



Title of Proposal - Flinders Residential Development, Undullah Road, Undullah'

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Residential Development

1.2 Provide a detailed description of the proposed action, including all proposed activities.

The proposed action is the development of a master planned community, including residential, commercial, community and associated infrastructure uses, across 2,015 hectares at Undullah Road, Undullah, Queensland. Residential development will comprise a range of housing densities including large rural-type allotments, and the commercial uses anticipated include town centre provisions, tourism and agriculture. A list of all activities that may occur is provided below.

The proposed action abuts the Greater Flagstone Priority Development Area (PDA), which is a new township in South East Queensland (SEQ), and is situated in the western outskirts of the Logan City Council Local Government Area. The current local Planning Scheme designates the referral area as 'Emerging Community' zone and is flanked to the north and west by 'rural' and 'environmental management and conservation' zones respectively..

List of proposed activities (end use):

- residential (ranging between low density rural residential and high density small lot and apartments)
- major open space networks
- district scale recreation facilities
- education facilities
- major and minor infrastructure such as roads and supply networks
- town centre, neighbourhood centre and other employment generating areas
- commercial uses such as resorts, golf courses, agriculture and tourism facilities

The final configuration of end uses will be determined in consultation with and direction from Logan City Council as part of subsequent development applications and approvals. The proposed action will impact more than 20 hectares of defined habitat critical to the survival of the Koala and is therefore considered highly likely to have a significant impact for the purposes of the Environment Protection and Biodiversity Conservation Act 1999.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.



Area	Point	Latitude	Longitude
Referral area (approximate)	1	-27.810215430922	152.85767305851
Referral area (approximate)	2	-27.810215430922	152.85758722783
Referral area (approximate)	3	-27.810215430922	152.85758722783
Referral area (approximate)	4	-27.826156842557	152.88539637089
Referral area (approximate)	5	-27.833064060717	152.8853105402
Referral area (approximate)	6	-27.8360241625	152.8793882227
Referral area (approximate)	7	-27.85127879101	152.88548220158
Referral area (approximate)	8	-27.869186959381	152.84788836003
Referral area (approximate)	9	-27.869262835155	152.82969225407
Referral area (approximate)	10	-27.862433802708	152.82994974614
Referral area (approximate)	11	-27.862282041543	152.83518541813
Referral area (approximate)	12	-27.834506171672	152.83518541813
Referral area (approximate)	13	-27.834430271574	152.82986391545
Referral area (approximate)	14	-27.819628737899	152.82994974614
Referral area (approximate)	15	-27.810291347951	152.84179438115
Referral area (approximate)	16	-27.810215430922	152.85767305851

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland).

The proposed action is located on land historically and currently utilised as cattle grazing and topography varies from steep and rolling hills to terraced landscapes. Undullah Creek dissects



the referral area and Woolaman Creek forms the southern boundary. The confluence of these two creeks is at the south-eastern boundary of the referral area. The town of Jimboomba, a regional centre, is approximately 14 kilometres east and Flagstone town centre is located approximately 7 kilometres east of the proposed action.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

2015 hectares

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Part 19/S311970, part 1/RP35158, 1/RP46806, 2/RP46302, part 2/RP46303, part 2/896513 and others

1.8 Primary Jurisdiction.

Queensland

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

Yes

1.10.1 Is there a local government area and council contact for the proposal?

Yes

1.10.1.0 Council contact officer details

1.10.1.1 Name of relevant council contact officer.

Adam Avalos

1.10.1.2 E-mail

adamavalos@logan.qld.gov.au

1.10.1.3 Telephone Number



07 3412 4874

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 01/2021

End date 01/2041

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

In Queensland, the Planning Act 2016 provides for the making of state planning instruments, local planning instruments and other statutory instruments. Together, these guide strategic planning and development assessment throughout the State.

The Planning Regulation 2017 prescribes assessable development and the assessment manager for particular types of development. The Planning Regulation 2017 specifies state interests, which are assessed by the Department of Infrastructure, Local Government and Planning (DILGP) State Assessment Referral Agency (SARA) under the State Development Assessment Provisions (SDAP) and respective State Codes. The SDAP provides an assessment framework for other legislation administered under the Planning Act 2016, including the Vegetation Management Act 1999, Fisheries Act 1994, Water Act 2000, Environmental Offsets Act 2014 and Nature Conservation (Koala) Conservation Plan 2017. The proposed action will require assessment in accordance with the SDAP and applicable state Codes

Under the SEQ Regional Plan, a State planning instrument, the land is designated as within the urban footprint. Within the urban footprint, the Queensland Government supports a compact settlement pattern that will provide for the region's urban development needs to 2041.

The proposed action has preliminary approval from Logan City Council (the local government) to develop the land for the purposes described in section 1.2. Development of the land requires additional assessment upon application to Logan City Council to determine the particulars of executing the preliminary approval. This will include:

- a context plan and site development plan(s) (material change of use)
- stage(s) subdivision (reconfiguring a lot)
- civil works (operational works)
- management plans (compliance assessment)



Under the existing preliminary approval, future development is subject to assessment in accordance with the planning scheme in effect at the time of application as well as state interests. The current planning scheme is Logan Planning Scheme 2015 version 5.1 which commenced on 8 September 2017 and the planning scheme overlay codes are as follows:

- Acid sulfate soils overlay
- Biodiversity areas overlay
- Bushfire hazard overlay
- Extractive resources overlay
- Flood hazard overlay
- Greenbank Training Area buffer overlay
- Heritage overlay
- Landslide hazard and steep slopes area overlay
- Regional infrastructure corridors and substations overlay
- Strategic airport and environs overlay
- Transport noise corridors overlay
- Water resource catchments overlay
- Waterway corridors and wetlands overlay

Separate to the Planning Act 2016, the Nature Conservation Act 1992 (NCA) protects threatened flora and fauna species in Queensland. Future development application will be subject to provisions of the NCA 1992.

