Australian Government
Department of the Environment and Energy

Title of Proposal - Lot 131 Jandakot Road, Treeby

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.

Lot 131 Jandakot Road, Treeby ('the site') is proposed to be partially developed for residential purposes (Figure 1). The site is approximately 65 ha ha in size and is located approximately 18 km south of Perth's Central Business District (CBD) within the City of Cockburn local government area. The proposed residential development will have a footprint of approximately 29.52 ha ('development footprint') (Figure 2).
The site is zoned 'Rural - Water Protection' under the State's Metropolitan Region Scheme (MRS) and is zoned 'Resource Zone' under the City of Cockburn's Town Planning Scheme No. 3 (TPS 3). The project will require an amendment to the MRS to rezone portions of the site to 'Urban' to facilitate development.
The site is part of the Treeby District Structure Plan (DSP) area which identifies the site for Residential and Public Open Space (including regional conservation values).
The development of the site will involve the clearing of 6.77 ha of the Banksia Woodlands TEC, 7.00 ha of Black Cockatoo foraging habitat and three potential breeding trees (Eucalyptus todtiana). Five occurrences of Declared Rare Flora (DRF) Caladenia huegelii will not be cleared. The remaining remnant native vegetation within the site is within Bush Forever Site 390 and will be provided to the local authority as an offset for the proposed action.
Figure 2 identifies that the northern portion of the lot does not form part of this referral. This portion of land is expected to be resumed for the purposes of upgrading Jandakot Road to a regional road in the future. This action is considered to be separate from the currently referred action (residential development). The reasons for this are that the development of the regional road is the responsibility of the City of Cockburn and that the road would be upgraded whether the currently referred action proceeded or not.
In addition to the EPBC Act Referral to address Matters of National Environmental Significance (MNES), a Native Vegetation Clearing Permit (NVCP) will be required to clear native vegetation within the site and will address matters of State importance.

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

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Area	Point	Latitude	Longitude
Lot 131 Jandakot Road, Treeby	1	-32.118430053761	115.88642462392
Lot 131 Jandakot Road, Treeby	2	-32.118510925339	115.88804575209
Lot 131 Jandakot Road, Treeby	3	-32.11859161715	115.88864184555
Lot 131 Jandakot Road, Treeby	4	-32.118834051544	115.88940488031
Lot 131 Jandakot Road, Treeby	5	-32.119278210111	115.88992930587
Lot 131 Jandakot Road, Treeby	6	-32.120106188745	115.89076379506
Lot 131 Jandakot Road, Treeby	7	-32.12046965326	115.8912405839
Lot 131 Jandakot Road, Treeby	8	-32.120954149829	115.89217055868
Lot 131 Jandakot Road, Treeby	9	-32.121317610967	115.89312413899
Lot 131 Jandakot Road, Treeby	10	-32.12178211104	115.89443541702
Lot 131 Jandakot Road, Treeby	11	-32.126809877378	115.88868948226
Lot 131 Jandakot Road, Treeby	12	-32.123801282489	115.88077417606
Lot 131 Jandakot Road, Treeby	13	-32.118409881334	115.88642462392
Lot 131 Jandakot Road, Treeby	14	-32.118430053761	115.88642462392
Development Footprint	1	-32.119258078047	115.88562378707
Development Footprint	2	-32.118640179308	115.8877159101
Development Footprint	3	-32.118858261693	115.88855275932
Development Footprint	4	-32.119149037397	115.88913211646
Development Footprint	5	-32.120230351416	115.89093456092
Development Footprint	6	-32.120448430002	115.89123496833
Development Footprint	7	-32.120566555685	115.89139590087
Development Footprint	8	-32.120475689789	115.89127788367
Development Footprint	9	-32.121965879067	115.89022645774
Development Footprint	10	-32.122665532712	115.88982949081
Development Footprint	11	-32.123628683501	115.88940033736
Development Footprint	12	-32.124446445058	115.88849911514
Development Footprint	13	-32.125164251942	115.88803777518
Development Footprint	14	-32.125418663152	115.88767299476
Development Footprint	15	-32.124673599746	115.88568816009
Development Footprint	16	-32.12564581542	115.88565597358
Development Footprint	17	-32.125527696311	115.88531801524

Area	Point	Latitude	Longitude
Development Footprint	18	-32.124600910308	115.88541457477
Development Footprint	19	-32.124019392715	115.88543603244
Development Footprint	20	-32.123356094687	115.88565060916
Development Footprint	21	-32.122951753112	115.88579008403
Development Footprint	22	-32.1226700759	115.88581690612
Development Footprint	23	-32.122131706275	115.88596979203
Development Footprint	24	-32.121886372354	115.88592687669
Development Footprint	25	-32.121677383679	115.88581958833
Development Footprint	26	-32.1215047405	115.88555136743
Development Footprint	27	-32.12135027001	115.88515440049
Development Footprint	28	-32.121141280108	115.8847681624
Development Footprint	29	-32.120914116627	115.88437119546
Development Footprint	30	-32.120768731703	115.8841458899
Development Footprint	31	-32.120532480707	115.88422099176
Development Footprint	32	-32.119287609035	115.88551918092
Development Footprint	33	-32.119251262178	115.88563719812
Development Footprint	34	-32.119258078047	115.88562378707

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).

Lot 131 Jandakot Road, Treeby is located within the City of Cockburn local government area, located approximately 18 km south of Perth's CBD. The entire site is zoned 'Rural - Water Protection' under the MRS and refers to rural land over public groundwater areas. The purpose of this zone is to control land uses to avoid contamination of the public drinking water source and only low risk land development is compatible in this zone (WAPC 2015).

The middle portion of the site has been historically cleared and mined for sand. Limited and unsuccessful revegetation has been undertaken within this area. The remainder of the site contains remnant vegetation and comprises of several tracks.

The areas immediately adjacent of the site to the north, east and south are zoned 'Rural - Water Protection' under the MRS and 'Resource Zone' under the TPS 3. The area abutting the site to the west is zoned 'Urban' under the MRS and is part of the Treeby Calleya Estate Structure Plan area. Several areas surrounding the site to the north, south and east include several Bush Forever sites, Regional Parks, Department of Biodiversity Conservation and Attractions (DBCA) Managed Lands and geomorphic wetlands. Land uses in the surrounding area include highly urbanised residential development to the east and rural residential properties to the north, west and south of the site.

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

64.75 hectares

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. Lot 131 Jandakot Road, Treeby

1.8 Primary Jurisdiction.

Western Australia

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.

Andrew Trosic

1.10.1.2 E-mail

atrosic@cockburn.wa.gov.au

1.10.1.3 Telephone Number

(08) 9411 3444

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

Start date 06/2018

End date 12/2030

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

The site included within the Treeby District Structure Plan (DSP) area. The DSP area has been identified by the City of Cockburn as a key initiative as a result of recent urban development within the surrounding area and changes to the Metropolitan Strategic Planning Framework over the locaility of Banjup. The Treeby DSP has been prepared and recently lodged with the City of Cockburn for adoption. Upon approval of the Structure Plan, the site will require an MRS amendment to rezone a portion of the site to 'Urban' to support residential development.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

N/A

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.

