **Figure 2**). The referral area is largely cleared, representing paddocks with some young Acacia regrowth. There is one small patch (3 ha) of mature native vegetation (not mapped as remnant) in the northern area of the development footprint / referral area. The western extent of the development footprint abuts a 60 m wide cleared power line easement which transects the wider property. The vast majority of land surrounding the site has also been cleared of vegetation for agricultural purposes and /or rural residential development, and is earmarked for development in keeping with planning intent.

This referral pertains to the 48 ha development footprint (i.e. referral area) only, which includes approximately 3 ha of vegetation clearing. Refer to **Figure 1** for the site context and **Figure 2** for the site aerial. **Plan 1** shows the proposed development footprint.

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

The total development footprint is approximately 48 hectares.

1.5 **Street address of the site**

100 Stern Road, Bellmere, Queensland 4510

1.6 **Lot description**

The referral area is contained within one allotment, and covers only part of that allotment:

Lot Number	Tenure	Proponent
Part of Lot 2 on RP185220	Freehold	Bellmere Land Holdings 1 Pty Ltd

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

Moreton Bay Regional Council (contact TBC).

1.8 **Time frame**

The project requires local government approval for a material change of use and reconfiguration of a lot. This approval process will seek approval from relevant Queensland Government authorities, as per the *Sustainable Planning Act 2009* process. It is anticipated that the subdivision works will commence in 2018, with the project life extending until 2025.

1.9	**Alternatives to proposed action**	**X**	**No.** The site is located within the area strategically designated for future development, zoned as Emerging Community under **MBRC** zoning, and within the Caboolture West Local Plan which was designated by the State Government. The site is in an area which will provide efficient and safe access, being located on Stern Road, and near Bellmere Road. As part of the Caboolture West Master Plan, the site will be serviced by other proposed infrastructure which will be developed as the area is developed. Undertaking a different scale action, or in a different location was not considered as it would not be consistent with the intent of the Caboolture West Local Plan. Further, this (or similar) action could not be completed elsewhere unless similar zoning declaration, infrastructure planning, and resource investment had occurred, of which no alternate location exists. Further, 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 by State Government and Local Government as important for future growth. The action will result in a large residential development in an area zoned by the **MBRC** as Emerging Community, and earmarked by the State Government as Urban Living within the Caboolture West Local Plan. Caboolture West was recognised by the State Government as an Identified Growth Area, with potential to accommodate significant growth in the Moreton Bay region in the long-term, and incorporate a range of activities through residential and employment growth in the Moreton Bay Region.

The Caboolture West Master Planned area was declared in February 2012, which signalled the start of a comprehensive planning process to include Caboolture West in the 2016 **MBRC** Planning Scheme. The Master Planned Area covers approximately 6,500 ha of land immediately west of Caboolture and Morayfield. It is bound to the north by the D'Aguilar Highway and in the south by the Caboolture River Road. **MBRC** undertook research and investigation into the opportunity to develop a new community in the Caboolture West study area in 2013, including holding a number of information sessions. An illustrative Master Plan was developed which allowed **MBRC** to present the capability and suitability of the area to accommodate a major new urban community and acted as a guide to more detailed planning. The Local Plan provisions are also subject to review and amendment periodically over time, as required by Queensland planning legislation, and as more detailed neighbourhood level planning is undertaken progressively by **MBRC**. A number of criteria were assessed during scenario planning, including:

- A well planned town;
- Excellent travel choice;
- A healthy environment;
- A prosperous community;
- Housing choice for all budgets;
- Value for money / investment;
- A sense of place - 'Welcome to Caboolture West'; and
- Support for regional agriculture.

The final preferred development scenario for Caboolture West was derived from a medium town option. The Caboolture West Local Plan is incorporated in the recent MBRC Planning Scheme.

The proposed development site for this action is in the eastern portion of the Caboolture West Local Plan area, as can be seen in **Figure 1**. The referral area is located in the central portion of Lot 2 on RP185220, and covers 48 ha of the 178 ha lot. The proposed development will provide approximately 756 new residential lots with dwellings and access roads (refer to **Plan 1**). The majority of the proposed referral area is highly disturbed, and reflects a cleared agricultural paddock with young Acacia regrowth. A small patch (approximately 3 ha) of mature native vegetation exists in the northern portion of the development footprint. This 3 ha area will be removed as a result of the development. The entire property contains approximately 100 ha of mapped remnant vegetation (outside of the referral area), which will be retained with the development. The development does not have encroach into remnant vegetation, and a 20 m buffer area will be established between new residential lots and the edge of the vegetation (see **Plan 1**). The development footprint (and therefore the referral area) is located in the portion of the land that represents the most disturbed area of the site, with the areas of dense vegetation to be retained, allowing for continued provision of ecological habitat and connectivity in the general area. It should also be noted that the majority footprint area is marked as Urban Living under the Caboolture West Local Plan, with the surrounding remnant vegetation is marked as indicative Green Network within the Plan. A small amount of the development footprint may be located within the indicative Green Network mapped area, but site assessment confirmed this area to contain no ecological values of significance. Therefore, it is considered that the proposed development fully meets planning intent for the property.

The area surrounding the property is highly impacted and fragmented. The properties on all sides are cleared rural residential properties, of varying lot size, with some fruit growing properties also neighbouring the site (refer to **Figures 1 and 2**). The surrounding area is earmarked as Rural Living, Urban Living, Town Centre, Enterprise and Employment, and areas of Green Network precincts under the Local Plan. The result of this planning intent is a highly fragmented landscape surrounding the referral site (**Plan 2**). Outside of the Local Plan area, the land is currently used for residential developments (particularly to the north, east, and south) and rural residential to the west and north. As the surrounding land is developed in line with the Local Plan zoning and intent, the clearing of remaining vegetation in the area will occur, and further fragment vegetation to be retained. These developments (while in line with the State and Local Government planning intent for the area) will significantly limit the connectivity and vegetation values remaining in the landscape. Furthermore, the remnant vegetation currently existing on this property, outside of the development footprint, on-site is isolated on most sides by cleared land, cleared power line easements, and roads. The remnant vegetation on this site 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 referred action can be described as:

a) Establishment of a residential development covering 48 ha, and including the clearing of only 3 ha of mature native vegetation, with the remainder of the site consisting of cleared paddocks with young Acacia regrowth;
b) Removal of some Koala food trees within the 3 ha of mature vegetation;
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 residential property by 48 ha, which will potentially increase the number of domestic pets and exotic garden plant species in the area.

It should be noted that a self-assessment against the *EPBC Act Referral Guidelines for the Vulnerable Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)* was previously conducted, with the result of the assessment showing that the action would not constitute a Controlled Action. This self-assessment was provided to the Compliance and Enforcement Branch of the **DotE**, with the conclusion of the Senior Compliance Officer being *that based on the size of the disturbance area and the vegetation composition at the site, the action is unlikely to result in a significant impact to protected matters in the area* (see **Attachment 1**). This referral is being submitted to provide certainty that this proposed action should not be a Controlled Action.

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 in Bellmere, within the **MBRC** jurisdiction, and falls inside the Caboolture West Local Plan area, declared by the State Government in February 2012.

Planning Framework

The proposed development site is located within the **MBRC** Local Government area, in South East Queensland. Accordingly, the project is subject to the provisions of the *Moreton Bay Regional Council Planning Scheme* and the Caboolture West Local Plan, as well as Queensland's *Sustainable Planning Act 2009*. It is zoned as Emerging Community under the Planning Scheme and Urban Living under the Local Plan, therefore 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. Additionally, when the Caboolture West Local Plan was developed by Moreton Bay Regional Council, it included extensive planning and consultation, with State Government agencies. The planning and consultation process incorporated a wide range of issues and considerations including:

- Environmental and ecological values;
- Agriculture and strategic cropping land;
- Housing needs;
- Future employment and business needs;
- Infrastructure requirements (public transport, roads, water, sewerage and stormwater);
- Parks, open space and community uses; and
- Economic and financial impacts.

Input was sought from key stakeholders through the multiple stages throughout the project, and assisted in forming the vision and strategies contained in the Plan. During the process, the community was also kept up to date through periodic updates on the Caboolture West webpage, public information sessions, and Councillor newsletters distributed in the area.

Further, public notification will be conducted as required, as part of the EPBC Referral 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

Moreton Bay (a Ramsar wetland) is located approximately 15 km to the southeast of the Project site.

Nature and extent of likely impact

The proposed action is not expected to have any impacts on Moreton Bay.

The Caboolture River is to the south of the project site, with the closest point being approximately 680 m away (refer to **Figure 1**). The Caboolture River then flows into the Moreton Bay approximately 15.2 km to the southeast of the site. It should be noted that between the project site and the closest point of the Caboolture River, there is cleared rural residential land and Bellmere Road. There are two waterways mapped on the project property, however these are largely outside the development footprint, within remnant vegetation. One road crossing will be required on the southern watercourse, and this will be designed to have minimal impact, and be in accordance with state and local government requirements. These waterways converge on the project site boundary and meander to the east, for over 3 km before flowing into the Caboolture River.