Section 3 of the accompanying Ecological Assessment Report —EPBC Act Referral (November 2017) provides further details on how ecological values are protected under State legislation and planning instruments.

1.13 Describe any public consultation that has been, is being or will be undertaken,



including with Indigenous stakeholders.

As part of gaining the preliminary approval from Logan City Council to develop the land, the proponent undertook public notification during November and December 2015. There has not been any further public consultation undertaken. Future consultation will occur with all relevant stakeholders as required as part of future assessment processes, which will require, at a minimum, public notification and opportunities to comment on the proposal.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.

The project is not subject to an environmental impact assessment.

1.15 Is this action part of a staged development (or a component of a larger project)?

No

1.16 Is the proposed action related to other actions or proposals in the region?

No



Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The [interactive map tool](#) can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

- [Profiles of relevant species/communities](#) (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;
- [Significant Impact Guidelines 1.1 – Matters of National Environmental Significance](#);
- [Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies](#).

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

Species	Impact
Koala <i>Phascolarctos cinereus</i>	Koalas are found in a range of habitats, from



Species	Impact
	coastal islands and tall eucalypt forests to low woodlands inland. The species is known from the surrounding area and evidence has been recorded on-site. Extensive searches for this species, including spotlighting, did not find any individuals. However some old scats were observed throughout the site in various locations. The site is highly disturbed through past vegetation clearing and grazing purposes and severe infestations of Lantana camara have also reduced the quality of habitat for this species (refer Impact Assessment Attachment).
Grey-headed Flying-fox <i>Pteropus poliocephalus</i>	Grey-headed Flying-fox occur in a variety of habitats with movements dependent upon food availability. Individuals of this species were observed throughout the spotlighting periods utilising the flowering Eucalyptus, particularly Eucalyptus tereticornis (Forest Red Gum). Direct observations consisted of small numbers of individuals, indicating that a direct roosting site is not located within the referral area, but rather the site is utilised as patch habitat and opportunistic foraging when mobilising. More suitable foraging and roosting habitat for this species is located within the biodiversity corridor to the west of the referral area (refer Impact Assessment Attachment).

2.4.2 Do you consider this impact to be significant?

Yes

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?



No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No



Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

The following is extracted from the Ecological Assessment Report accompanying this referral. Refer to the EAR for further details.

The referral area is mapped as containing primarily category X unregulated vegetation and approximately 145.8 ha of remnant vegetation, of which 7.8 hectares is mapped as least concern regional ecosystems and the remaining 138.0 ha is a composite of least concern and of concern regional ecosystems. The composite regional ecosystem is located across multiple polygons, of which all contain 50% least concern RE 12.9-10.2, 40% of concern RE 12.9-10.7 and 10% least concern RE 12.9-10.17a. The least concern regional ecosystems are mapped across separate remnant polygons as RE 12.3.7, RE 12.9-10.2 and RE 12.9-10.17a.

Overall, the referral area was found to be relatively disturbed by historical clearing, logging practices and cattle grazing, particularly in the central and eastern aspects. Reduced ongoing maintenance and thinning of the understory/mid-canopy has resulted in dense *Acacia* sp. regrowth and an abundance of introduced species across the majority of the referral area.

SHG undertook significant contemporary flora and fauna field assessments over the referral area between September and October 2017. These surveys were carried out to address all EPBC issues, however, the primary focus was placed on the *Phascolarctos cinereus* (Koala) as they are known to occur in the region. Additional EPBC specific surveys were also completed (refer to EAR Table 1) which had the potential to confirm if species such as the *Chalinolobus dwyeri* (Large-eared Pied Bat), *Dasyurus maculatus maculatus* (Spotted-tailed Quoll), *Delma torquata* (Collared Delma), *Lathamus discolor* (Swift Parrot), *Petrogale penicillata* (Brush-tailed Rock-wallaby), *Pteropus poliocephalus* (Grey-headed Flying-fox) and *Turnix melanogaster* (Black-breasted Button Quail) were present on-site. The survey effort is shown in EAR Figure 11.