N/A

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
Carnaby's Cockatoo (Calyptorhynchus	A Black Cockatoo Habitat Assessment was

Species	Impact
latirostris) Forest Red-tailed Black Cockatoo (Calyptorhynchus banksii naso) Baudin's Cockatoo (Calyptorhynchus baudinii)	undertaken for the site on 7 December 2017 by 360 Environmental. The Survey considered Carnaby's Cockatoo, Forest Red-tailed Black Cockatoo and Baudin's Cockatoo listed under the EPBC Act. The site was identified as providing little value for Black Cockatoo breeding and roosting. A total of 10 potential breeding trees were identified within the entire surveyed area consisting of three Jarrah and seven Eucalyptus todtiana trees. One Jarrah tree contained two hollows of suitable size to support Black Cockatoo breeding, however were occupied with feral bees and unlikely to be utilised by the Black Cockatoos in the near future. A second Jarrah tree was recorded to have a potential breeding hollow, however it has an entrance diameter smaller than 120 mm and considered unsuitable for breeding. The Black Cockatoo Habitat Assessment identified a total of 28.24 ha of quality foraging habitat of which, 7 ha is proposed to be cleared. The Black Cockatoo foraging habitat identified predominately consists of Banksia Woodlands, which is important foraging habitat for the Carnaby's Cockatoo. Carnaby's Cockatoo feed on a variety of native and exotic plants. Food plants include Banksia, Pine trees, Marri, Jarrah, Grevillea, Allocasuarina and Hakea species. To a lesser extent, they feed on Karri and Sheoak (Allocasuarina fraseriana) (Johnstone & Storr 1998). The Project will involve the clearing of 7.00 ha of Black Cockatoo foraging habitat and 21.24 ha will be retained within the balance of title. Baudin's Cockatoos forage primarily in eucalypt forests or woodlands, where they feed on Marri seeds, flowers, nectar and buds. The species also feed on a range of seeds of Eucalyptus, Banksia, Hakea and Pines as well as fruiting apples and pears (Shah 2006; Johnstone & Storr 1998). The Banksia Woodlands foraging habitat within the site is considered to be of valuable habitat for Baudin's Cockatoo. However, the site is within the northernmost extremity of the species' distribution. It is likely that the importance of this habitat for Baudin's

Species	Impact
	Cockatoo is considered lower than that for Carnaby's Cockatoo. Forest Red-tailed Black Cockatoos primarily forage on Jarrah (Eucalyptus marginata), Marri, Sheoak and Blackbutt (Johnstone & Storr 1998). A Jarrah-Marri forest makes up 90% of the Forest Red-tailed Black Cockatoos' diet (Cooper et al. 2002). Forest Red-tailed Black Cockatoos would only utilise Jarrah, Marri or Blackbutt species within the site, however, compared to other foraging species present within the site, these foraging species would be less suitable for the Forest Red-tailed Black Cockatoos. The Black Cockatoo Habitat Assessment identified only seven individual Jarrah trees occurring sporadically within the entire lot, of which three had a DBH > 500 mm, considered minimal habitat for the Forest Red-tailed Black Cockatoo. One potential breeding Jarrah tree (DBH of >500 mm) and one non-significant Jarrah tree (DBH of < 500 mm) occur within the development footprint. The one potential breeding Jarrah tree will be retained within POS and the non-significant Jarrah tree (DBH<500 mm) will be cleared. As the site contains limited suitable habitat for the Forest Red-tailed Black Cockatoo, it is considered unlikely that the clearing of one non-significant Jarrah tree would have an impact on the species.
Grand Spider Orchid (Caladenia huegelii)	A Level 2 Flora and Vegetation Survey and two targeted flora surveys were undertaken in 2014, 2016 and 2017, respectively, by an experienced Botanist at 360 Environmental. Caladenia huegelii is a tuberous, perennial orchid that grows to a height of 0.6 m and is easily recognisable during its flowering period between September and October (WAH 2014). Outside of this period, C. huegelii remains as an underground tuber and is often difficult to detect. Throughout its range, the species tend to favour areas of dense undergrowth in deep grey-white sand associated with the Bassendean land system. Five individuals of C. huegelii were located in the southern portion of the site in one cluster. The proposed development footprint has been designed to

Species	Impact
	avoid conservation significant flora and vegetation where possible and as such, the cluster of C. huegelii will not be cleared as part of the proposed development. These species will remain in their existing locations and will have a minimum separation distance of 10 m from urban development.
Banksia Woodlands of the Swan Coastal Plain threatened ecological community (TEC)	Banksia Woodlands of the Swan Coastal Plain ecological community is listed as Endangered under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). A Level 2 Flora and Vegetation Survey was undertaken by 360 Environmental in August 2014 and a subsequent TEC statistical desktop assessment determined that the Banksia Woodlands TEC occurs within the site. The statistical analysis identified most of the vegetation associations as having affiliation to floristic community type (FCT) 23a and is considered the most likely associated with the site. FCT 23a is listed as a sub-community of the Banksia Woodlands TEC. The FCT 23a must meet key diagnostic criteria to be considered a TEC. In regards to the presence of the Banksia Woodlands TEC, the Approved Conservation Advice (DEE 2016) provides the condition thresholds. Based on the survey results and condition thresholds within the Approved Conservation Advice, the vegetation within the site is considered to represent the Banksia Woodlands TEC and equates to 23.98 ha. The development of Lot 131 Jandakot Road, Treeby will involve the clearing of 6.77 ha of Banksia Woodlands TEC and 17.21 ha will remain in the balance of title/Bush Forever Site 390.

2.4.2 Do you consider this impact to be significant?

No

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 any part of the environment in the Commonwealth marine area?

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.

FLORA

A Level 2 Flora and Vegetation Survey was undertaken for the Site on three seperate occasions (8 September, 2 October and 28 October 2014). A total of 98 taxa (including species, subspecies, varieties and forms) from 76 genera and 33 families were recorded in the site. The commonly occurring families were; Myrtaceae (12 taxa), Fabacaea (6 taxa), Orchidaceae (6 taxa), Asteraceae (6 taxa) and Proteaceae (6 taxa) (360 Environmental 2018a). Two subsequent targeted surveys were undertaken in Spring 2016 and 2017 by 360 Environmental.

During the surveys, one Threatened species pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and gazetted Declared Rare Flora (DRF) pursuant to the State *Wildlife Conservation Act 1950* (WC Act) was identified during the survey:

- Grand Spider Orchid (*Caladenia huegelii*).

Five individuals of the species were recorded in one cluster in the southern portion of the site (Figure 3). The vegetation within the buffers of these conservation significant flora are considered critical habitat and regarded as Environmentally Sensitive Areas (ESAs).

Drakaea micrantha was also considered during the 2016 and 2017 surveys. *D. micrantha* is a tuberous, perennial orchid that grows to 0.3 m high with a small, smooth prominently veined heart-shaped leaf and flowers September to October. No specimens were located during the three field visits. Given targeted searches were undertaken in the known preferred habitats and during the flowering this species is unlikely to occur within the site (360 Environmental 2018a).

Eremophila glabra subsp. chlorella is a prostrate and spreading or sprawling shrub, between 0.2-1 m high. It favours sandy clay in winter-wet depressions. *Eremophila glabra subsp. chlorella* is found in scattered populations between Cannington and Eneabba, growing in sandy-clay soils in winter-wet depressions (Brown and Buirchell 2011). Associated species include *Casuarina obesa, Viminaria juncea, Melaleuca lateritia, M. acutifolia, M. rhaphiophylla, M. viminea, M. teretifolia, M. brevifolia, Chorizandra enodis, Eucalyptus wandoo, E. loxophleba, Acacia saligna, A. microbotrya, Banksia telmatiaea, B. nivea subsp. nivea, Regelia ciliata, Petrophile seminuda, Verticordia densiflora var. densiflora* and *Calothamnus hirsutus* (DPaW 2016). Although a few of the associated species occur in the Survey Area, no specimens have been located during the surveys (360 Environmental 2018a).