Stringent management measures will be implemented across the development site to ensure any sediment erosion and stormwater runoff from the development is captured and treated before being released into local waterways (refer to **Response 3.3(b)).** Such management measures will also meet quality standards set by the relevant State and Local Government guidelines. It is not expected that the proposed action will impact on water quality within these waterways, nor the Caboolture River.

Additionally, it is considered unlikely that water flowing from the development site will significantly impact upon Moreton Bay. It is noted that before reaching Moreton Bay, the water flowing through the Caboolture River system flows through a heavily developed and urbanised catchment, including through Bellmere and Caboolture areas. In the context of the Caboolture River catchment, it is unlikely that the proposed action will have any notable impacts on water quality in Moreton Bay.

3.1 (d) Listed threatened species and ecological communities

Description

The Protected Matters Search Tool using a two kilometre radius from the centre of 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:

- Two Threatened Ecological Communities (TECs):
  Lowland Rainforest of Subtropical Australia (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;
- Nine listed threatened flora species; and
- Twenty-two 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
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		
Anthochaera phrygia	Regent Honeyeater [82338]	Critically Endangered
Botaurus poiciloptilus	Australasian Bittern [1001]	Endangered
Cyclopsitta diophthalma coxeni	Coxen's Fig-parrot	Endangered
Dasyornis brachypterus	Eastern Bristlebird [533]	Endangered
Erythrotriorchis radiatus	Red Goshawk [942]	Vulnerable
Geophaps scripta scripta	Squatter Pigeon (southern) [64440]	Vulnerable
Lathamus discolor	Swift Parrot [744]	Critically Endangered
Poephila cincta cincta	Black-throated Finch (southern) [64447]	Endangered
Rostratula australis	Australian Painted Snipe [77037]	Endangered
Turnix melanogaster	Black-breasted Button-quail [923]	Vulnerable
Frogs		
Mixophyes iteratus	Giant Barred Frog, Southern Barred Frog	Endangered
Insects		
Phyllodes imperialis smithersi	Pink Underwing Moth	Endangered
Mammals		
Chalinolobus dwyeri	Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable
Dasyurus hallucatus	Northern Quoll [331]	Endangered
Dasyurus maculatus maculatus (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered
Petauroides volans	Greater Glider	Vulnerable
Phascolarctos cinereus	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable
Potorous tridactylus tridactylus	Long-nosed Potoroo (SE mainland)	Vulnerable
Pteropus poliocephalus	Grey-headed Flying-fox [186]	Vulnerable
Plants		

Acacia attenuata	-	Vulnerable
Arthraxon hispidus	Hairy-joint Grass [9338]	Vulnerable
Bosistoa transversa	Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable
Cryptocarya foetida	Stinking Cryptocarya, Stinking Laurel	Vulnerable
Macadamia ternifolia	Small-fruited Queensland Nut, Gympie Nut	Vulnerable
Phaius australis	Lesser Swamp-orchid	Endangered
Phaius bernaysii	Yellow Swamp-orchid	Endangered
Phebalium distans	Mt Berryman Phebalium [81869]	Critically Endangered
Thesium australe	Austral Toadflax, Toadflax [15202]	Vulnerable
Reptiles		
Delma torquata	Collared Delma [1656]	Vulnerable
Furina dunmalli	Dunmall's Snake [59254]	Vulnerable
Saiphos reticulatus	Three-toed Snake-tooth Skink	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 included in Appendix E of the attached Ecological Assessment Report (EAR) (**Attachment 3**). Field surveys were conducted across the development site and within surrounding vegetation in 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 within the referral area. This was primarily due to the combined impacts from:

- The relatively disturbed nature of the referral area, which largely represents cleared paddock with some Acacia regrowth;
- Lack of suitable niche habitat across the site (such as large undisturbed waterbodies, rocky outcrops, and coastal habitats);
- Influences from surrounding rural residential and fruit growing properties, as well as the increasing residential developments within the local area (particularly to the east);
- Fragmentation of the site by major roads and cleared lands on all sides;
- Presence of introduced and weed flora species on-site, and the presence of dogs and dingoes on-site and in the surrounding area; and
- Disturbances caused by historic and existing agricultural grazing practices on the referral site which have resulted in the majority of the proposed development area constituting paddock with patches of young Acacia regrowth, largely devoid of significant vegetation and significant habitat values.

Overall, the assessment identified the potential for Grey-headed Flying-fox (Vulnerable) and the Koala (Vulnerable) to occur on-site due to the availability of potential habitat or food sources when eucalypts are flowering, within the 3 ha of mature native vegetation on the site, and within the surrounding remnant vegetation outside of the referral area, that will not be cleared. 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 *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 February 2016 Senior Ecologists from **Saunders Havill Group** conducted targeted Koala field surveys across the site and in vegetation adjacent to the site, with weather conditions fine and sunny. One main purpose of the survey was to determine the level of Koala usage on and around 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, although no individuals were observed throughout the survey period. Five SAT surveys were conducted as shown by the Field Survey Effort presented in **Plan 3**. One of these was located within the 3 ha of vegetation to be cleared (SAT #4), and one on the edge of the vegetation / development footprint boundary (SAT #5). The remaining three SATs were conducted within the adjacent vegetation, not impacted by the development. As provided in **Table 2**, Koala usage was considered to be "Low" in all locations 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 F** 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 types mapped across the subject site are Kandosols and Sodosols (refer to **response 3.3(c)** and **Attachment 3**)), which have medium chemical fertility and water-holding capacity. Additionally, the presence of low-lying land associated with the 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	6.67	Low
2	13.33	Low
3	3.33	Low
4	10.00	Low
5	6.67	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

The Queensland Koala Habitat Values Map shows a large amount of the entire property to contain Medium Value Bushland Habitat, a small area of Medium Value Rehabilitation Habitat, however the majority of the referral area (the development footprint) is mapped as Generally Not Suitable habitat (see **Attachment 3 – Figure 5**). Only a small area (the 3 ha of mature native vegetation to be cleared) in the north of the development footprint is mapped as Medium Value Bushland Habitat. This 3 ha patch of vegetation is mapped as Category X non-remnant vegetation under the *Vegetation Management Act 1999* (VMA), as is the remainder of the development footprint (refer to **Attachment 3 – Figure 3**). Consequently, there is no area of the proposed development footprint mapped as providing 'essential habitat' for the Koala or any other listed species.

Site survey included a flora assessment of the vegetation within the referral area, and the adjoining vegetation. Full details are contained within **Attachment 3**. The dominant flora species recorded within the cleared paddock area included *Acacia leiocalyx* (Early Flowering Black Wattle) as well as *Acacia concurrens* (Black Wattle), *Acacia disparrima* (Hickory Wattle), and *Lophostemon suaveolens* (Swamp Box). Based on previous field assessments, the February 2016 field assessment, and a review of aerial photography, this regrowth is estimated to be approximately three years in growth. The 3 ha northern portion of the development footprint is mapped as non-remnant under the VMA, but on-site was considered to contain regrowth vegetation typical of the Endangered Regional Ecosystem (RE) 12.5.3. The canopy species within patches on-site of this RE were dominated by *Eucalyptus racemosa* (Scribbly Gum) with other canopy species including *Corymbia intermedia* (Pink Bloodwood), *Eucalyptus microcorys* (Tallowwood), and *Angophora leiocarpa* (Smooth Bark Apple). This patch of mapped non-remnant vegetation was noted to contain a number of well-established *Eucalyptus microcorys* (Tallowwood), *Corymbia intermedia* (Pink Bloodwood), and *Lophostemon confertus* (Brush Box) specimens.