Based on the ecological surveys completed, broad observations and results across the referral



area are as follows:

- The land has been historically used as a cattle grazing and logging property in areas where the topography is suitable. Cattle yards are situated outside and to the north east of the referral area.
- The confluence of Undullah Creek and Woollaman Creek is at the south-eastern boundary of the referral area. Downstream, there is a confluence with the Logan River. The mouth of Logan River is at Moreton Bay, a Wetland of International Importance. The length between the confluence of Woollaman Creek with Logan River and Moreton Bay is approximately 85 km. Based on these distances and planned development type (a master planned community), a measurable effect to the Moreton Bay protected wetland as a result of the action is very unlikely. Further west of the investigation area is the top of the catchment, which includes large areas of conservation.
- Surveys of the vegetation community reviewed the regional ecosystem types across the Category B and Category X areas —
 - o regional ecosystems 12.9-10.2, 12.9-10.7, 12.9-10.17a and 12.3.7 were confirmed as present in the Category B locations as shown in Figure 4 and Figure 5
 - o these regional ecosystems are associated with land zone 9-10 and land zone 3 which are not suitable for the Lowland rainforest of Subtropical Australia and White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland TECs
 - o TECs were not observed in the referral area
 - o None of the Category B or Category X areas meet the condition thresholds of a listed TEC
 - o There are nil listed TEC present in the referral area.
- The following threatened fauna species protected under the EPBC Act were confirmed as present as part of ecological surveys completed in 2017 (i.e. known to occur):
 - o *Phascolarctos cinereus* (Koala) occur over a range of open forest and woodland communities but ultimately their habitat is defined by the presence of koala food trees. Koalas are usually found in higher densities where food trees are growing on more fertile soils and along watercourses. This species is known to occur within the local area and was identified in the vicinity of the referral area.



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- o *Pteropus poliocephalus* (Grey-headed Flying Fox) occur in a variety of habitats with movements dependent upon food availability. Individuals of this species were observed throughout the spotlighting periods utilising the flowering *Eucalyptus* sp. as a foraging source, particularly *Eucalyptus tereticornis* (Forest Red Gum). No roosting sites were observed on-site or in the vicinity.

 - The desktop review and past surveys by other parties indicate the following threatened fauna species protected under the EPBC Act have the potential to occur; however the species were not found:
 - o *Chalinolobus dwyeri* (Large-eared Pied Bat) are listed as a vulnerable species under the EPBC Act. This species roosts in caves, crevices in cliffs, old mine workings and in the disused bottle shaped mud nests of *Petrochelidon ariel* (Fairy Martin). They frequent low to mid elevation dry open forest and woodland in close proximity to these features. They are found in well-timbered areas containing gullies.
 - o *Dasyurus maculatus maculatus* (Spot-tailed Quoll) require forests with suitable den sites such as rock crevices, caves, hollow logs, burrows and tree hollows. This species has a preference for mature wet forest habitat, especially in areas with rainfall 600 mm/year. Unlogged forests that has been less disturbed by timber harvesting are also preferred.
 - o *Petauroides Volans* (Greater Glider) subsist almost entirely on the young leaves and flower buds of select eucalypt species, especially *Eucalyptus radiata* (Narrow-leaved Peppermint), *Eucalyptus viminalis* (Manna Gum) and *Eucalyptus acmenoides* (White Mahogany). A natural predator of this species is the *Ninox strenua* (Powerful Owl), which has been identified utilising the investigation area. They generally prefer habitats that are in older forest and have large numbers of hollows. The home range of this species is between 0.7–3 ha and tends to have a population density of 0.01–5 individuals per hectare.
 - o *Delma torquata* (Collared Delma) is restricted to SEQ within *Eucalyptus* sp. dominated woodlands that retain rocky ground cover. Although this species was not observed throughout the field survey period, environmental conditions to support this species were observed. However, a large portion of this habitat is infested with *Lantana montevidensis* (Creeping Lantana) and has significant cattle damage.

 - A variety of common avi-fauna were observed utilising the site as part of a broader home range. Two (2) listed marine species were observed throughout the survey period, both of which are common throughout SEQ:
 - o *Ardea ibis* (Cattle Egret)
 - o *Merops ornatus* (Rainbow Bee-eater)



All flora and fauna observed during field surveys are listed in EAR Table 4 and Table 5.

Weeds are a common occurrence in environments modified from their natural state to support agricultural activities such as cattle grazing. Sixty-six (66) introduced species were identified throughout the survey period including twenty-two that are listed under Queensland's Biosecurity Act 2014. Of these twenty-two (22) species, eleven are listed as 'Restricted Invasive Plant' and eleven (11) are listed as 'Other Invasive Plant'. The weeds observed are listed in EAR Table 6 and Table 7.

3.2 Describe the hydrology relevant to the project area (including water flows).

The referral area contains several mapped waterways under the VMA and Fisheries Act 1994, however, waterway assessments during the field survey effort identified four (4) distinguishable watercourses. The remainder represent ephemeral overland flow paths and/or drainage features that do not contain watercourse characteristics and only function during heavy rainfall events. Of the distinguishable watercourses identified, one is Woollaman Creek which bounds the referral area to the south and another is Undullah Creek which traverses the referral area from north to south within the eastern aspect. The other two (2) identified waterways are un-named creeks that traverse the referral area. One un-named creek is located in the northern aspect of the referral area and flows west to east, while the other is located in the central aspect of the referral area and flows from the western boundary to the south-eastern aspect (refer EAR Figure 14). All of the distinguishable watercourses within the referral area contain an identifiable top of bank, bed and bank features, riparian vegetation and water pooling or flowing.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

A review of the Australian Soil Resource Information System (ASRIS) indicates the soils across the site are comprised of kurosols, sodosols and chromosols. The presence of chromosols coincides with land zone 9-10 in the north-western portion of the referral area; sodosols coincide with lands utilised for cattle grazing and kurosols are mapped on the eastern slopes of the referral area.