No other Threatened species pursuant to the EPBC Act and/or gazetted under the WC Act were recorded during the surveys. No Priority listed species by the Department of Biodiversity Conservation and Attractions (DBCA) were recorded during the surveys (360 Environmental 2018a).

FAUNA

Desktop searches of the PMST and NatureMap databases identified a number of conservation significant fauna species as potentially occurring within a 5 km radius of the site. A number of species returned in the databases were historical records of extinct species (ie. Malleefowl) and these have been omitted from further discussion.

A likelihood assessment was undertaken to determine the likelihood of these fauna species occuring within the site based on suitable habitat present and the species known distributions (Table 2 of the attached supporting document).

The likelihood assessment identified 31 conservation significant fauna species as potentially occurring within the site. The likelihood assessment identified the site is likely to offer suitable habitat for the following species:

- Carnaby's Cockatoo (*Calyptorhynchus latirostris*);

- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*); and

- Baudin's Cockatoo (*Calyptorhynchus baudinii*);

Black Cockatoos

A Black Cockatoo Habitat assessment was undertaken by 360 Environmental within the site on 7 December 2017 by an experienced zoologist. The survey considered Carnaby's Cockatoo (*Calyptorhynchus latirostris*), Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) and Baudin's Cockatoo (*Calyptorhynchus baudinii*) listed under the EPBC Act.

The survey included an assessment of the potential foraging and breeding habitats within the site for the Black Cockatoos. During the survey, no Black Cockatoos were heard or observed flying overhead (360 Environmental 2018b).

Black Cockatoo Foraging Habitat

The Black Cockatoo Habitat Assessment identified 28.24 ha of foraging habitat (360 Environmental 2018b). The foraging habitat includes the following four natural vegetation associations (Figure 4a):

BaEt - Low woodland of *Banksia attenuata, Eucalyptus todtiana* and *Allocasuarina fraseriana* over *Xanthorrhoea preissii, Macrozamia riedlei, Hibbertia hypericoides, Hibbertia racemosa, Patersonia occidentalis* and *Desmocladus flexuosus*.

KgMp -Tall Closed shrub of *Kunzea glabrescens* with *Melaleuca preissiana* and *Banksia ilicifolia* over open understorey.

BaRi - Low open woodland of *Banksia attenuata* and *Banksia ilicifolia* over *Regelia inops, Xanthorrhoea preissii, Patersonia occidentalis, Schoenus caespititius* and *Platysace compressa.*

BaMp - Low woodland of *Banksia attenuata, Banksia ilicifolia, Banksia menziesii* and *Melaleuca preissiana* over *Kunzea glabrescens, Hypocalymma angustifolium, Patersonia occidentalis, Dasypogon bromeliifolius* and *Bossiaea eriocarpa.*

Evidence of foraging was in the form of chewed Banksia flower spikes observed at seven different locations, however, this evidence appeared to be old and did not necessarily indicate current use of the site by Carnaby's Cockatoo. In addition, there was evidence of foraging on *Eucalyptus todtiana* fruit observed at one location near the northern boundary of the site. Although this is potential foraging evidence for the Forest Red-tailed Black Cockatoo, the species was not able to be clearly identified based on the dentition marks left on the *E. todtiana* nuts (Figure 4b) (360 Environmental 2018b).

Black Cockatoo Potential Breeding and Roosting Habitat

The Black Cockatoo Habitat Assessment identified three Jarrah trees which are considered to be potential breeding trees and have the potential to develop hollows and be used for breeding by the species in the future. Two of these trees contained hollows. One tree contained a hollow that was too small to be suitable for Black Cockatoo breeding and one tree containing two hollows with openings greater than 120 mm, although both hollows were occupied by feral bees (Figure 4c) (360 Environmental 2018b).

The site contains suitable habitat which is important to all three threatened Black Cockatoo species, however, no Black Cockatoos were heard or observed flying overhead during the survey. In addition, the lack of suitable hollows in potential breeding trees and the lack of recent foraging evidence suggests that the site is not a primary breeding or foraging habitat and may not be extensively utilised by the species (360 Environmental 2018b).

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

Surface Water

Review of available surface water feature mapping did not identify any known watercourses, rivers, creeks or streams that intersect the site (DoW 2007).

Wetlands of the Swan Coastal Plain have been described and mapped by Hill *et al.* (1996) and assigned a management category reflecting their condition. Mapping undertaken by the (then) Department of Parks and Wildlife (DPaW) has identified a Resource Enhancement wetland (REW) UFI 13328 occurring on the eastern third of the site (DPaW 2017) (Figure 5). REWs are characterised as having moderate natural and human use attributes that can be restored or enhanced (WAPC 2005).The REW is not listed as a Ramsar Site or listed under the Directory of

Important Wetlands (DoE 2008).

Groundwater

Groundwater levels range from 2.0 m below ground level (mbgl) from the eastern portion of the site to up to 15.8 mbgl in the middle of the site (DWER 2017a).

Public Drinking Water Source Area

The Site is located within the Jandakot Underground Water Protection Control Area (UWPCA) and is subject to the provisions of the Statement of Planning Policy 2.3 - *Jandakot Groundwater Protection Policy* and the *Water Quality Protection Note 25: Land use compatability tables for public drinking water source areas* (WQPN 25) (DoW 2016a). The site is within the Priority 2 classification (DWER 2017a). The WQPN 25 sets out the Priority system (DoW 2016b):

- Priority 1 (P1) areas are defined and managed to ensure there is no degradation of the quality of the drinking water source with the objective of risk avoidance. P1 areas occur within PDWSAs where the existing land uses have low risks to PDWSAs.

- Priority 2 (P2) areas are defined and managed to maintain or improve the quality of the drinking water source with the objective of risk minimisation. P2 areas occur within PDWSAs where the land is zoned 'Rural' and the risks need to be minimised.

- Priority 3 (P3) areas are defined and managed to maintain the quality of the drinking water source for as long as possible with the objective of risk management. P3 areas occur within PDWSAs where the land is zoned for urban and commercial or light industrial uses.

Reclassification of the PDWSA from P2 to P3 is addressed through the planning process via the rezoning of the site from 'Rural - Water Protection' to 'Urban' under the MRS.

No well-head protection zones exist within or intercept the site (DWER 2017a).

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

SOIL CHARACTERISTICS

1:250,000 surface geology profile mapping indicates the geology of the site is typically Bassendean Sand: basal conglomerate overlain by dune quartz sand with heavy mineral concentrations (GSWA 2008). The site is within the Bassendean System characterised as sand dunes and sandplains with pale deep sand, semi-wet and wet soil (DAFWA 2012).

Soil subsystem mapping undertaken by the (then) Department of Agriculture and Food WA (DAFWA) has identified the following three soil subsystems within the site (Figure 6) (DAFWA 2006):

- Bassendean B1 Phase: Extremely low to very low relief dunes, undulating sandplain with

discrete sand rises. Deep, bleached grey sands sometimes with a pale yellow B horizon or a weak iron-organic hardpan at depths generally greater than 2 m.

- Bassendean B2 Phase: Flat to very gently undulating well drained sandplain of the surface. Well to moderately well drained deep bleached grey sands with a pale yellow B horizon or a weak iron-organic hardpan at 1-2m.

- Bassendean B4 Phase: Broad poorly drained sandplain with deep grey siliceous sands or bleached sands, underlain at depths generally greater than 1.5 m by clay or less frequently a strong iron-organic hardpan.

Acid Sulfate Soils

Acid Sulfate Soils (ASS) mapping undertaken by the (then) Department of Environment Regulation indicates that the site is mapped as having 'moderate to low risk of ASS' within the first 3 m of natural soil surface and 'high to moderate' risk beyond 3 m (DER 2016).