A number of species identified in the **Australian Koala Foundation's** *National Koala Tree Protection List* for the Moreton Bay Local Government area (shown below) were recorded within the 3 ha patch of mature vegetation to be cleared as part of the project. Species shown in bold text are considered to be primary Koala Food Trees while the other listed species are Secondary Koala Food Trees. Species recorded in this area included two eucalypt species considered to be Koala Food Trees – one primary species (*E. microcorys*), and the one secondary species (*E. racemosa*). Refer to **Attachment 3 – Section 4.4** for further detail on the vegetation on-site. 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 3 ha patch of vegetation is adjacent to a larger patch of approximately 100 ha of mapped remnant vegetation, which was recorded to contain potential Koala Food Trees, including two primary species (*E. microcorys* and *E. tereticornis*) and three secondary species (*E. racemosa*, *E. siderophloia*, and *E. propinqua*). It is not considered that this larger patch contained more than 50% of primary food tree species. Further, none of the adjacent remnant vegetation is to be cleared as part of this action, with the area to be cleared consisting of only 3 ha of vegetation. It is considered that Koala activity within the area to be cleared, as well as within the broader vegetation existing on the property, 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
MORETON BAY REGIONAL	2-100	***E. bancroftii***	**Orange Gum**	infertile, sandy lowland sites
MORETON BAY REGIONAL	2-800	*E. biturbinata*	Grey Gum	slopes on soils of medium fertility, annual rainfall>1000 mm
MORETON BAY REGIONAL	2-1000	*E. crebra*	Narrow-leaved red ironbark, Ironbark, Narrow-leaved ironbark	well-drained shallower or sandy/sandy clay soils of medium fertility, >550 mm rainfall
MORETON BAY REGIONAL	2-800	*E. exserta*	Queensland peppermint, Yellow messmate, Messmate, Bendo	sandy drier soils on hills and stony rises
MORETON BAY REGIONAL	2-1000	*E. grandis*	Flooded Gum, Rose Gum	moist, fertile, well-drained, deep, loamy soils of alluvial or volcanic origin, 725-3500 mm
MORETON BAY REGIONAL	2-850	*E. major*	Grey Gum	wet coastal forests on soils of low to medium fertility
MORETON BAY REGIONAL	2-900	*E. melanophloia*	Silver-leaved ironbark	moderately fertile silts, loams, sandy clays on foothills
MORETON BAY REGIONAL	2-950	***E. microcorys***	**Tallowwood**	on slopes in deeper moderate to fertile soils, well-drained but moist
MORETON BAY REGIONAL	2-1050	*E. moluccana*	Coastal Grey Box, Grey box, Gum-topped box	loam soils of moderate to high fertility on coastal plains and ranges, tolerates saline soils
MORETON BAY REGIONAL	2-1000	*E. planchoniana*	Bastard Tallowwood, Needlebark stringybark	dry sclerophyll forest or woodland on sandy soils or coastal sand
MORETON BAY REGIONAL	2-850	*E. propinqua*	Small-fruited Grey Gum	wet coastal forest on soils of low to medium fertility. Drought and frost tolerant
MORETON BAY REGIONAL	2-1050	*E. racemosa ssp. racemosa*	Scribbly Gum	shallow infertile sandy soil, coastal areas or over sandstone
MORETON BAY REGIONAL	2-700	*E. resinifera ssp. hemilampra*	Red mahogany	sandy or well drained fertile soils, Drought and frost tolerant
MORETON BAY REGIONAL	2-200	***E. robusta***	**Swamp Mahogany**	swampy, seasonally waterlogged soils, very moist fertile soils, heavy clay, sandy clay, alluvial sand soils
MORETON BAY REGIONAL	2-200	*E. seeana*	Narrow-leaved Red Gum	poorly drained shallow soils, swampy sandy soils
MORETON BAY REGIONAL	2-700	*E. siderophloia*	Ironbark, Broken Back Ironbark	wet forest on soils of moderate fertility
MORETON BAY REGIONAL	2-800	***E. tereticornis ssp. tereticornis***	**Forest red gum, Blue gum, Red irongum**	alluvial soils, 600-2500 mm, tolerates salt-laden coastal winds, tolerates saline soils, medium-heavy clays, does not tolerate waterlogged soils
MORETON BAY REGIONAL	2-1100	*E. tindaliae*	Tindal's Stringbark	poorer soils in high rainfall areas, often derived from granite

Bolded entries indicate primary tree species

Weeds and Disturbance

Due to past land clearing and agricultural practices, the referral site and surrounding vegetation contained a high number of introduced and weed species (54 species), including 11 declared weed species under the Queensland *Land Protection (Pest and Stock Route Management) Act 2002* (LPA). These declared weed species included four Class 2 weeds identified as *Ambrosia artemisiifolia* (Annual Ragweed), *Baccharis halimifolia* (Groundsel Bush), *Senecio madagascariensis* (Fireweed), and *Sporobolus africanus* (Rat's Tail Grass). The other seven declared pests are Class 3 weeds and identified as *Asparagus africanus* (Climbing Asparagus Fern), *Celtis sinensis* (Chinese Elm), *Cinnamomum camphora* (Camphor Laurel), *Lantana camara* (Lantana), and *Lantana montevidensis* (Creeping Lantana), *Schinus terebinthifolius* (Broadleaf Pepper Tree), and *Sphagneticola trilobata* (Singapore Daisy).

The majority of the introduced species were located within the shrub and ground layers, with some scattered woody weeds such as Chinese Elm and Camphor Laurel in the area mapped as RE 12.3.11. Although *Lantana camara* was recorded as the dominant weed species, major infestations of this species were observed along the southern portion of the site within the mapped remnant areas. Other disturbances on-site included significant vegetation clearing for pastoral purposes (refer to **Figure 2**), Stern Road along the western property boundary, a 60 m cleared power line easement through the western portion of the side, adjoining the development footprint, 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:

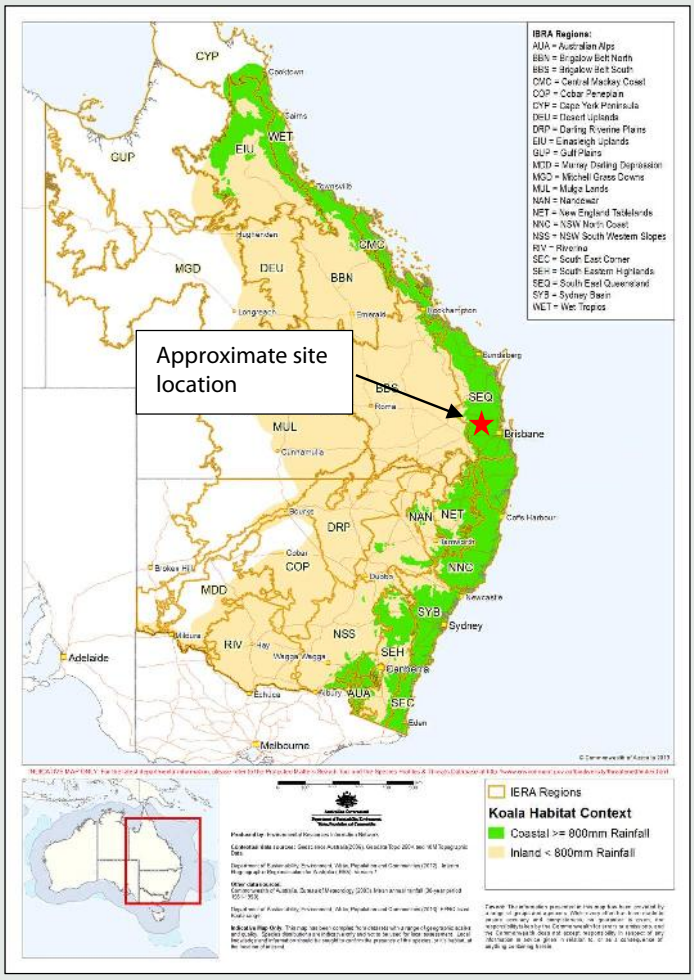
- No Koalas were observed within the referral area, or in the adjacent remnant vegetation;
- SAT surveys suggest Low usage across the entire investigation area (including in the remnant vegetation adjacent to the development site);
- Flora assessment did not return a high proportion of primary Koala food trees considered suitable for Koala persistence;
- Overall, the development site was observed to be significantly disturbed, as a result of historical vegetation clearing, disturbance from 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 Stern 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 referral site contains 3 ha of mature native vegetation, and 45 ha of cleared grazing land with some patches of Acacia regrowth (with no Eucalypt species recorded). The area of mature vegetation to be cleared reflects RE 12.5.3, which has the short description: *Eucalyptus racemosa subsp. racemosa* woodland on remnant Tertiary surfaces. This RE is not considered to be Essential Habitat for the Koala under the Queensland VMA (refer to **Attachment 3 - Figure 4**). This patch of vegetation had canopy species dominated by *Eucalyptus racemosa* (Scribbly Gum), *Eucalyptus microcorys* (Tallowwood), *Corymbia intermedia* (Pink Bloodwood), *Eucalyptus microcorys* (Tallowwood), *Angophora leiocarpa* (Smooth Bark Apple), and *Lophostemon confertus* (Brush Box). Of these canopy species, only one primary food tree species was present (*E. microcorys*), with the remaining species being secondary food tree species (i.e. *E. racemosa*) or non-Koala food tree species.