Vegetation characteristics across the site represent modified versions of pre-clear Regional Ecosystems being RE 12.9-10.2 (*Corymbia citriodora* subsp. *variegata* +/- *Eucalyptus crebra* open forest on sedimentary rocks), RE 12.9-10.7 (*Eucalyptus crebra* +/- *E. tereticornis*, *Corymbia tessellaris*, *Angophora* spp., *E. melanophloia* woodland on sedimentary rocks), RE 12.9-10.3 (*Eucalyptus moluccana* open forest on sedimentary rocks), RE 12.9-10.17 (*Eucalyptus acmenoides*, *E. major*, *E. siderophloia* +/- *Corymbia citriodora* subsp. *variegata* woodland on sedimentary rocks) and RE 12.3.7 (*Eucalyptus tereticornis*, *Casuarina cunninghamiana* subsp. *cunninghamiana* +/- *Melaleuca* spp. fringing woodland).



3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

The referral area is not considered to contain any unique or important values. Extensive field studies conducted by James Warren & Associates (2011) and Saunders Havill Group (2016 & 2017) indicate that the referral area holds limited intact bushland, while possessing none of the other unique habitat features identified within the adjacent lands (rocky escarpments, north-facing rocky outcrop, dens, caves and lowland subtropical rainforest). Although there are some provisions of linear corridor function (north-south) in the western extent and along the major waterways, due to the historical land clearing, current land uses and future planned urban land-use, the vegetation provides limited long-term stepping stone connectivity and patch habitat throughout the broader Logan/Scenic Rim region. More significant linear connectivity corridors and habitat features are present to the immediate west (adjacent bushland remnant and Finders-Karawatha corridor) of the referral area. The land immediately adjacent to the referral area provides multiple unique habitat features, major altitudinal gradients and connectivity between large tracts of intact remnant vegetation. Further, given the proximity to the Finders-Karawatha corridor, it is considered the most ecologically significant in ensuring the survival and success of the listed EPBC threatened species known to occur in the vicinity of the referral area.

3.5 Describe the status of native vegetation relevant to the project area.

Analysis of historical imagery shows that in 1944 broad-scale clearing occurred across the majority of the site with the exception of steep slopes. This logging event was followed by the integration of cattle grazing activities on the terraced landscapes adjacent to waterways, while the ridgelines continued to be strategically logged. Since logging operations ceased, the areas of favourable topography have seen the continuation of cattle grazing practices and the associated land clearing and management. Where the land was predominantly utilised for logging (i.e. ridgelines), it now represents a non-remnant unmaintained regrowth vegetation community.

Regulated vegetation mapping published by the Queensland Department of Natural Resources and Mines illustrates the age of native vegetation across the referral area with only small areas, being the steep slopes, comprising mapped remnant vegetation. Refer to the attached Saunders Havill Group Report (2017).

Major drainage features and watercourses across the referral area contained regrowth representative of pre-clear Regional Ecosystem 12.3.7. The regrowth was dominated by *Melaleuca viminalis* (Weeping Bottlebrush) and *Casuarina cunninghamiana* (River She-oak), with scattered *Corymbia intermedia* (Pink Bloodwood) and *Eucalyptus tereticornis* (Forest Red Gum). It should be noted that the drainage features and watercourses are heavily weeded with *Lantana camara* (Lantana).

The regrowth vegetation species are representative of pre-clear Regional Ecosystems within the



area: 12.9-10.2, 12.9-10.7, 12.9-10.3 and 12.9-10.17. The regrowth is dominated by Acacia species including Acacia disparrima (Hickory Wattle), Acacia concurrens (Black Wattle) and Acacia leiocalyx (Early Flowering Black Wattle) and scattered Eucalyptus and Corymbia species including Eucalyptus siderophloia (Grey Ironbark), Eucalyptus crebra (Narrow Leaf Ironbark), Corymbia citriodora (Spotted Gum), Eucalyptus tereticornis (Forest Red Gum) and Corymbia tessellaris (Moreton Bay Ash).

The steep slopes (excluding the remnant polygons) consist of non-remnant eucalypt, Corymbia, Lophostemon and Allocasuarina regrowth. The regrowth vegetation species are representative of pre-clear Regional ecosystems within the area: 12.9-10.2, 12.9-10.7, 12.9-10.3 and 12.9-10.17. The regrowth is dominated by Lophostemon confertus (Brush Box), Allocasuarina littoralis (Black She-oak), Corymbia citriodora (Spotted Gum), Eucalyptus siderophloia (Grey Ironbark) and Eucalyptus crebra (Narrow-leaved Ironbark).

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

Site topography varies from steep and rolling hills to terraced landscapes . Site elevation rises from approximately 40 m amsl in the south-east at Woollaman Creek to approximately 200 m amsl in the ridges to the north-west.

3.7 Describe the current condition of the environment relevant to the project area.

The current condition of the referral area varies amongst the heavily grazed pastoral areas to less accessible steep slopes areas. Cattle grazing lands (the ongoing use) comprise attributes typical of modified environments — a groundcover mosaic of introduced grasses amongst patches of mature tree specimens. Introduced species are common across this area, and sixty-six (66) introduced flora species were identified throughout the survey period (Saunders Havill Group 2017) including twenty-two (22) of which are listed under Queensland's Biosecurity Act 2014.