VEGETATION CHARACTERISTICS

Bioregion

The site is within the Swan Coastal Plain bioregion and the Perth sub-region (SWA02) of the Interim Biogeographic Regionalisation of Australia (IBRA). The SWA02 sub-region is a low lying coastal plain composed of colluvial and Aeolian sands, alluvial river flats and coastal limestone rising to duricrusted Mesozoic sediments in the east. Outwash plains are extensive only in the south, while a complex series of seasonal wetlands and swamps extends from north to south. Vegetation comprises heath and/or Tuart woodlands on limestone, Banksia and Jarrah-Banksia woodlands on Quaternary marine dunes of various ages, Marri on colluvial and alluvial soils, *Casuarina obesa* on out-wash plains, and paperbark (*Melaleuca spp.)* in wetland areas (Mitchell *et al.* 2002).

Broad Vegetation Types

Mapping of the vegetation of Perth, Western Australia was completed on a broad scale (1:250,000) by Beard (1981). These vegetation units were then reassessed by Shepherd *et al.* (2001) to account for clearing in the intensive land use zone, dividing some larger vegetation units into smaller units.

There is one Beard/Shepherd vegetation unit described for the site:

- Bassendean 1001: Medium very sparse woodland; Jarrah with low woodland; *Banksia* and *Casuarina*

The Environmental Protection Authority (EPA)'s Guidance Statement No. 33 Environmental Guidance for Planning and Development has set a threshold for the retention of 10% of the pre-existing extent of native vegetation within constrained areas (EPA 2008). The site is considered to be constrained as it is within the Perth Metropolitan Region and is adjacent to urban areas.

The current extent of Bassendean 1001 association is greater than the 10% threshold (Government of Western Australia 2016).

Mapping by Heddle *et al*. (1980) is based on the relationship of landform-soil units determined by Churchward and McArthur (1980). The mapping identified one Heddle vegetation complex across the site:

- Bassendean Complex - Central and South: Woodland to low woodland and sedgelands. Vegetation ranges from woodland of *E. marginata – A. fraseriana- Banksia spp.* to low woodland of Melaleuca species, and sedgelands on the moister sites. This area includes the transition of *E. marginata* to *E. todtiana* in the vicinity of Perth.

Surveyed Vegetation Associations

A Level 2 Flora and Vegetation Assessment was undertaken in September and October 2014 and identified six natural vegetation associations (Figure 7) (360 Environmental 2018a):

-BaEt: Low woodland of *Banksia attenuata, Eucalyptus todtiana* and *Allocasuarina fraseriana* over *Xanthorrhoea preissii*, *Macrozamia riedlei, Hibbertia hypericoides, Hibbertia racemosa, Patersonia occidentalis* and *Desmocladus flexuosus* (21.89 ha)

- KgMp: Tall Closed Shrub of *Kunzea glabrescens* with *Melaleuca preissiana* and *Banksia ilicifolia* over open understorey (4.01 ha)

- Ri: Closed heath of *Regelia inops* with occasional *Melaleuca preissiana* and/or *Banksia ilicifolia* over *Hypocalymma angustifolium*, *Euchilopsis linearis, Kunzea glabrescens* and *Lyginia imberbis* (9.47 ha)

- BaRi: Low Open Woodland of *Banksia attenuata* and *Banksia Ilicifolia* over *Regelia inops, Xanthorrhoea preissii, Patersonia occidentalis, Schoenus caespititius* and *Platysace compressa* (0.95 ha)

-MpHa: Low Woodland of *Melaleuca preissiana* over Closed Heath of *Hypocalymma angustifolium, Astartea scoparia, Pericalymma ellipticum var. ellipticum*, *Hypolaena exsulca* and *Lyginia imberbis* (0.48 ha)

- **BaMp:** Low Woodland of *Banksia attenuata, Banksia ilicifolia, Banksia menziesii* and *Melaleuca preissiana* over *Kunzea glabrescens, Hypocalymma angustifolium, Patersonia occidentalis, Dasypogon bromeliifolius* and *Bossiaea eriocarp*a (2.02 ha).

- Rehab: Tall Open Shrubland of *Adenanthos cygnorum, Kunzea glabrescens, Acacia rostellifera, Calothamnus quadrifidus* and *Lyginia imberbis* (24.76 ha)

Vegetation Condition

Vegetation condition ranged from Completely Degraded to Excellent, with 37.51 ha of vegetation considered to be in Excellent to Good condition (Figure 7). Historical sand extraction

has been the main disturbance with approximately 25 ha being cleared, which has since been rehabilitated. The rehabilitation has not been very successful given the low diversity and density of native species. For these reasons the majority of the rehabilitation is considered to be in a Degraded to Completely Degraded condition. Invasive weed species and tracks were also commonly noted in the Survey Area. The average fire age of the vegetation was considered very old (>12 years since last fire) (Figure 8) (360 Environmental 2018a).

Excellent: 30.71 ha

Very Good: 2.13 ha

Very Good - Good: 1.78 ha

Good: 2.89 ha

Degraded: 1.90 ha

Degraded - Completely Degraded: 11.12 ha

Completely Degraded: 14.35 ha

Floristic Community Types:

Statistical analysis (multivariate analysis) and data interpretation determined the following the Floristic Community Types (FCTs) represented by the vegetation within the site (Figure 9) (360 Environmental 2018a):

- **FCT SCP 23a:** Central *Banksia attenuata - B. menziesii* woodlands;

- **FCT SCP 4:** *Melaleuca preissiana* damplands;

FCT SCP 23a is listed as a sub-community of the Threatened Ecological Community (TEC), Banksia Woodlands of the Swan Coastal Plain (DotEE 2016).

Threatened Ecological Communities (TEC):

Vegetation associations BaEt and BaRi have been determined to have affiliation with FCT SCP23a - Central *Banksia attenuata - B. menziesii* woodlands, which is listed as a sub-community of the Banksia Woodlands of the Swan Coastal Plain TEC. Vegetation association BaMp, as not been identified as FCT SCP23a but has a dominant Banksia tree canopy, therefore would also be affiliated with the Banksia Woodlands vegetation type. As such, approximately 23.98 ha of the site contains the Banksia Woodlands TEC (Figure 13).

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

Remnant native vegetation partially covers the site and is mapped as Bush Forever Site 390 - Fraser Road Bushland, Banjup (Figure 11) (DoP 2014b). Bush Forever Site 390 has been identified has 'Bush Forever Area - Urban, industrial and resource development' category under State Planning Policy 2.8 - *Bushland Policy for the Perth Metropolitan Region* (WAPC 2010). SPP 2.8 recognises that regionally significant bushland in this category is constrained by existing commitments, approvals and policies. Therefore, development proposals should seek to acheive a reasonable balance between conservation and development or resource extraction through a negotiated outcome which has regard for the specific conservation values involved (WAPC 2010).

No Regional Parks or Department of Biodiversity Conservation and Attractions (DBCA) Managed Lands intersect the site. There are several DBCA Managed Lands located in excess of 400 m to the north, south and east of the site (DPAW 2016).

Two regional ecological linkages (No. 46 and 47) intersect the site, connecting Bush Forever Site 389 to the north with Bush Forever Site 344 to the south and Bush Forever Site 344 to the south east (Figure 11). The retention of native vegetation and fauna habitat within regional ecological linkages aims to reduce the loss of biodiversity and key ecological functions across the southwest (Molly *et al.* 2009).