Assessments

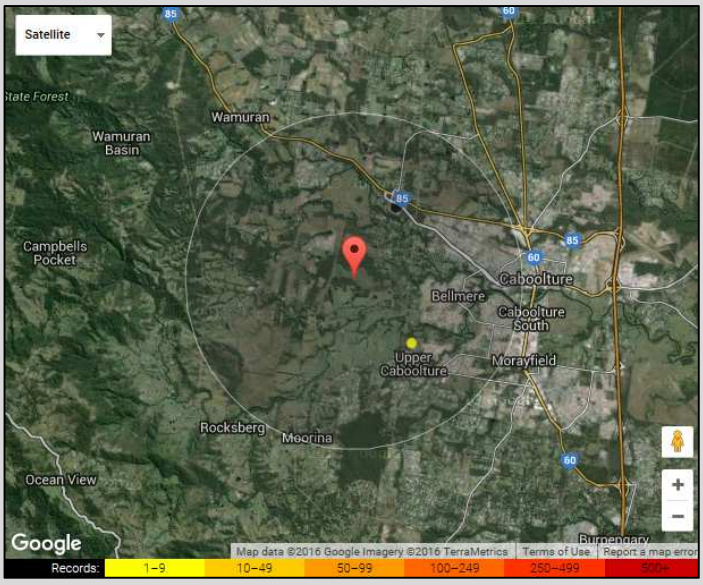
In accordance with the EPBC Act Referral Guidelines for the Vulnerable Koala, any habitat which receives a score of **5 or more** using the Koala Habitat Assessment Tool is considered to be critical habitat. The proposed development site contains 3 ha of

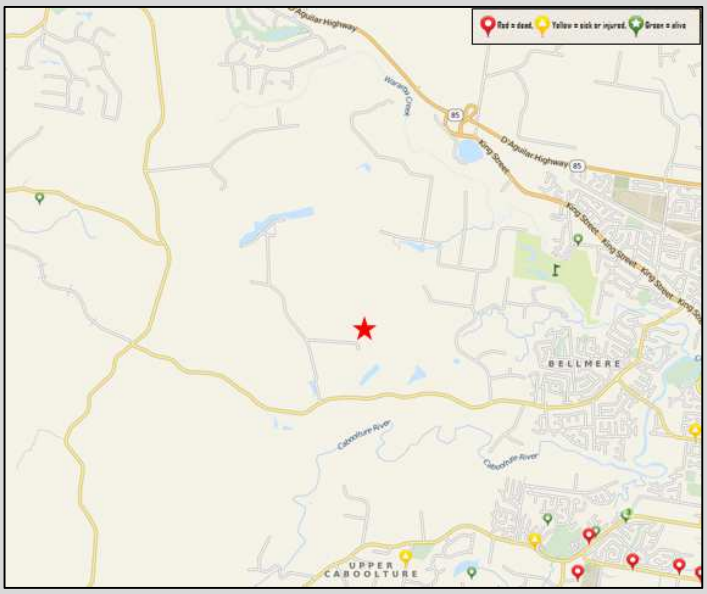
vegetation which has scored a habitat assessment score of 5 based on the calculations and descriptions in **Table 4**. It should be noted that the majority of the development site is located in the central portion of the site which consists of paddocks and Acacia regrowth (refer to **Figure 2**). Only 3 ha of vegetation including the score 5 critical habitat is proposed to be cleared as part of the project.

Table 4: Koala Habitat Assessment Tool

Attribute	Score	Comment
Koala occurrence	**+2 (High)**	Desktop A Protected Matters Search (PMST) of a 2 km radius of the subject site identifies the Koala as known to occur within the vicinity of this area (**Attachment 2**). A Wildlife Online search report using a 5 km radius found 291 records of the Koala, however only eight records of the Koala were found using a 2 km radius search (**Attachment 3 –Appendix C**). The dates of these sightings are unknown. Additionally, the site is located adjacent to the Pine Rivers area, which is one of the two areas that Species Profile and Threats Database (SPRAT) population estimates of the Koala have focused on.
		On-ground A habitat tree survey (including assessment for Koala usage) was carried out over the entire property on 18 February 2016. Seven search transects for Koala scats were conducted within the vegetation within and adjacent to the proposed development area (refer to **Plan 1**) and resulted in the completion of five Spot Assessment Techniques (SATs) surveys. 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, all sites where scats were found showed 'Low Use' (< 22.5%), indicating "Low" Koala use of the vegetation on the property (refer to **Table 2** for the summary of SAT results and **Attachment 3 – EAR** for further details on site surveys). Only one SAT (Sat 4) was conducted within the mature vegetation to be cleared as part of the development, and this resulted in a usage of 10%. All other SATs were conducted in surrounding vegetation. No Koalas were observed on or surrounding the site. Previous surveys conducted by SHG in 2013 obtained similar results – three trees observed on-site were recorded as having scats under, and the results of all three SATs indicated "Low" Koala use of the site. **As there is evidence of one or more Koalas on-site within the last two years, the 'Koala Occurrence' attribute has been given a score of +2 (High).**
Vegetation composition	**+2 (High)**	Desktop The Queensland Government Regulated Vegetation Supporting Map (Regional Ecosystem V8.0) identifies Category X non-remnant vegetation to occur in the proposed development area (refer to **Attachment 3 – Figure 3**). As a result, the proposed development will not require the clearing of any vegetation mapped under the VMA. Category B remnant vegetation is mapped on the property, surrounding the proposed development area. The Of Concern Regional Ecosystem (RE) 12.3.11 (*Eucalyptus tereticornis* +/- *Eucalyptus siderophloia*, *Corymbia intermedia* open forest on alluvial plains usually near coast) is mapped across the property, largely associated with the mapped waterways. There is a tract of the RE crossing through east-west in the northern portion of the property, as well as throughout the western portion, west of the power line easement. There is also a community of this RE in the southwest portion of the property, and a very small tract in the southeast. The northern and western mapped RE polygons are mapped as Essential Habitat for the Koala (refer to **Attachment 3 – Figures 3 and 4**). The Endangered RE 12.5.3 - *Eucalyptus racemosa* subsp. *racemosa* woodland on remnant tertiary surfaces is mapped around the RE 12.3.11 polygons, and essentially

			covers the majority of the northern and western portions of the property, and a polygon mapped around the 12.3.11 in the south west area. Some areas of this RE is also mapped as Essential Habitat for the Koala. Two small polygons of the Endangered RE 12.5.6 are mapped in the south east of the property. This RE is described as *Eucalyptus siderophloia*, *E. propinqua*, *E. microcorys* and/or *E. pilularis* open forest on remnant tertiary surfaces. Of the dominant species in the REs listed above, the Australian Koala Foundation classifies *E. tereticornis* and *E. microcorys* as Primary Food Tree Species, and *E. racemosa*, *E. siderophloia*, and *E. propinqua* as Secondary Koala Food Trees within the Moreton Bay Regional Council area.
			<u>On-ground</u> The property contains known Koala Food Trees within the surrounding remnant and regrowth woodland areas. Primary and Secondary Koala Food Trees as classified by the Australian Koala Foundation for the **MBRC** area were identified on the property, in the remnant vegetation surrounding the development footprint, and some within the 3 ha of native mature vegetation to be cleared in the north of the development footprint (refer to **Plan 1**). These species include: Primary - *E. microcorys* and Secondary - *E. racemosa*. Refer to **Attachment 3** for full species list. The majority of the development footprint is located on the non-remnant area in the centre of the site which contains Acacia regrowth, and was not recorded to contain any Eucalypt species. **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).**
	Habitat connectivity	**0 (Low)**	The surrounding land uses and location of roads in the vicinity of the site significantly reduce the availability of connected habitat for the Koala and act as physical barriers for safe Koala movement (see **aerial** below and **Figures 1 and 2**). The majority of the land both immediately surrounding the site, as well as in the broader landscape, has been extensively cleared. A 60 m wide cleared power line easement fragments the vegetation on-site from the vegetation located in the western portion of the site. Stern Road bounds the western side, with a large cleared property used for growing berries and fruit located along the north western boundary. Land on all other sides of the property has been extensively cleared and regularly maintained as paddock for large rural residential properties and some cropping land. Bellmere Road is located approximately 500 m south of the property, with cleared land between the subject site and the road. To the east of the subject site there are also a number of roads providing access to the surrounding properties. The surrounding cleared lands and locations of roads result in deterrents and physical barriers to the movement of Koalas. The vegetation that does exist on the property is not connected to any other vegetation that would be of value to the Koala, and any vegetation it could be considered connected to, does not form an area of 300 ha or above. Additionally, the surrounding area is all within the Caboolture West Local Plan which is a master plan for the development of the area, which will result in clearing of vegetation and urban development, further inhibiting any habitat connectivity. The vegetation surrounding the proposed development site may provide some low-range habitat, however there is a lack of vegetation in the broader landscape. As such, it is expected that the site provides very limited connectivity value for Koala dispersal and persistence in the broader landscape.