Beyond the areas heavily utilised for cattle grazing and pockets of remnant vegetation, the ridgelines and lower slopes comprise non-remnant unmaintained regrowth. These ridgelines and lower slopes have historically been cleared to facilitate access tracks for logging practices. Unmaintained regrowth may provide an environment for introduced species to flourish and take hold, and the re-establishment of native species can take many years without human intervention. Throughout the regrowth areas, the condition of vegetation reflected the historical clearing practices and lack of recent of ongoing maintenance.

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

A search of the Australian Heritage Database did not identify a place/s with heritage values in the vicinity of the project area. There are no known places with heritage values relevant to the



project area.

3.9 Describe any Indigenous heritage values relevant to the project area.

A review and survey of Indigenous heritage values across the referral area will be completed subsequent to the lodgement of this referral. The existing Indigenous heritage values of the referral area are unknown.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

Freehold

3.11 Describe any existing or any proposed uses relevant to the project area.

The referral area comprises one existing use being cattle grazing land. Cattle grazing has occurred primarily throughout the central and southern aspects of the referral area since the 1940s. List of proposed activities (end use, refer Response at 1.2):

- residential (ranging between low density rural residential and high density small lot and apartments)
- major open space networks
- district scale recreation facilities
- education facilities
- major and minor infrastructure such as roads and supply networks
- town centre, neighbourhood centre and other employment generating areas
- commercial uses such as resorts, golf courses, agriculture and tourism facilities



Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

A number of design construction and management measures will be implemented to reduce the overall environmental impact of the project. Many of these are mandatory and based on Local and State legislation or embedded in the Material Change of Use approval over the site (refer Attachment). Development measures to be employed are outlined in this section of the referral.

Site Selection for Development

The application site has been earmarked by the State and Local Governments as a suitable site for future urban development. There are very few sites in Queensland with easy connection to existing transport facilities and major infrastructure that can result in such a large development outcome (population base) with relatively limited environmental, economic and social impacts.

It is acknowledged in this referral and Ecological Assessment Report EPBC Act Referral (refer Attachment) notes that the site retains remnant vegetation and other habitat features, importantly, to implement the development the following core impacts do not occur:

1. No Threatened Ecological Communities are located on the site.
2. No Remnant Endangered Regional Ecosystems are located on the site.
3. Minor clearing of Of Concern and Least Concern Remnant Regional Ecosystems.
4. No development is proposed in Coastal Management or Hazard areas.
5. No development is proposed in Wetlands.



6. The site is not located within a Koala assessable area of the Planning Regulation

Site Design

The approved Land Use Plan (refer Attachment) will guide the development layout and reduce potential impacts by concentrating development in degraded land and lower value habitat areas with a focus on retaining higher value ecological features and site habitat opportunities within the drainage line corridors. vast majority of clearing will occur in non-remnant areas and a small area of low order remnant communities with a state classification of Least Concern and Of Concern due to their abundance remaining within the immediate bioregion.

Key features of the site design considered to minimise impacts include:

- Retention of drainage line corridors which connect to the Flinders-Karawatha Bioregional Corridor
- Retention and rehabilitation of Linear Open Space along waterways which provides connectivity to Woollaman and Undullah Creeks
- Retention of a Primary Koala habitat tree species within the Linear Open Space.
- Buffers to waterway corridors and adjoining lands
- Retention of major drainage lines and important connective areas

Further Assessment, Studies and Pre-clearance Surveys

The assessment and approval process requires the submission and review of multiple stages of applications prior to the commencement of works. The existing approval over the referral site is an overarching Material Change of Use (refer Attachment). Prior to commencement of any actual works on the ground, the following sequential submissions must be lodged and approved:

1. Lodge and receive approval for Plans of Development (similar to Plans of Subdivision or reconfiguration)
2. Operational Works or Compliance Assessment Approval (Actual Works approvals, roads,



tree clearing, landscaping, etc)

Each of these submissions and approvals require differing environmental surveys, studies, constraint planning and reporting based on the smaller area in which the application applies. At the Operational Works / Compliance Assessment phase, detailed reporting and mapping is converted into management and rehabilitation plans protecting environmental values during construction and establishing operational measures to ensure enhancement.

Pre-Clearance Surveys

Once approvals for actual on-ground works have been issued (Operational Works / Compliance Assessment) pre-clearance surveys for flora and fauna are required in advance of any clearing. These surveys form part of the extensive management plans provided in support of final approvals.

Detailed Design Considerations (Roads)

At the Plan of Development Scale (Subdivision Design), tweaking of road locations, setbacks and earthworks will occur to ensure the corridor areas are protected and enhanced. This is particularly the case where roads traverse and adjoin corridors. All new roads will be designed in accordance with the Queensland Department of Transport and Main Roads Fauna Sensitive Road Design Manual (Volumes 1 and 2). Some of the aspects and practices outlined in this manual and to be incorporated into the proposal include:

Safe Passage Road Fauna Movement Solutions

Where internal roads within the project are required to cross waterways, bridges and or specific fauna movement culverts will be incorporated into the design. These structures will be designed and sized to cater for the movement of native fauna anticipated to utilise the waterway corridors. Fauna underpasses will be exclusively designed for fauna and separate to hydrology devices. The safe crossing movement solutions will be augmented by directional fauna exclusion fencing to ensure animals are funnelled away from vehicle conflicts and into safe passage areas. Where required, additional large tree plantings will be installed either side of a constructed road crossing to reinstate as quickly as possible a closed canopy over the new road infrastructure. Where considered necessary, rope tunnels and other canopy linking structures will be provided to cater for the time lag between clearing and the re-establishment of suitable vegetation.