Environmentally Sensitive Areas (ESAs) are identified and protected under the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005.* Under the notice, it is an offence to kill or destroy vegetation within an ESA. Mapping undertaken by the Department of Environmental Regulation and Water (DWER) identifies the entire site is within the extent of two ESAs and is therefore not exempt to apply for a native vegetation clearing permit (NVCP) (DER 2017). According to DWER's Clearing Permit System Map, the ESAs refer to presence of Declared Rare Flora (DRF) in the southern portion of the site and the Bush Forever Site and associated buffers (Figure 11) (DWER 2017b).

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

Vegetation condition within the entire site ranges from Completely Degraded to Excellent, with 37.51 ha of vegetation considered to be in Excellent to Good condition (Figure 8). Historical sand extraction at the site has been the main dusturbance activity involving 25 ha of vegetation to be cleared, which has since been rehabilitated. The rehabilitation of the sand extraction site has not been successful given the low diversity and density of native species planted. For these reasons, the majority of the rehabilitation is considered to be in a Degraded to Completely Degraded condition (360 Environmental 2018a).

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

The topography is variable across the site and ranges from 29 m Australian Height Datum

(AHD) to 41 m AHD.The central portion of the site has been used for sand extraction and therefore the natural landform and elevation has been significantly altered.

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

Native vegetation condition within the site varied from Completely Degraded to Excellent, with majority of the site considered to be in Excellent condition (57.01%) (Figure 8).

The extent of each vegetation condition within the site are presented below (360 Environmental 2018a):

Excellent: 30.71 ha / 47.33%

Very Good: 2.13 ha / 3.28%

Very Good - Good: 1.78 ha / 2.74%

Good: 2.89 ha / 4.46%

Degraded: 1.90 ha / 2.93%

Degraded - Completely Degraded: 11.12 ha / 17.14%

Completely Degraded: 14.35 ha / 22.12%

The average fire age of the vegetation was considered to be very old (>12 years since the last fire) (360 Environmental 2015).

In addition to historical sand extraction activities, invasive weed species and tracks were commonly noted disturbances within the site. A total of 11 introduced species were observed within the site. One of these taxa, Arum lily *(*Zantedeschia aethiopica)* is listed as Declared under the *Biosecurity and Agriculture Management Act 2007* (BAM Act). None of the weed species are listed as Weeds of National Significance (WONS):

- Sydney Golden Wattle *(*Acacia longifolia);*

- Silvery Hairgrass *(*Aira caryophyllea);*

- Pimpernel *(*Lysimachia arvensis);*

- Blowfly Grass *(*Briza maxima);*

- Annual veldt grass *(*Ehrharta brevifolia);*

- Pink Gladiolus *(*Gladiolus caryophyllaceus);*

- Rose pelargonium *(*Pelargonium capitatum);*

- Sowthistle *(*Sonchus oleraceus*);

- Ursinia *(*Ursinia anthemoides*); and

- Arum lily *(*Zantedeschia aethiopica*).

Arum lily is a rhizomatous perennial herb that occurs on and near swamps and rarely uplands (WAH 2015). Arum lily is of concern as it can impede water flow in the wet swampy habitats it grows in (Hussey *et al.* 2007).

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

There are no Commonwealth, World or State Registered Heritage Places within the vicinity of the site (DotEE 2017; SHO 2017).

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

No Registered Aboriginal Heritage sites exist within the vicinity of the site. One Lodged Aboriginal Heritage Site is located 30 m southeast of the site boundary (Figure 11):

- Banjup:Calsil (ID 3301) - Artefacts/Scatter, camp.

The status of this place is 'Stored Data/Not a site', which means it has been assessed as not meeting Section 5 of the *Aboriginal Heritage Act 1972* (DPLH 2017).

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

Lot 131 Jandakot Road, Treeby (freehold) / Lot 131 on Plan 226007

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

The site historically contained a sand quarry which was not administered under a mining tenement at the time and has since been rehabilitated. The remainder of the site consists of bushland, tracks and cleared areas that are unused. As a result of past land uses and unsuccessful rehabilitation, a large portion of the site has been, and remains, extensively disturbed.

Review of historical aerial imagery has identified that the site contains some remnant native vegetation (Figures 12a-g). The earliest available aerial image is from 1953 which identifies areas to the southwest and southeast as wet, with some cleared tracks and a cleared pocket in the south-west corner of the site. Between 1953 and 1965, some previously cleared areas appears to have regrown. Subdivision and clearing for lot boundaries is apparent in the 1974 aerial. Between 1974 and 1985, clearing occured within the wetland in the eastern portion of the site, additional tracks were established and a portion of the south-west corner of the site was cleared. Some vegetation regrowth has occurred along the southern boundary line during this time. The surrounding lots were partially cleared of vegetation, with lots to the north and west used for sand quarrying. By 1995, vegetation within the previously cleared wetland and south-west corner have had some regrowth. Further clearing has occurred in adjacent lots to the north and south for continued sand quarrying. Between 1995 and 2005, the central portion of the site was cleared of vegetation and used for sand extraction purposes, similarly, adjacent lots to the south have been partially cleared for sand quarries. By 2005 most of the vegetation previously cleared in the wetland and the south-west corner has regrown and some surrounding lots have been subdivided and rural residential development had started. Between 2005 and 2017, sand quarrying within the site had ceased and rehabilitation of quarry had been undertaken. Surrounding lots to the east, north and west of the site have had further subdivision and residential development.

The development footprint is proposed to be developed for urban residential development. The remainder of the site consisting of remnant native vegetation within Bush Forever 390 will be provided to the relevant local authority as an offset of the proposed action within the development footprint.

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.

The proposed development has been designed to avoid Matters of National Environmental Significance (MNES) by developing in previously cleared and rehabilitated areas within the site:

Banksia Woodlands TEC: 6.77 ha (28.23%) to be cleared, 17.21 ha (71.77%) to be avoided

Black Cockatoo Foraging Habitat: 7.00 ha (24.79%) to be cleared, 21.24 ha (75.21%) to be avoided

Black Cockatoo potential Breeding Habitat: A total of four potential breeding trees (one Jarrah and three *Eucalyptus todtiana*) occur within the development footprint. The one Jarrah tree will be retained within POS as part of the development and the three *Eucalyptus todtiana* trees will be cleared. All remaining potential breeding trees occurring outside the development footprint (two Jarrah and four *Eucalyptus todtiana*) will not be cleared.

The remaining remnant native vegetation consisting of 21.24 ha of Black Cockatoo Habitat and 17.21 ha of Banksia Woodlands TEC will be provided to the local authority as an offset for the proposed action.

Caladenia huegelii: All five individuals will be avoided and will have a minimum seperation distance of 10 m from urban development (road reserve)

The entire site is mapped as an Environmentally Sensitive Area (ESA) and will require assessment by the Department of Water and Environmental Regulation (DWER) for a Native Vegetation Clearing Permit (NVCP) whereby impacts to State environmental issues will be addressed through this approval process.

The following management measures will be implemented to ensure potential impacts from the development are avoided:

Vegetation Clearing

- Infill planting within degraded areas where vegetation structure has been previously removed;

- Control and replacement of weed species with native vegetation and/or herbicide treatment prior to revegetation works;

- Staged clearing to occur in the direction of retained vegetation to allow any fauna species to escape to nearby habitats;

- Clearing to occur outside of the breeding period for conservation significant avian species, where possible;

- The occurences of *Caladenia huegelii* will be separated by a minimum of 10 m from the proposed road reserve. The *C. huegelii* individuals and surrounding critical vegetation will be clearly marked and fenced prior to clearing and during construction activities to ensure the DRF species and associated vegetation are not cleared or trampled.