		 **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 proposed site. Such threats include vehicle strikes and dog attacks, associated with the location of nearby main roads, presence of dogs already utilising the site and surrounds, and the increasing residential development in adjacent areas. These threats will increase as the area is further developed, as per planning intent, and in the Caboolture West Local Plan. The **Atlas of Living Australia** map of Koala records (below) shows one record of a Koala observation within a 5 km radius of the site, dated 2014. **Koala Tracker** is a crowd sourced national Koala sighting record. The Koala Tracker map (below) shows sightings of Koala in the broader landscape. The closest sighting of healthy Koalas is approximately 2 km to the east, followed by one approximately 4 km to the west. There are multiple sightings to the south and southeast, ranging from approximately 2.5 – 5 km from the site, which include a mix of healthy, sick and dead by disease, and injured and dead by car, with one dead by dog recorded. **Atlas of Living Australia Map** 

			Koala Tracker Map  On-ground The increasing level of vehicle use in the surrounding area and the expansion of residential development, bringing with it an increased number of dogs and cars, present significant threats of injury and death to Koalas. As residential development in the area (particularly through the Caboolture West Local Plan) increases around the site, these threats are likely to increase in scale and intensity. Within 5 km of the site there have been at least four Koala injuries and deaths recorded due to vehicle strike, and six sick or dead Koalas recorded due to disease. Additionally, there is one record of a Koala death by dog attack. It can be inferred that the impacts of vehicle strike, disease, and dog attack are likely to continue to cause death and injury to Koalas. Further, evidence of dogs and dingoes on-site were recorded during field works, therefore these threats currently exist. **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 Stern Road site is not considered 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 subpopulation, 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. The development site retains little opportunity to achieve the interim recovery objectives for coastal areas, which is based primarily on maintaining large areas of bushland and connectivity. The site is zoned under the **MBRC** Planning Scheme as Emerging Community, and falls within the Caboolture West Local Plan which aims for a

		population of 68,700, and 26,900 dwellings within a 40 year timeframe. As such, the site, along with its immediate surrounds, is slated for development and so not likely to achieve recovery objectives. The subject site is mapped as Urban living which is "intended to be developed as a series of next generation neighbourhoods, which are comprised of a mix of residential development types including detached dwellings on a variety of lot sizes, multiple residential dwellings and other residential and live work opportunities." The properties to the west of the site are mapped as Town Centre, with the majority of the remaining surrounding land mapped as Urban Living or Rural Living with some Enterprise and Employment zoned to the north. It should be noted that the portion of the property which is heavily vegetated is located within the indicative Green Network under the Local Plan and is not being cleared as part of this development. This area will continue to provide habitat for the Koala if they are present on-site. As described above, the majority of the land immediately surrounding the property, as well as in the broader landscape, has been extensively cleared. The property also has a 60 m wide cleared power line easement which fragments the majority of vegetation on the property from the vegetation located in the western portion. Land on all sides of the property has been cleared and regularly maintained in most parts as paddock for large and small rural residential properties. There are roads on all sides of the property - the south western side is bound by Stern Road, Bellmere Road is located approximately 500 m south of the property, and there are a number of roads to the east of the site. The cleared land and current land use, combined with the location of roads surrounding the subject property has resulted in the fragmentation of the vegetation on the property from any other vegetation, and a lack of connectivity. This fragmentation will increase with future development. In addition, the regional Koala population is not considered to be genetically diverse from other SEQ Koala populations, and instances of sickness and death are described above indicating the local population is not free of disease. During the site visit no Koalas were observed, including no observation of female Koalas or breeding on the property. Overall, the increasing fragmentation of the property to surrounding habitat areas and the lack of safe Koala movement opportunities make it unlikely that the property and the proposed development area will aid the Interim Recovery Objectives for the coastal context being achieved. Further, the property and its surrounds has been earmarked for development under the Caboolture West Local Plan. It is noted that the project will not cause further fragmentation of surrounding habitat as it is bound by cleared land and roads on all sides. **Given the habitat present within the development footprint 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).**
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 Primary and Secondary Koala Food Trees.

3. **Are you proposing to clear ≤2 hectares of critical habitat?**
   No. The action requires the clearing of approximately 3 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 < 20 ha of habitat that scored < 8 (approximately 3 ha of score 5 habitat).

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:

   - 3 ha is considered to be a very small area of habitat (<20 ha);
   - Although the proposal requires the clearing of approximately 3 ha of habitat of variable quality, this vegetation is not mapped as remnant vegetation, and 100 ha of remnant vegetation on the property will be retained, and continue to provide Koala food trees;
   - The habitat score of 5 for the site is the lowest-range score for "critical habitat";
   - The area of clearing (3 ha) of habitat score 5 vegetation is much lower than the 100 ha area of score 5 vegetation associated with a significant impact (refer to Figure 2 of guidelines);
   - Only historical evidence of Koala activity in the form of scats was recorded on-site, with no Koalas recorded within 2 km of the site;
   - The mapped watercourses on-site are located within the remnant vegetation which will be largely retained as part of the proposed development. These water features are not expected to be impacted by the proposed development; and
   - The required clearing will not result in fragmentation of a habitat area from a larger habitat area as the vegetation to be cleared is adjacent to the remnant vegetation, and will not fragment the remnant vegetation to be retained. Further, the vegetation on-site is isolated and fragmented from any other remnant vegetation by a cleared 60 m wide power line easement, cleared rural residential lands, and roads on most sides.

Overall, the adversity of impacts that may occur as a result of the proposed development at 100 Stern Road, Bellmere is anticipated to be mimimised due to the very low-range habitat value score of critical habitat on the site, the small total area to be cleared (3 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. Evidence of dingo activity was recorded on-site. The surrounding rural residential properties are likely to have dogs already in the area. By ensuring interaction between dogs and Koalas is mitigated in the new development with appropriate governance and guidance to new home buyers, it is not expected that dog attacks on Koalas will increase as a result of the development. **No residual impacts are identified.**
Vehicle Strike
It is likely that vehicle activity in the area will increase as a result of the proposed development. Given the site is surrounded by roads and various forms of development (including commercial growers, rural and rural residential properties), and no Koalas were observed on-site, 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 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. Koala disease has been recorded near the site (in sick and dead Koalas). The project is unlikely to cause pressure on a local Koala population (noting that no Koalas have been seen on-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 development will restrict Koala movement through the central portion of the property, it is arguable that this will result in impacts to dispersal given the existing barriers to Koala movement surrounding the subject property, and the lack of vegetation connectivity. The property is currently largely fragmented from other vegetation due to extensive cleared lands in the area. There are also a number of roads and cleared power line easements which further fragment the property from any surrounding habitat. Additionally, the property is located within the Caboolture West Local Plan area which has urban development planned all around the property. As such, the impacts from potential barriers to dispersal within the development area are considered to be minimal. Finally, the remnant vegetation surrounding the development site is where the potential Koala food trees and evidence of Koalas was observed – of which none of this is being impacted or cleared. This area will retain its purpose within the Green Network of the Caboolture West Local Plan. **No residual impacts are identified.**
Hydrological change
The increase in hardstand areas across the site has the potential to affect site hydrology. Management plans will be implemented to address the requirements of State and Local government guidelines to ensure that impacts are minimised. As no development will be occurring in the vegetated areas on the outer portions of the site (refer to **Plan 1**), it is unlikely that the hydrology of vegetated areas on-site will be adversely affected. Further, any development within any mapped waterways or drainage lines, will be designed to minimise impacts upon the waterways, and will meet all state and local government requirements. Further any impacts are likely to be restricted to overland flow, which will be appropriately managed and mitigation through State and Local Governmental requirements. As such, 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.	While the referral site does contain some habitat assessed to be critical habitat for the Koala, the potential impact area is approximately 3 hectares of habitat with a score of 5, which is the lowest range score on the spectrum. The surrounding remnant vegetation containing potential Koala habitat will be retained with the project. Of relevance, the proposed location for the referred action is within the Caboolture West Local Plan, which means that the site will become more fragmented from the surrounding landscape due to current and future urban development. In addition, field assessments failed to locate the Koala on-site (despite targeted searches), with only evidence of Low Koala usage recorded in the form of scats. Available databases did not have records of the Koala being sighted within 2 km of the site, and the site is isolated from other vegetation. As such, Koalas that might utilise the site would be considered transient and more likely to inhabit more optimal habitat in the broader landscape. Further, if Koalas are present as visitors to the site, the retention of 100 ha of remnant vegetation will continue to provide habitat on the property. 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.	**No significant impact likely**
2. Reduce the area of occupancy of an important population.	An important population is not considered present on the subject site for the following reasons: ▪ No Koalas were recorded on-site, or immediately adjacent to the site (only evidence of their activity was recorded) ▪ The site contains critical habitat scored as the lowest-range quality ▪ The vegetation on the site is severely fragmented by cleared rural residential and fruit growing lands and roads on all sides, and encroaching development in the wider landscape ▪ Koala records in the vicinity of the site include specimens carrying disease Further, the majority (100 ha) of vegetation on-site is mapped as remnant vegetation and is to be retained with the development. This is also part of the Caboolture West Local Plan Green Network and will facilitate continued connectivity around the development area. As such, the proposal is not considered to reduce the area of occupancy of an important population.	**No significant impact likely**
3. Fragment an existing important population into two or more populations.	The action is proposed to occur on a site which is already significantly fragmented from surrounding habitat (**Plan 2**). The majority of vegetation on the subject site will be retained with the proposed development. Surrounding properties are largely cleared rural residential properties, without connectivity to other vegetation. Roads are also present around the subject site. At best, the site provides disjointed vegetation with limited connectivity value due to the adjacent roads and cleared lands. 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 was recorded on-site. Regardless, it is anticipated that the retention of the remnant vegetation surrounding the development footprint will maintain current connectivity values for the site and mitigate further potential fragmentation.	**No significant impact likely**
4. Adversely affect habitat critical to the survival of a species.	While the proposed action results in the removal of 3 ha of potential Koala habitat, this habitat is subject to edge effects from adjacent cleared land. The retention of the 100 ha of remnant vegetation on the property will mitigate any impacts from the clearing of 3 ha. Further, the habitat to be cleared is not considered to be unique or of special value (refer to **Attachment 3**). Given the disturbed nature of the development site and zoning as Urban Living within the Caboolture West Local Plan, the habitat on-site is not considered of importance to the interim recovery objectives for the Koala. Although it is acknowledged that 3 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 surrounding the development footprint, it is considered that the extent of potential loss will not adversely affect the survival of the species.	**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, with no individuals 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 any clearing of the 100 ha of remnant vegetation on the site, 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 the development site was not recorded to contain any special or unique values, with the development footprint occurring in an area with Acacia regrowth estimated to be approximately 3 years old, and 3 ha of more mature native vegetation. The removal of this 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 in the broader landscape, and the 100 ha of remnant vegetation on the subject property, surrounding the development footprint. Individuals utilising the proposed development site are considered to be transient and not part of an important population. Further, the retention of the remnant vegetation on-site 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, including dogs and dingoes being observed on-site during fieldworks. 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. Evidence of invasive *Lantana camara* (a recognised hindrance to Koala dispersal) is present on-site. 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), the small amount of vegetation to be cleared for the development, 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 development site and within adjacent vegetation, and resulted in no Koala observations on, or surrounding, the referral area. In addition, five SAT transects (and an additional two meanders, resulting in no scats found) were performed and found Low Koala usage levels for the site and adjacent vegetation (refer to **Table 2**). This also reflects the results of Koala surveys previously conducted on the site. These results suggest that the site has a low usage by Koalas, corresponding with the isolated and fragmented nature of the vegetation available on-site. Flora assessment 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 within the 3 ha area of mature vegetation on the development site, and within vegetation adjacent to the development site. The 3 ha of critical habitat on the referral 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 3 ha of score 5 critical habitat, as defined by the koala referral guidelines. These factors are summarised as:

- Although the proposal covers approximately 48 ha of land, the majority of this is cleared paddock, with some young Acacia regrowth. The development only requires the clearing of approximately 3 ha of habitat of variable quality (see **Plan 4** and **Attachment 3** for data), and the 100 ha of remnant vegetation surrounding the development footprint will be retained;
- 3 ha is considered a very small area of clearing (<20 ha);
- The habitat score of 5 for the site is the lowest possible score for "critical habitat";
- The area of clearing (3 ha) of habitat score 5 vegetation is much lower than the 100 ha area of score 5 vegetation associated with a significant impact (refer to Figure 2 of guidelines);
- The surrounding vegetated area on the property is not proposed to be developed as part of this action (refer to **Plans 1 and 4**). These areas will continue to provide ecological value currently existing on-site, and connectivity values throughout the landscape and ensure long-term habitat viability should Koalas be present;
- No Koalas were observed on-site or in vegetation adjacent, only historical evidence of Koala activity in the form of scats was recorded;
- The two mapped watercourses on the property are largely outside of the development footprint and are not expected to be impacted by the development (see **Plan 1**);
- As vegetation on the property is largely isolated from any other vegetation due cleared lands and roads, and 100 ha of remnant vegetation on the property will be retained, the clearing of the 3 ha of vegetation within the development footprint 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.

Further, as mentioned in Section 2.1 of this referral, a self-assessment against the *EPBC Act Referral Guidelines for the Vulnerable Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory*) was conducted, with the result of the assessment showing that the action would not constitute a Controlled Action. This self-assessment was provided to the Compliance and Enforcement Branch of the DotE, to which the Compliance Officer concluded *that based on the size of the disturbance area and the vegetation composition at the site, the action is unlikely to result in a significant impact to protected matters in the area* (see **Attachment 1**).

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. It is known to forage within a variety of habitats as each resource does not consistently produce food throughout the entire year. The closest known roosts to the subject site are approximately 2 km directly east of the subject site, one along the Wararba Creek at Caboolture and one off Colburn Way, Bellmere. No roosts were observed on the site, or in immediate vicinity.

Just over half the subject property is mapped as containing Endangered and Of Concern remnant vegetation (approximately 100 ha), with no mapped remnant vegetation occurring within the referral area / development footprint. The Grey-headed Flying-fox was not recorded during site surveys and the site habitat characteristics are considered to provide marginal foraging resources for this species, with remnant vegetation patches dominated by *Eucalyptus acmenoides* (White Mahogany) as well as *Corymbia intermedia* (Pink Bloodwood), *Eucalyptus siderophloia* (Grey Ironbark), *Angophora leiocarpa* (Smooth Bark Apple), and scattered *Lophostemon suaveolens* (Swamp Box) food trees. There is the potential for the Grey-headed Flying-fox to utilise vegetation within the property boundaries at various times throughout the year when these species flower.

The proposed development will require clearing of approximately 3 ha of mature native vegetation that is mapped as non-remnant, and an area of Acacia regrowth. The mapped remnant vegetation on the property will not be cleared or impacted by the proposed development, therefore will still provide foraging habitat for the Grey-headed Flying-fox. Additionally, the abundance of winter flowering resources in the broader landscape suggests the site habitat which will be cleared represents only

a small proportion of those resources and it is considered unlikely that Grey-headed Flying-fox individuals would be exclusively reliant on the resources supported by the subject site or the adjacent vegetation.

The habitat characteristics surrounding the referral area are considered to provide only marginal foraging resources for this species, as follows:

- Remnant vegetation patches on the property are dominated by *Eucalyptus acmenoides* (White Mahogany) as well as *Corymbia intermedia* (Pink Bloodwood), *Eucalyptus siderophloia* (Grey Ironbark), *Angophora leiocarpa* (Smooth Bark Apple), and scattered *Lophostemon suaveolens* (Swamp Box) food trees scattered throughout.

- It is considered likely that foraging by *Pteropus poliocephalus* (Grey-headed Flying Fox) could occur on the site at various times throughout the year, depending on flowering. The dominant flora species observed throughout the property (mainly within remnant to be retained) are shown below with the period that the species is expected to flower:

  Angophora leiocarpa (Smooth Bark Apple) – December to January
  Corymbia intermedia (Pink Bloodwood) – December to May
  Eucalyptus acmenoides (White Mahogany) – September to December
  Eucalyptus siderophloia (Grey Ironbark) – June to September
  Lophostemon suaveolens (Swamp Box) – September to February

- There is an abundance of winter flowering resources in the broader landscape, including within remnant vegetation immediately surrounding the development site, which would suggest that the 3 ha of habitat provided within the vegetation to be cleared for the development 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 and adjacent vegetation 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 site does contain potential foraging habitat for the Grey-headed Flying-fox, no individuals or roost camps were seen on or adjoining 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 eucalypts. Although Grey-headed Flying-fox have potential to visit the site when foraging, their recognised nightly commuting distance spans up to 20 km and so includes a relatively vast area of suitable habitat within the surrounding landscape. The site is not considered to support an	**No significant impact likely**

	important population of the species and given the low amount of vegetation clearing proposed (and the adjacent 100 ha of remnant vegetation to be retained), the proposed action is considered unlikely to lead to a long term decrease in the size of any local Grey-headed Flying-fox populations.	
2. Reduce the area of occupancy of an important population.	No roost camps were observed across the site, or within adjacent vegetation. While the proposed action will remove some potential foraging habitat, given the abundant availability of eucalypts on the remainder of the property and in the surrounding landscape and the greater region, the development proposal is unlikely to have a significant impact on the area of occupancy 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. 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 results in the removal of a potential foraging habitat, this area of clearing is only expected to be approximately 3 ha, with 100 ha of remnant vegetation adjacent to the site, on the broader property, not being cleared. Further, this habitat to be cleared 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 majority of the property (surrounding the central portion) will be retained and will maintain foraging resources post development. Given its relatively isolated and fragmented nature, potential foraging habitat to be cleared is not considered to be critical habitat for Grey-headed Flying-fox.	**No significant impact likely**
5. Disrupt the breeding cycle of an important population.	The 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. As no roosting camps were observed on or adjoining the site, 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. Its removal is unlikely to have a significant impact on the availability of habitat throughout the broader landscape, given the low amount to be cleared, and the vast quantity and availability of eucalypts in the surrounding area.	**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.	**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 species has specifically targeted broad scale culling. In addition, conservation efforts 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 roost site and 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 within the retained remnant vegetation on the property, and in the surrounding landscape, which would likely mitigate any potential negligible impact on Grey-headed Flying-fox due to the clearing of non-remnant native vegetation.

Nature and extent of likely impact

Other than the evidence of Koala activity (in the form of scats) observed, no other EPBC Act listed threated species were recorded within the referral area, or in adjacent areas. As stated above, all remnant vegetation mapped on the property surrounding the development area will be retained, and only 3 ha of mature (non-remnant) vegetation on the development site, and some young Acacia regrowth will be cleared. It is considered that the abundance of suitable foraging habitat within the 100 ha of remnant vegetation to be retained on the surrounding property, as well as that within in the broader landscape indicates that the retention of this vegetation would mitigate any potential negligible impact on these species, should they visit the site. It should also be noted that this surrounding remnant vegetation is indicatively mapped within the Green Network under the Caboolture West Local Plan.