At a smaller scale, the design of roads near to waterway corridors area will adopt traffic calming and reduced speed signage to control vehicles adjoining sensitive areas.

Detailed Design Considerations (Storm Water and Landscaping)

Importantly, the application process requires the consideration of Storm Water treatment and Landscape outcomes.

Management Measures

In addition to mitigation outcomes incorporated in the design process, a number of management measures are proposed to ensure impacts are avoided and or minimised through the construction and operational phases. These include:

a. Confirmation and Pre-Clearance Surveys

As a result of the likely time delay from preparation of assessment reports to approvals and again through the sequencing of development precincts and clearing works, it is a requirement that a system of pre-clearance surveys are conducted prior to each stage of actual site clearing. These surveys can be used to safeguard the site against changing Commonwealth, State and Local government species listings and inform management plans relative to the natural features in each Context Plan and Plan of Development.

b. Vegetation Clearing and Management Plan

A Vegetation Clearing and Management Plan (VC&MP) will form part of a broader management document submitted which each stage of the operational works package. The VC&MP will be critical to limit vegetation clearing to only what is required within each stage of works to help control erosion and sediment control risks and provide for the long term sequencing of clearing over the application area. The likely contents of each VC&MP include:

- Clearly show all trees to be removed and retained
- Include details of all civil works likely to impact on existing vegetation
- Temporary and permanent exclusion and protection fencing for riparian corridors and parklands



-
- Roles and responsibilities for site contractors, developer and the consultant group
 - Stockpiling and site access locations
 - A clearing sequencing plan showing the commencement of clearing and direction of removal (this should be in conjunction with the Fauna Management Plan to allow for the appropriate flushing of fauna towards surrounding safe haven areas.
 - Links to weed management and revegetation proposals
 - The stock piling and reuse of cleared vegetation
 - Specific details on the removal of previously identified potential fauna habitat trees
 - Where trees are shown to be retained within disturbance zones they should be accompanied by necessary arborist specifications incorporated into the VC&MP.

c. Fauna Management Plan

A Fauna Management Plan (FMP) should be prepared for the impacts of the construction phase covering for the loss of vegetated areas, isolated trees and barriers and impediments to dispersal. The FMP should link closely with the VC&MP and include details on:

- Summary of species surveyed as using the site and which of those are likely to be impacted by works occurring within each stage of works
- List relevant State and Federal legislation constraints and controls for the above listed fauna
- A plan showing existing habitat opportunities and locations
- Detail the threats for existing fauna species
- Include clearing sequencing plan from VC&MP
- Specify management and mitigation measures – could include temporary use of fauna exclusion fencing
- Details of fauna spotter role and contacts and certification
- Specific fauna management procedures for potential or known habitat trees
- Commitment to the early installation of nest boxes to surrounding bushland areas to be



retained

- Commitment to the early rehabilitation of proposed strategic corridors to minimise lag time between clearing and the functioning of future corridors

d. Fauna Spotter Roles and Reporting

The Fauna Management Plan will be implemented by an EHP registered wildlife spotter / catcher. This role is mandated for any clearing of native vegetation in Queensland. The role of the Fauna Spotter is to complete an assessment of the works area no more than two weeks prior to the works actually occurring and present a report on the findings and how the proposed clearing is to be managed. The Fauna Spotter / Catcher is required at the pre-start meeting and to be on-site during all times of construction. Under the Nature Conservation Act 1992, registered Fauna Spotter / Catchers must complete a return of operations report to the Queensland State Government stating all fauna encountered and the specific management measures used to ensure the safety of native animals.

e. Rehabilitation and On-Going Management Plan

Detailed Rehabilitation Plans will be prepared in accordance with the South East Queensland Restoration Framework are subject to assessment by LCC.

f. Stormwater Quality Management Plan / Erosion and Sediment Control Plans

A detailed Stormwater Quality Management Plan and Erosion Sediment Control Plan will be prepared covering both the construction and operational phases for each stage of works. The plan will contain details on the exact location of stormwater treatment systems, including structural and surface treatment devices. The plan will include details on:

- Objectives, monitoring, reporting, actions for non-compliance
- Identification of possible sources of water pollution including nutrients and contaminants
- Details on management and quality devices proposed.
- Erosion and Sediment Control Plan



Operational Measures

The proposal is a large scale residential project and at completion will include many variable precincts and land uses over the tenure of the project. Development densities increase with proximity to local centres with built environments containing medium density development. Areas away from centres are expected to be less dense and in areas integrated within surrounding environmental values. Within some of these stages, a number of potential operational awareness tools and, in some areas, specific regulations are likely to be applied.

a. Lifestyle Guidelines – New Residents Awareness

As part of the release of new Plan of Development Areas which adjoin or are in close proximity to sensitive receiving environments, the proponent will prepare a lifestyle guideline document to help promote a range of ecological sustainable living principles. Development areas directly adjoining waterway corridors will be targeted for a tailored lifestyle guidelines document. The guidelines should be used to directly educate and raise awareness of a large audience towards the management of surrounding creeks, bushland, and other conservation areas including the nearby Flinders-Karawatha Bioregional Corridor. Topics within the education documents will include:

- Appropriate plant selection on allotments
- Inappropriate planting species (known local or declared weed species)
- Management of household scale run off
- Protection of native animals and the types residents could expect to see
- Understanding storm water devices
- Appropriate management of domestic animals
- Location of dog on-lead and off-leash areas
- Key local and state phone numbers to contact if distressed or orphaned fauna is located.