- Prior to clearing, all areas of native vegetation to be retained should be clearly demarcated with star pickets, coloured tape or bunting, or fencing and all site personnel shall be inducted and made aware of the requirement to protect native vegetation in these areas;

- Vegetation to be retained within Bush Forever 390 will be fenced for protection from proposed urban development;

- No dead standing or fallen timber shall be removed unnecessarily. Logs and other debris resulting from land clearing should be placed in retained vegetation to enhance fauna habitat;

- Vegetation clearing will be scheduled to occur immediately before planned earthworks to minimise the potential for dust, where practicable;

- Disturbed areas will be treated with dust suppressants (water trucks or chemical suppressants) especially in high risk areas and/or on during high risk days; and

- Semi-permanent dust control treatmnets (e.g. hydromulching, dust stabilisers, tarps or geo-textile materials) will be implemented on stockpiles that are to be left for longer than one month.

Native Fauna:

- All contractors and site personnel involved in clearing activities will be inducted on the potential impacts to fauna and advised to stop works within the vicinity of any injured or shocked animals that are encountered. They will be instructed to contact the relevant environmental staff in this event.

Feral and Domestic Animals:

- The prevention of cats and dogs from entering the Bush Forever areas or areas put into conservation is an important mechanism in managing predation on native fauna, avoiding trampling or destroying Declared Rare Flora and the prevention of spreading weeds;

- Pet owners should be made aware of the impact pets can have on the environment. Prominent signage will be installed along footpaths and boundaries of retained native vegetation to inform all visitors that pets are forbidden from entering any remaining vegetated areas; and

- Tree guards will be used to protect seedlings from animals during revegetation works.

Weed Control:

Weed control should be undertaken by appropriately trained operators prior to revegetation. Particular weed control measures will be undertaken to control and/or eradicate the presence of Arum Lily's.

Dieback:

- To ensure Dieback (*Phytophthora cinnamomi*) is not introduced into the site or surrounding vegetated areas, the movement of soils and plant material will be strictly managed to the site;

- All tubestock used in revegetation activities will be sourced from Dieback free nurseries.

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.

All *Caladenia huegelii* individuals, 17.21 ha of Banksia Woodlands TEC and 21.24 ha of Black Cockatoo habitat to be avoided will remain within the existing Bush Forever Site 390 and these areas to ensure the long term protection and management of the MNES.

All three Jarrah potential breeding trees and four of the seven *Eucalyptus todtiana* potential breeding trees will be retained.

The *Caladenia huegelii* individuals and supporting vegetation will not be impacted by the development. The vegetation surrounding the occurrences and nearby that is in 'Good - Degraded' condition or worse will be revegetated to support the long term survival of the flora species by improving the habitat surrounding the species.

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

No

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.

The development will involve the development of 29.52 ha of land with vegetation in mostly Completely Degraded and Degraded-Completely Degraded condition (21.84 ha or 40.01%).

The key reasons why the proposal is not likely to have a significant impact on Matters of National Environmental Significance (MNES) protected under the EPBC Act are outlined in the following sections:

Lead to a long term decrease in the size of a population or reduce the extent of an ecological community

Caladenia huegelii

The presence of five *Caladenia huegelii* individuals within the southern portion of the site requires the protection of the flora and surrounding supporting vegetation. The flora and a minimum 10 m buffer containing critical supporting vegetation are within the avoidance areas of urban development but are nearby. However, measures will be enforced to ensure the long term survival of the population through vegetation retention and revegetation. Such management measures include the fencing of retained native vegetation, retention of supporting vegetation for the species and revegetation of degraded areas within the vicinity of the species where required.

Black Cockatoos

The entire site contains a total of ten potential breeding trees (three Jarrah and seven *Eucalyptus todtiana*) with a Diameter at Breast Height (DBH) > 500 mm and 28.24 ha of Black Cockatoo foraging habitat (360 Environmental 2018b).

The development design of the site is to avoid clearing intact native vegetation where possible, by developing the central portion of the site that was cleared and subsequently rehabilitated, however has been unsuccessful lacking species diversity and density.

The development will involve the clearing of 7.00 ha of Black Cockatoo foraging habitat. The development footprint has been designed to avoid clearing of potential breeding trees where possible. The one Jarrah potential breeding tree occurring within the development footprint will be retained within POS. Three of the seven *Eucalyptus todtiana* potential breeding trees will be cleared.

No Black Cockatoos were heard or observed during the habitat assessment and the site contains no recent evidence of foraging. The lack of recent foraging suggests that the site is not a primary foraging habitat and the clearing of 7.00 ha of foraging habitat within the site is not considered to have significant impact that would lead to a long term decrease of the habitat available and lead to a decrease in the size of a population of Black Cockatoos.

As the central portion of the site has been previously cleared of vegetation and unsuccessfully revegetated, the proposal to develop this portion of the site is not likely to lead to a decrease in the size of a population of Black Cockatoos.

Banksia Woodlands TEC

The site contains a total of 23.98 ha of Banksia Woodlands TEC. As aforementioned, the proposal is designed to avoid clearing intact, quality native vegetation where possible by developing in the central portion of the site.

The development will result in the clearing of 6.77 ha of the Banksia Woodlands within the site (Figure 13).

Mapping undertaken by the (then) DPaW identifies 14 Bush Forever Sites and Jandakot Regional Parks within a 4km radius of the site. There is limited information publicly available on the FCTs and vegetation associations within these surrounding Bush Forever Sites and Jandakot Regional Parks. However, there is broad information on the likely FCTs that may occur. This information has been collated in this section below. Some of these reserves have floristic community types consistent with the Banksia Woodlands FCTs within the site and Black Cockatoo habitat (DPaW 2014; 2016; Government of Western Australia 2000; DEC 2010).

The clearing of 6.77 ha of Banksia Woodlands TEC within the site is not considered to represent a significant reduction in the extent of the TEC within the site and in a regional context. There are several Bush Forever sites / Regional Parks within a 4 km radius of the site that contain larger areas of the FCTs representative of the Banksia Woodlands and vegetation in mostly Excellent condition compared to the site, for example;

- **Bush Forever 389 / Jandakot Regional Park Sites 38, 39 and 41**

  Inferred

  21c Low-lying *Banksia attenuat*a woodlands or shrublands

  22 *Banksia ilicifolia* woodlands

23a Central *Banksia attenuata – B. menziesii* woodlands

- Bush Forever 253 / Jandakot Regional Park Site 40

Inferred

23a Central *Banksia attenuata – B. menziesii* woodlands

- Bush Forever 413 / Jandakot Regional Park Site 35, 36, 37

Inferred

21c Low lying *Banksia attenuata* woodlands or shrublands

23a Central *Banksia attenuata – B. menziesii* woodlands

- Bush Forever 125

Surveyed

23a Central *Banksia attenuata – B. menziesii* woodlands

- Bush Forever 340

Inferred

23a Central *Banksia attenuata – B. menziesii* woodlands

- Bush Forever 464

Inferred

23a Central *Banksia attenuata – B. menziesii* woodlands

- Bush Forever 342 / Jandakot Regional Park Site 32, 34.