Field surveys conducted across the investigation area were targeted for the Koala, as per the EPBC Act guidelines, and resulted in no observations of the Koala within the referral area, or within the remnant vegetation adjacent to the referral area. In addition, five SAT transects were conducted, with all SATs resulting in Low usage by the Koala. An additional two meanders did not locate any scats. Of the five SATs, one was conducted within the mature vegetation to be cleared for the project, and four were within adjoining vegetation. The majority of the development footprint is located on cleared paddock area with Acacia regrowth, estimated to be about three years old, and no eucalypt species. The SAT results suggest that the entire property (including the remnant vegetation outside of the development footprint which is to be retained) has low usage by Koalas, reflecting the fragmented nature of the site, the isolated vegetation, and the lack of state Koala mapping on the whole property. Flora surveys found that the site is generally dominated by species that are not identified as Koala Food trees, however, with low proportions of primary and secondary Koala food trees present. An assessment of critical habitat (3 ha) on the development 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 3 ha 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 on and around the site (during and after construction) which may pose potential threats to Koalas if they are present.

As discussed above, a number of factors diminish the adversity of impacts caused by the proposed clearing of 3 ha of critical habitat. These factors can be summarised as:

- Although the proposal covers approximately 48 ha of land, the majority of this is cleared paddock, with some young Acacia regrowth. The development only requires the clearing of approximately 3 ha of habitat of variable quality (see **Plan 4** and Attachment 3 for data), and the 100 ha of remnant vegetation surrounding the development footprint will be retained;
- 3 ha is considered a very small area of clearing (<20 ha);
- The habitat score of 5 for the site is the lowest possible score for "critical habitat";
- The area of clearing (3 ha) of habitat score 5 vegetation is much lower than the 100 ha area of score 5 vegetation associated with a significant impact (refer to Figure 2 of guidelines);
- The surrounding vegetated area on the property is not proposed to be developed as part of this action (refer to **Plans 1 and 4**). These areas will continue to provide ecological value currently existing on-site, and connectivity values throughout the landscape and ensure long-term habitat viability should Koalas be present;
- No Koalas were observed on-site or in vegetation adjacent, only historical evidence of Koala activity in the form of scats was recorded;
- The two mapped watercourses on the property are outside of the development footprint and are not expected to be impacted by the development (see **Plan 1**);

- As vegetation on the property is largely isolated from any other vegetation due cleared lands and roads, and 100 ha of remnant vegetation on the property will be retained, the clearing of the 3 ha of vegetation within the development footprint 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, as also concluded by the Compliance and Enforcement Branch of the **DotE**.

3.1 (e) Listed migratory species

Description

An EPBC Act Protected Matters Search Tool with a two kilometre radius identifies 13 listed migratory species as having potential to occur on-site (**Attachment 2**). During the field survey, only one listed migratory species (Rainbow Bee-eater, *Merops ornatus*) was observed. It is considered possible that four migratory species have the potential to utilise the site - Rainbow Bee-eater, Cattle Egret, Great Egret, and White-throated Needle-tail. These species are all common within the local area, often observed throughout eastern and northern Australia. These species are also generalists, and utilise a variety of habitats and locations.

Nature and extent of likely impact

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. Given the low amount of vegetation to be cleared on-site (3 ha), and the retention of the vast quantity (100 ha) of remnant vegetation on the property, it is not expected the proposed action would impact upon these species. Refer to **Attachment 3** for more details.

3.1 (f) Commonwealth marine area

(If the action is <u>in</u> 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 vast majority of the referral site is highly modified due to past land use, including vegetation clearing and agricultural grazing (refer **Response 3.3(g)**). Although historically disturbed (refer to **Attachment 3- Plan 2**), the application area contains a small patch of non-remnant mature vegetation in the northern extent. This vegetation was confirmed on-site to contain species reflective of RE 12.5.3. The remainder of the cleared also contains some patches of Acacia regrowth. Refer to **Attachment 3** for full details.

Despite targeted surveys, no threatened flora species under the EPBC Act or NCA were observed on-site, or in the adjacent vegetation, nor any of the two TECs considered potentially occurring on-site. Due to previous and continuing disturbances on the referral site, it is highly unlikely that the subject site provides the necessary habitat to support listed flora species and TECs.

One hundred and ten flora species were observed on the development site and in the vegetation adjoining it, consisting of 56 native and 54 introduced species (refer to **Attachment 3 – Section 4.4**). Of the introduced flora species, 11 are listed as declared pests under the *Land Protection (Pest and Stock Route Management) Act 2002* (LPA). The majority of the introduced species were recorded within the shrub and ground layers, both in the development site, and in the surrounding vegetation, however some scattered woody weeds such as Chinese Elm and Camphor Laurel were recorded within the remnant RE 12.3.11 areas, adjacent to the development footprint. Although *Lantana camara* was recorded as the dominant weed species, major infestations of this species were observed along the southern portion of the site within the mapped remnant areas.

There are two watercourses mapped on the property, however both are mostly located outside of the development footprint, within the remnant vegetation that is to be retained. One road crossing will be required over the southern watercourse.

Fauna

Forty-four fauna species were observed on the referral site, and on the surrounding area. This consisted of one amphibian, 32 bird, five mammal, and six reptile species – refer to **Attachment 3 – Section 4.5**. No threatened species listed under the EPBC Act or NCA were observed on the referral site, or adjacent. 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.

As the development site is largely cleared grazing lands, with some young regrowth, there was limited fauna habitat in the form of hollows, fallen logs, and nests. It was noted that in the remnant vegetation surrounding the development site, a fallen logs and hollows were present. Given these areas are to be retained with the development, the habitat for native fauna will also be retained.

No Koala sightings were recorded within the proposed development area, or in the areas adjacent. Koala habitat and usage assessments as per EPBC Act Guidelines found Low evidence of Koala usage on the referral site and adjacent to it (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 watercourses are mapped on the property (refer to **Plan 1**). Both watercourses are located in the remnant vegetation that is to be retained with the development. There will be a road crossing over one of the watercourses, however, it will be designed and constructed to have minimal impact on the watercourse, and will meet all government requirements. Any overland flow across the site due to soil saturation during very high rainfall events may run into these drainage features, however stringent management measures will be implemented across the development site to ensure any sediment erosion and stormwater runoff from the development is captured and treated before being released into local waterways (refer to **Response 3.3(b)).** Such management measures will also meet quality standards set by the relevant State and Local Government guidelines. It is not expected that the proposed action will impact on water quality within any waterways. Further, the retention of the remnant vegetation will also allow for natural functions associated with these watercourses, 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 referral site are limited due to previous clearing for grazing purposes. The majority of the development footprint consists of cleared paddock, with some areas of young Acacia growth (estimated to be approximately three years old). A small area of the development footprint (3 ha) will occur in an area of mature vegetation, not mapped as remnant, but with species composition that reflects RE 12.5.3. Refer to **Attachment 3 – Section 4.4** for details.

The Australian Soil Resource Information System (ASRIS) maps the majority of the site as containing Kandosols, with Sodosols mapped in the west of the site. Both soil types are considered a component of Land Zones 3 and 5 Regional Ecosystems which are mapped on-site. Kandosols do not have a strong texture contrast between the A and B horizons. They have a massive or weakly structured B horizon and are not calcareous. Parent material of Kandosols ranges from highly siliceous, siliceous to intermediate in composition. These soils are found in poorly drained sites (yellow and grey Kandosol) with rainfall between 300 mm and 1400 mm and in well-drained sites (brown and red Kandosol) with rainfall between 250 mm and 1400 mm. Generally, Kandosols have low to moderate agricultural potential with moderate chemical fertility and water-holding capacity. Sodosols show strong texture contrast with highly sodic B horizon but they are not highly acidic (pH > 5.5). Parent materials of Sodosols range from highly siliceous, siliceous to intermediate in composition. Sodosols are only found in poorly drained sites with rainfall between 50 mm and 1100 mm. Generally, Sodosols have very low agricultural potential with high sodicity leading to high erodibility, poor structure and low permeability. These soils have low to moderate chemical fertility and can be associated with soil salinity. Refer to **Attachment 3 – Figure 6** and **Section 3.8.**

3.3 (d) Outstanding natural features

No outstanding natural features were identified across the referral site, or within adjoining vegetation. In particular, the property's proximity to surrounding residential development and fruit growing properties, and roads has fragmented it from other habitat areas in the greater landscape, with the inclusion of the area within the Caboolture West Local Plan suggesting further development in the future (refer to **Plan 2**). Previous disturbances in the wider landscape (primarily in the form of residential developments and rural residential development) have significantly reduced ecological value of the site and its immediate surrounds, resulting in no outstanding natural features identified.

3.3 (e) Remnant native vegetation

The referral site contains no remnant native vegetation. Site survey confirmed approximately 3 ha of mature native vegetation present in the northern portion of the development footprint, however this is not mapped as remnant vegetation. Remnant native vegetation adjoins the development footprint; however, none will be cleared as a result of the development. Further the remnant vegetation adjacent to the development site is highly fragmented due to roads and cleared land on all sides. Refer to **Attachment 3** for further detail.

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

The contours on the property vary by approximately 20 metres, varying from around 20 to 40 m above sea level, with a peak in the west of the site, and the central portion of the development site being fairly low lying.