Through raising awareness, the lifestyle guidelines will help new residents take direct ownership of the local streetscapes, immediate creek corridors and open space infrastructure.



b. Detailed Landscape Submissions

A non-invasive, locally endemic species palette will be adopted throughout all project areas providing the following ecological benefits:

- Additional native trees, shrubs and ground covers for native fauna known to adapt to fringing urban environments
- Reduce the potential for non-native and exotic landscape species invading retained bushland and waterway areas
- Reduce maintenance and fertiliser requirements
- Provide an in-ground example to future residents of a practical suite of working native plants for incorporation into private gardens.
- Help establish a more sustainable and robust connected link along Sandy Creek and other site tributaries.

c. Cat and Dog Restrictions

The variability of the proposed development areas within the proposal do not feasibly support wholesale cat and/or dog restrictions on private allotments. For the bulk of the project area, a broad non-mandated animal control scheme will be proposed which is likely to include the following features:

- Broad resident education on responsible domestic animal ownership within the area
- Dog on-lead areas within and adjoining designated conservation areas – supported by notification and education signage
- Specific dog off-leash areas in support of controls in other locations
- Logan City Council Animal Control Local Law which requires registration, vaccinations, etc. will apply throughout the project.

In a limited number of locations, more stringent private allotment animal controls will be applied. These areas will likely be along areas which adjoin the Flinders–Karawatha Bioregional Corridor. In these locations, controls will vary from complete prohibition to limiting the number



and size of animals allowable on individual allotments. These controls are regulated through the application of a covenant on the created allotment prescribing the prohibition or restriction on the allotment title making purchasers aware up-front and allowing the controls to apply in perpetuity.

d. Building Envelopes / Vegetation Protection / Covenants

In the precincts surrounding the local centres allotments and densities will be more intense. Based on the type of development, there are very few opportunities where existing native trees can be safely retained and protected in private property. The exception is in the western and northern extents of the project where steep grades substantially limit the ability to create smaller allotments. These locations present an opportunity to establish larger allotments where vegetation is retained and protected through building location envelopes. Again, where these controls are considered appropriate, covenants will be used to enforce the controls on allotment titles.

e. Offsets

It is presumed that an offset for impacts on critical habitat for the Koala and Grey-headed Flying-fox will be required for the project to proceed.

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

The proposed action will result in the clearing of vegetation which is considered to provide critical habitat for MNES, specifically for the Koala and Grey-headed Flying-fox. As highlighted throughout this referral document, this vegetation has been subject to broad scale clearing and cattle grazing and regular maintenance activities. While evidence of Koala and Grey-headed Flying Fox was located on-site as part of contemporary MNES survey, as no Koalas and no roost camps for Grey-headed Flying-Fox were recorded on-site, it is considered that these species utilise the property as part of a broader home range and do not exclusively occupy the site. Optimal habitat for both Koala and Grey-headed Flying-fox is located within the adjoining Flinders-Karawatha Bioregional Corridor to the north, which provides a protected and connected landscape for these species.

The project will result in the clearing of or potential indirect impacts on some or all of 1,153 ha of vegetation defined as critical habitat for the Koala and Grey-headed Flying Fox (as outlined in the Attachments). It is anticipated that unavoidable impacts on this habitat will require offsets as per the EPBC Offsets Policy if approved.



It is anticipated that the following environmental management mitigation measures will be committed to as part of the ongoing approvals process:

- Stage Specific Fauna Management Plans
- Stage specific Vegetation Management Plans
- Stage specific Stormwater Management Plans
- Stage specific Erosion and Sediment Control Plans

At a local scale, the retention and rehabilitation Linear Open Space along waterways will maintain connectivity internally within the site and externally to Woollaman Creek to the south and Flinders-Karawatha Bioregional Corridor to the north. In accordance with best practice management, restoration and rehabilitation works will seek to stabilise and reverse the negative effects of ongoing habitat fragmentation. The intent is for managed areas of rehabilitation and restoration to rectify canopy gaps and restore bare or denuded areas to provide additional habitat and refugia within the lower strata to maintain connectivity with external approval corridors and improve terrestrial corridor viability. Rehabilitation works will occur in accordance with the South East Queensland Ecological Restoration Framework.

The primary objectives recommended for the Linear Open Space waterway corridors rehabilitation include:

- Retain significant floral species and vegetation communities
- Retain and enhance fauna habitat values
- Remove and manage processes potentially threatening the viability of existing habitats
- Increase the extent of vegetation communities and potential fauna habitat over time.

Rehabilitation works within the Linear Open Space waterway corridors will include weed management and replanting with native species consistent with mapped Regional Ecosystems to augment ecological values and enhance connectivity.