Inferred

21c Low-lying *Banksia attenuata* woodlands or shrublands

23a Central *Banksia attenuata* woodlands or shrublands

- Bush Forever 262 / Jandakot Regional Park site 31

Inferred

21a Central *Banksia attenuata – Eucalyptus marginata* woodlands

21c Low-lying *Banksia attenuata* woodlands or shrublands

- Bush Forever 345

Inferred

21a Central *Banksia attenuata – Eucalyptus marginata* woodlands

21c Low-lying *Banksia attenuata* woodlands or shrublands

- Bush Forever 344 / Jandakot Regional Park Site 24, 25, 26, 28, 29 and 30

Inferred

21c Low-lying *Banksia attenuata* woodlands or shrublands

22 *Banksia ilicifolia* woodlands

- Bush Forever 263 / Jandakot Regional Park site 27

Inferred

21c Low-lying *Banksia attenuata* woodlands or shrublands

22 *Banksia ilicifolia* woodlands

23a Central *Banksia attenuata – B. menziesii* woodlands

- Bush Forever 492 / Jandakot Regional Park Site 23

Inferred

21a Central *Banksia attenuata – Eucalyptus marginata* woodlands

21c Low lying *Banksia attenuata* woodlands or shrublands

23a Central *Banksia attenuata – B. menziesii* woodlands

- Bush Forever Site 391

24 Northern Spearwood shrublands and woodlands

*28 Spearwood *Banksia attenuata* or *B. attenuata – Eucalyptus* woodlands

- Bush Forever 388

Surveyed

21c Low-lying *Banksia attenuata* woodlands or shrublands

22 *Banksia ilicifolia* woodlands

23a Central *Banksia attenuata – B. menziesii* woodlands

Reduce the area of occupancy of the species or ecological community

Caladenia huegelii

The area of occupancy of the individual *Caladenia hue*gelii flora species within the site will not have their area of occupancy reduced by the development. The development has been designed to avoid intact native vegetation where possible and will avoid the *Caladenia huegelii* flora individuals and supporting vegetation.

The rehabilitated area contain little diversity and density of native species and are in a Degraded to Completely Degraded condition, with portions of the area containing common weed species including Annual Veldt Grass, Blowfly Grass and Silvery hairgrass (360 Environmental 2015). Given that this area is in a degraded condition from previous clearing and unsuccessful rehabilitation, this area is proposed to be developed and the surrounding vegetation to be avoided where possible. The area of occupancy of the *Caladenia huegelii* will not be reduced, as important supporting habitat within minimum of 10 m the occurrences will not be cleared and will be avoided.

Black Cockatoos

It is unlikely that the proposal will significantly reduce the area of occupancy of the Black Cockatoos and the Banksia Woodlands TEC. The design of the development footprint has been based around avoidance of these MNES where possible. Development of the site will occur mostly outside of the Black Cockatoo habitat and Banksia Woodlands TEC with only some small clearing of these habitats to the north (7.00 ha and 6.77 ha respectively).

The majority of nearby Bush Forever Sites and Regional Reserves contain inferred or surveyed floristic community types indicative of the Banksia Woodlands TEC and Black Cockatoo habitat. It is likely that these surrounding conservation areas would provide a larger area of occupancy of the Black Cockatoos and Banksia Woodlands TEC compared to the site. Furthermore, the site's Banksia Woodlands TEC and Black Cockatoo habitats will be retained (over 71.77% and 75.21% respectively) thus the clearing of 6.77ha (Banksia Woodlands TEC) and 7.00 ha (Black Cockatoo habitat) of these MNES is not likely to have a significant reduction in the area of occupancy available particularly as the site is not considered to be a primary foraging or breeding habitat for the Black Cockatoos.

21.24 ha (75.21%) of Black Cockatoo foraging habitat, seven potential breeding trees and 17.21 ha (71.77%) of Banksia Woodlands TEC will be avoided and retained within the site, allowing fauna species to continue to utilise the area. Similarly, the surrounding conservation

areas and bushland within a 4 km radius of the site provide significantly greater areas of the Banksia Woodlands TEC and areas of suitable habitat for the Black Cockatoos that are more likely to currently utilise.

It is considered highly unlikely that the clearing of 7.00 ha of Black Cockatoo foraging habitat and 6.77 ha of Banksia Woodlands TEC would reduce the area of occupancy of the species that would have a significant impact.

Fragment an existing population into two or more populations or fragment or increase fragmentation of an ecological community

The proposed clearing within the Project Area will not result in a significant fragmentation of an existing population into two or more populations for any of the MNES identified. The vegetation within the site has been historically cleared and has fragmented the Black Cockatoo habitat and Banksia Woodlands TEC. The development footprint was designed to be within previously disturbed areas to ensure urban development will not cause further fragmentation of the Black Cockatoo habitat or Banksia Woodlands TEC.

17.21 ha of Banksia Woodlands TEC and 21.24 ha of Black Cockatoo foraging habitat will be avoided and remain within the balance of title. The clearing of 6.77 ha and 7.00 ha of Banksia Woodlands TEC and Black Cockatoo habitat, respectively, is not considered to represent a significant loss in a site context.

The surrounding Bush Forever Sites and Regional Reserves may also provide suitable Black Cockatoo habitat and represent the Banksia Woodlands TEC.

The *Caladenia huegelii* occurrences will not be fragmented. The developmental design has ensured these DRF species and their associated vegetated buffers of a minimum of 10 m are not fragmented by the proposal or nearby urban development.

Adversely affect the habitat critical to survival of a species or an ecological community

The vegetation proposed to be impacted is mostly unsuccessful revegetation in Degraded to Completely Degraded condition. It is considered that the clearing of this revegetation is not considered important for the Banksia Woodlands TEC, Black Cockatoos or *Caladenia huegelii* and therefore would not impact habitats critical for survival of these MNES.

Black Cockatoos

The seasonal movements of Black Cockatoos mean they require large areas of habitat for breeding, roosting and foraging, as well as having interconnectivity between habitats to assist their movement across the landscape (DSEWPaC 2012). Based on the EPBC referral guidelines for the Black Cockatoos, critical habitat is defined as providing roosting, foraging and breeding habitat hat also provides connectivity between the habitats. Habitat that accommodates all three Black Cockatoo species would be defined as most critical (DSEWPaC 2012). The site does not contain breeding or roosting habitat, with the potential breeding trees not suitable for breeding. Therefore, the site is not considered to be a primary or critical habitat

for the Black Cockatoos. The clearing of 7.00 ha of habitat is not considered to represent a significant loss of habitat critical to the survival of the species.

Banksia Woodlands TEC

The remaining 17.21 ha (or 71.77%) of Banksia Woodlands TEC within the Bush Forever site will ensure the long term survival of the ecological community on-site and maintain the connection to the surrounding large conservation areas and Black Cockatoo habitats within a 4 km radius of the site that may be representative of the Banksia Woodlands TEC (DEE 2016). Several of these surrounding bushland areas are reserves vested with the Conservation Commission of WA and managed by the DBCA. The retention of the Banksia Woodlands TEC onsite will ensure the survival of the ecological community.

Caladenia huegelii

The presence of *Caladenia huegelii* DRF would require the vegetation within the vicinity of the flora to be protected to ensure the habitat critical to the survival of the species remains intact. The development has been designed to ensure the flora species and surrounding vegetation is not impacted by the development. Vegetation nearby the *Caladenia huegelii* occurrences varies in condition, with some in Good- Degraded or worse condition. These degraded areas will be revegetated and a minimum separation distance of 10 m from urban development will be protected to support the species' long term survival by retaining and enhancing the habitat.

Disrupt the breeding cycle of a population

The site contains potential Black Cockatoo breeding habitat, with hollows either too small or occupied by feral bees that cannot be utilised by the Black Cockatoos, and no actual breeding habitat. The proposal is unlikely to disrupt the breeding cycle of the Black Cockatoo due to the site not being currently utilised by the species for breeding.

Future potential breeding of the Black Cockatoos at the site are not likely to be impacted due to the retention of most of the potential breeding trees.

Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline / Modify or destroy abiotic factors necessary for an ecological community's survival

As previously mentioned, due to the presence of several large patches of remnant native vegetation within a 4 km radius of the site, including Bush Forever and managed reserves, these patches are likely to contain habitat currently utilised by the Black Cockatoo and represent the Banksia Woodlands TEC.