3.3 (g) Current state of the environment

The referral site was found to be largely disturbed as a result of that portion of the property being cleared and used as grazing land. There is some regrowth vegetation (consisting of Acacia species) present, and a small 3 ha patch of mature vegetation not mapped as remnant, as described above.

The entire referral site is classified as Category X non-remnant vegetation, under the VMA (refer **Attachment 3 – Figures 3** and **4**). No vegetation mapped or recorded within the referral area is classified as Endangered or Of Concern Regional Ecosystem, or as Essential Habitat. It should be noted that remnant vegetation adjoining the referral area is mapped as Endangered and Of Concern Regional Ecosystem, with some Essential Habitat, however the proposed action will not result in the clearing of any of this mapped remnant vegetation. The referral site and adjoining vegetation contained 54 introduced flora species, including 11 state declared weed species.

In its current condition, the referral 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 Grey-headed Flying-fox is not considered significant within the broader landscape and habitat availability.

In addition, contextually, the site is located in a fragmented landscape, within the Caboolture West Local Plan area which will result in the continuation of fragmentation in the surrounding area. **Plan 2** shows the site and the Caboolture West Local Plan area, indicating the extent of development proposed for the area.

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. Surrounding land uses are rural residential, fruit growing, 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 Caboolture West Local Plan, and **MBRC** zoning of Emerging Community.

4 Environmental Outcomes

The proposed action pertaining to a residential development on Stern Road, Bellmere will result in the removal of some Koala habitat trees within a 3 ha area of mature vegetation, in order to establish the development. As highlighted throughout this referral, the vast majority of the development is located in an area already cleared of vegetation, for grazing purposes, with areas of young Acacia regrowth (see **Figure 2**). Surrounding the development site (and the referral area) is a large amount (100 ha) of mapped remnant vegetation, and this vegetation will not be cleared as a result of the development. This vegetation is also marked as indicative Green Network under the Caboolture West Local Plan, and therefore will be aimed to be retained under local government planning intent. The vegetation on the property surrounding the development area is isolated from other vegetation due to a 60 m wide cleared power line easement, cleared rural residential properties, fruit growing properties, and roads. While investigations across the wider property recorded evidence of Koala, any Koala habitat is limited by the current and proposed expansion of development on land adjoining the project area, in keeping with planning intent of the Caboolture West Local Plan. Further, the proposed referral only requires the clearing of 3 ha of habitat which could be considered to be potential habitat for the Koala. Based on this context, while the referral area and the broader 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 the implementation of numerous mitigation measures. Such plans will include (but not limited to):

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

The retention of remnant vegetation on the property also captures the two mapped watercourses on the property. There is minimal development planned for these areas. It is considered that the retention of the 100 ha of remnant vegetation on the site will provide continuation of the environmental values and functions of the property and the surrounding area. It should be noted that this vegetated area is considered Green Network within the Caboolture West Local Plan, and therefore is not slated for future development.

This assessment has determined that the proposed action 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 very low amount of vegetation (3 ha) with a low score of Critical Habitat (5) to be cleared, existing threats to the Koala in the area (including the presence of dogs and dingoes on the development site), 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.

It is noted that a self-assessment against the *EPBC Act Referral Guidelines for the Vulnerable Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)* has previously been conducted, with the result of the assessment showing that the action would not constitute a Controlled Action. This self-assessment was provided to the Compliance and Enforcement Branch of the **DotE**, to which the Senior Compliance Officer concluded *that based on the size of the disturbance area and the vegetation composition at the site, the action is unlikely to result in a significant impact to protected matters in the area*.

Should the Department disagree with this decision and consider the action a Controlled Action, a draft set of outcomes based conditions for the Stern Road 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 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 **MBRC** 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 **MBRC** 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.

Mitigation of impacts on the Koala

The project will result in the removal of 3 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:

- Although the proposal covers approximately 48 ha of land, the majority of this is cleared paddock, with some young Acacia regrowth. The development only requires the clearing of approximately 3 ha of habitat of variable quality (see **Plan 4** and **Attachment 3** for data), and the 100 ha of remnant vegetation surrounding the development footprint will be retained;
- 3 ha is considered a very small area of clearing (<20 ha);
- The habitat score of 5 for the site is the lowest possible score for "critical habitat";
- The surrounding vegetated area on the property is not proposed to be developed as part of this action (refer to **Plans 1 and 4**). These areas will continue to provide ecological value currently existing on-site, and connectivity values throughout the landscape and ensure long-term habitat viability should Koalas be present;
- No Koalas were observed on-site or in vegetation adjacent, only historical evidence of Koala activity in the form of scats was recorded;
- The two mapped watercourses on the property are largely outside of the development footprint and are not expected to be impacted by the development (see **Plan 1**);
- As vegetation on the property is largely isolated from any other vegetation due cleared lands and roads, and 100 ha of remnant vegetation on the property will be retained, the clearing of the 3 ha of vegetation within the development footprint 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.

The development will also adopt a number of strategies to mitigate the impacts of the development on the adjacent remnant vegetation. Most importantly, the layout includes a 20 m buffer area between the residential lots and the edge of the remnant vegetation (see **Plan 1**). This buffer area will assist to avoid edge effects, and maintain separation between the natural and urban areas. In some areas, this buffer area will include an access road which will place public tenure between new private allotments and the bushland. This buffer area will be used for firefighting vehicle access, and will also assist to minimise the direct spread of weeds and maximise the opportunity to observe and manage any weed outbreaks. In areas where a road is not included within the buffer area, the buffer will incorporate linear open space dedicated for pedestrian movement and other recreational outcomes. To allow for firefighting access, it will be designed to include minimal landscape plantings. Other strategies such as streetscape design, educational signage, animal controls, and buffer plantings will be incorporated in the design to minimise impacts of the development on the surrounding environment.

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?

X	No, complete section 6.2
	Yes, complete section 6.3

6.2 Proposed action IS NOT a controlled action.

The construction and operation of the proposed development at 100 Stern Road, Bellmere, Queensland is not considered to have a significant impact on 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 3 ha of vegetation due to the following conclusions:

- No Koalas were observed on-site;
- Evidence of Koala activity was Low usage within the development site and in adjoining vegetation;
- The site is completely isolated from any surrounding bushland areas due to the presence of roads on all sides;
- The remnant vegetation surrounding the development footprint covers 100 ha and is to be retained;
- 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**. This conclusion was also realised and agreed with by the Compliance and Enforcement Branch of the **DotE** through a self-assessment against the *EPBC Act Referral Guidelines for the Vulnerable Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)* process.

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** Brookfield Residential Properties has made a commitment to the future by ensuring that every project underway makes a positive contribution to the security, quality of life and well being of its residents and future generations to come. Across our project portfolio, economic, social and environmental strategies and initiatives work together to create a unique sense of place and provide the foundations for our projects to thrive into the future. To date, Brookfield Residential Properties has demonstrated a satisfactory record of responsible environmental management, and has met this commitment through tangible results that ensure investment in the community, the environment and local economies. Brookfield Residential Properties is committed to compliance with the requirements of all legislation, planning schemes and relevant policies.	**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** Brookfield Residential Properties has strong environmental policies and planning which is integrated into every residential apartment and masterplanned community project. These policies are applied to every project, and consider the impact on the surrounding environment, the future needs of the people who will call it home and ongoing economic benefits for the community. The ultimate measure of success is when theory is applied through practical delivery. Key environmental strategies include: Environmentally sustainable urban planning and design (each project is designed to maximise the natural assets of the site); Conservation of resources; Reducing the urban footprint through environmental rehabilitation and maintenance of natural habitats; and Construction Management – de-watering management strategies and the careful disposal of unsuitable material.	**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)**		**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.*

8.2 Reliability and date of information

Refer to response at 8.1

8.3 Attachments

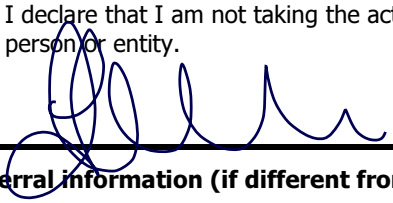
		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)	✓	- Project locality – Figures 1 & 2 - GIS file - Plan 1 – Proposed Layout - Plan 2 – Caboolture West Master Planned Area
	GIS file delineating the boundary of the referral area (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)	✓	- Project locality - Figures 1 & 2 - Plan 2– Caboolture West Master Planned Area
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)	✓	- 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)	✓	- Attachment 3 – Ecological Assessment Report - Plan 2– Caboolture West Master Planned Area - 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: Stern Road Development, Bellmere

9.1 Person proposing to take action

1. Name and Title:	Jaryd Collins, Senior Development Manager
2. Organisation:	Bellmere Land Holdings 1 Pty Ltd c/- Brookfield Residential Properties
3. EPBC Referral Number:	
4: ACN / ABN:	123 079 381
5. Postal address:	PO Box 372, Hamilton, QLD 4007
6. Telephone:	07 3907 ~~4054~~ 4266
7. Email:	Jaryd.collins@au.brookfield.com
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

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. I agree to be the proponent for this action. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.
Signature	 Date 19/7/16

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 19/07/2016