Additional operational measures will be implemented in association with the clearing of each development stage including:

- Installation of fauna habitat components (i.e. nest boxes)
- Fauna awareness signage and Lifestyle Guidelines to new residents
- Roadway crossings over the waterway corridors will be designed so as to be fauna friendly to promote continued fauna dispersal
- Cat and dog restrictions in Linear Open Space corridors and adjoining allotments

Overall, the preservation and rehabilitation of the Linear Open Space waterway corridors under the proposal is considered to provide a noteworthy environmental outcome for Matters of National Environmental Significance that may infrequently utilise the site as part of a broader home range.



Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

Listed threatened species and communities - Yes

5.1.5 Listed migratory species

No

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No



5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

NA



Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Yes, the person taking the action has a satisfactory record of responsible environmental management, and has not been associated with irresponsible environmental management in the past.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

NIL

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

The action taken is in accordance with the Pacifiq Communities' environmental policy. Pacifiq Communities seeks to establish a positive environmental legacy for the benefit of future generations, is committed to minimising the overall impact on the environment and encourages environmentally responsible behaviour on the part of employees, partners and key stakeholders. Pacifiq Communities continually seeks to apply innovative and proven solutions to environmental issues in collaboration with our multi-disciplinary consultant team and in so doing, meet and in some cases, exceed environmental laws and regulations.

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?



Yes

6.4.1 EPBC Act No and/or Name of Proposal.

2016/7772 — Residential development — Construction and operation of a master planned multi-use residential development within the Greater Flagstone Priority Development Area, Wyatt Road, Undullah, Queensland.



Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
Logan City Council 2016, MCU/Preliminary Approval	High	Nil
Department of Infrastructure, Local Government and Planning 2017, ShapingSEQ — South East Queensland Regional Plan 2017	High	Nil
Australian Koala Foundation, The Spot Assessment Technique: determining the importance of Habitat Utilised by Koalas (<i>Phascolarctos cinereus</i>), available online https://www.savethekoala.com/sites/default/files/docs/conservation/The%20Spot%20Assessment%20Technique.pdf	High	Nil
Australian Koala Foundation 2012, National Koala Tree Protection List; Recommended Tree Species for Protection and Planting of Koala Habitat.	High	Nil
John Warren and Associates Pty Ltd 2011, Ecological Assessment Report commissioned by Pacific International Group	High	Nil
Phillips S & Callaghan J 2011, The Spot Assessment Technique: a tool for determining localised levels of habitat use by Koalas <i>Phascolarctos cinereus</i> . Australian Zoologist 35(3): 774-780.	High	Nil



Reference Source	Reliability	Uncertainties
Saunders Havill Group 2017, Ecological Assessment Report — EPBC Act Referral commissioned by Pacific International Group	High	Nil



Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.1 Select the relevant alternatives related to your proposed action.

8.27 Do you have another alternative?



Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

Managing Director

9.2.2 First Name

Darwin

9.2.3 Last Name

King

9.2.4 E-mail

darwin.king@pacifiqcommunities.com

9.2.5 Postal Address

12 Nerang Street
Nerang QLD 4211
Australia

9.2.6 ABN/ACN

ACN

105107828 - PACIFIC INTERNATIONAL DEVELOPMENT CORPORATION PTY LTD

9.2.7 Organisation Telephone

+61 7 5500 4887



9.2.8 Organisation E-mail

enquiries@pacifiqcommunities.com

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

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date:

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 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

Person proposing the action - Declaration

I, Darwin King, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature:..... Date: 27/11/17

I, Darwin King, the person proposing the action, consent to the designation of Pacific International Development Corp P/L as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:..... Date: 27/11/17

9.3 Is the Proposed Designated Proponent an Organisation or Individual?



Organisation

9.5 Organisation

9.5.1 Job Title

Managing Director

9.5.2 First Name

Darwin

9.5.3 Last Name

King

9.5.4 E-mail

darwin.king@pacifiqcommunities.com

9.5.5 Postal Address

12 Nerang Street
Nerang QLD 4211
Australia

9.5.6 ABN/ACN

ACN

105107828 - PACIFIC INTERNATIONAL DEVELOPMENT CORPORATION PTY LTD

9.5.7 Organisation Telephone

+61 7 5500 4887

9.5.8 Organisation E-mail

enquiries@pacifiqcommunities.com

Proposed designated proponent - Declaration

I, Darwin King, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.



Signature:..... Date: 27/11/17

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Senior Environmental Planner

9.8.2 First Name

Jordan

9.8.3 Last Name

Bachmann

9.8.4 E-mail

jordanbachmann@saundershavill.com

9.8.5 Postal Address

9 Thompson Street
Bowen Hills QLD 4006
Australia

9.8.6 ABN/ACN

ABN

24144972949 - Saunders Havill Group Pty Ltd

9.8.7 Organisation Telephone

1300 123 744

9.8.8 Organisation E-mail

mail@saundershavill.com

Referring Party - Declaration



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

Signature: *Jordan Bachmann* Date: 27/11/2017



Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. 001_referral_area.shp
2. 002_suitable_habitat.shp
3. 8020_impact_assessment_technical_note.pdf
4. 8020_pidc_trust_-_trust_deed.pdf
5. 20171115_flinders_residential_development_referral_ear_part1.pdf
6. 20171115_flinders_residential_development_referral_ear_part2.pdf
7. concurrence_agency_response_with_conditions.pdf
8. lcc_docs-10146478-v1-mcui_38_2015_-_approved_plan_of_development.pdf
9. lcc_docs-10146489-v1-mcui_38_2015_-_signed_development_conditions.pdf