The proposal will involve minimal clearing 6.77 ha of Banksia Woodlands TEC and 7.00 ha of Black Cockatoo habitat to support residential development within the degraded central portion of the site.

The Black Cockatoo foraging habitat to be cleared ranges from Excellent to Degraded-

Completely Degraded condition and the retained 75.21 % avoided onsite is in mostly Excellent condition. The clearing of 7.00 ha of Black Cockatoo habitat that is not currently utilised by the species is not considered to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the Black Cockatoo species are likely to decline. 21.24 ha of habitat to be retained onsite in addition to surrounding conservation areas are likely to provide more significant and larger habitat that the patches to be cleared.

The Banksia Woodlands TEC will involve 6.77 ha cleared and 17.21 ha to be retained. The clearing of a portion of the TEC is not considered to be a significant loss that will modify or destroy the abiotic factors necessary for the ecological community to survive, onsite or within a regional context. The surrounding landscape is mostly fragmented and cleared of native vegetation for rural land uses and the removal of 6.77 ha within an already highly fragmented environment may not cause a significant decline in the TEC extent regionally.

Caladenia huegelii flora species require the vegetation immediately surrounding the occurrence to be retained in a suitable condition for the species to survive. The *Caladenia huegelii* individuals and supporting vegetation occur within the avoidance areas. These areas will be protected and, where required, revegetated to ensure the availability and quality of habitat is not modified, destroyed, isolated, removed or decreased from the proposed action.

Introduce disease that may cause the species to decline

The proposed action to clear and develop the site for residential development is not likely to introduce disease that may cause the Black Cockatoo species to decline. The only possible disease and parasite vector associated with the development of the site would be the attraction of foxes and cats, which are known to favour ‘edge effects’ created from fragmented habitats (DEE 2015).

Given that the residential development on-site and on adjacent sites may increase the presence of cats, the retained native vegetation will be fenced off to prevent cat or fox entry. As such, it is not likely that the proposal would introduce disease that may cause a species to decline.

Clearing of land and the construction of urban surfaces can result in the spread of Dieback (*Phytophthora cinnamomi*) into remaining patches of Banksia Woodlands TEC, Black Cockatoo habitat and *Caladenia huegelii* individuals. Subsequently the remaining patches of native vegetation will be fenced and access will be restricted to authorised personnel only in order to retain the habitat structure and prevent the spread of Dieback. Maintenance of the fauna habitat structure will control Dieback occurrences. This will be done by ensuring the retained vegetation patches will be maintained or improved by leaving and/or implementing fallen logs, leaf litter and controlling weed species which control Dieback (DEE 2016). Revegetation will be done in a hygienic manner to ensure all tubestock are sourced from Dieback Free nurseries and all machinery will be washed down prior to entering and leaving the site.

The proposed clearing of the site is considered unlikely to introduce disease that may cause the Banksia Woodlands TEC, Black Cockatoo habitat or the *Caladenia h*uegelii species to decline.

Cause a substantial change in the species composition of an ecological community

17.21 ha (71.77 %) of the Banksia Woodlands TEC is proposed to be avoided and retained onsite and is unlikely to be subject to substantial change in the species composition as a result of the development. There will be no regular burning, or flora or fauna harvesting within the areas of native vegetation remaining. It is not likely that the proposal would cause a decline or loss of functionality of important species of the Banksia Woodlands TEC due to the intensive land clearing previously undertaken within the site and adjacent lots and the development not involving intensive land degradation compared to other rural land uses.

Interfere with the recovery of the species or ecological community

The proposal is unlikely to interfere with the recovery of the Black Cockatoos due to the development designed to avoid majority of the species' foraging and potential breeding habitat. The proposal will involve the retention of 21.24 ha (or 75.21%) of Black Cockatoo habitat and 17.21 ha (or 71.77 %) of Banksia Woodlands TEC and is the proposal is not likely to interfere with the recovery of the Black Cockatoos or Banksia Woodlands TEC.

The proposal is not likely to interfere with the recovery of the *Caladenia huegelii* species. Suitable habitat for the flora species will be retained and rehabilitated to ensure the long term survival and recovery of the population. To ensure supporting habitat is not degraded, the Excellent vegetation condition supporting the flora species will be maintained and revegetation will occur in nearby degraded areas where required. The retained vegetation will also be fenced and access restricted.

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.

All projects undertaken by Perron Developments Ptd Ltd (Perron) have received full statutory approvals to the satisfaction of the relevant environmental agencies.

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.

Not applicable.

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.

Perron and its staff are familiar with all environmental requirements that arise from both Commonwealth and State legislation and to this end the organisation has consistently met all its obligations.

Perron's standard practice is to engage highly experienced and reputable consultants to address, where applicable, environmental issues.

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.

2012/6407 Perron Developments Pty Ltd - Residential Development, Lot 156 and 157 Landsdale Road, Landsdale WA.

2012/6409 Perron Development Manager - Residential Development, Lots 12, 36 and 38 Capron Street, Wanneroo WA

2012/6410 Perron Development Manager - Residential Development, Lot 160 Landsdale Road, Landsdale WA

2012/6601 Perron Developments Pty Ltd - Residential Development, Lots 921 & 922 Baldivis Road and Lot 3 Key Close, Baldivis WA

2012/6613 Perron Developments Pty Ltd - Residential Development, Baldivis Road, Sabrina Road & Zig Zag Road, Baldivis WA

2013/6932 Perron Developments Pty Ltd - Residential Development/Light Industrial Development, Lots 9520 & 81 Vasse Newton Estate, Vasse WA

2013/7049 Perron Developments Pty Ltd - Residential Development, Lot 4 Armadale Road, Banjup WA

215/7609 Perron Developments Pty Ltd - Commercial Development, Pacific View Estate Urban Development, Worongary QLD

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
360 Environmental, 2018a. Lot 131 Jandakot Road, Treeby - Flora and Vegetation Survey. Prepared for Perron Developments. West Leederville.	Environmental survey undertaken using the current guideline specifications.	N/A
360 Environmental, 2018b. Lot 131 Jandakot Road, Treeby – Black Cockatoo Habitat Assessment. Prepared for Perron Developments, West Leederville.	Environmental survey undertaken using the current guideline specifications.	N/A
Beard, J. S. 1981. Vegetation Survey of Western Australia. University of Western Australia Press, Perth	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Churchwood, H.M and McArthur W.M, 1980. Darling System, Landforms and Soils. Division of Land Resources Management. CSIRO, Perth.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Agriculture and Food Western Australia (DAFWA), 2006. Soil Subsystem Mapping – Central. GIS Dataset. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Agriculture and Food Western Australia (DAFWA), 2012, Soil Landscapes and Land Systems of Western Australia, GIS Dataset, Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Biodiversity	All references are peer	N/A

Reference Source	Reliability	Uncertainties
Conservation and Attractions (DBCA), 2017. NatureMap Search Tool. Accessed from https://naturemap.dpaw.wa.gov.au/. Government of Western Australia	reviewed papers in reputable journals or are government publications or data.	
Department of Environment (DoE), 2008. Directory of Important Wetlands. GIS Dataset. Commonwealth of Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Environment and Conservation (DEC), 2009. Grand Spider Orchid (Caladenia huegelii) Recovery Plan. Commonwealth Department of the Environment, Water, Heritage and the Arts, Canberra.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Environment Conservation (DEC), 2010. Regional Parks. GIS Dataset. Government of Western Australia	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Environment Regulation (DER), 2014. Acid Sulfate Soils. GIS Dataset. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Environment Regulation (DER), 2016. Acid Sulfate Soils Mapping for the Swan Coastal Plain. GIS Dataset. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Parks and Wildlife (DPaW), 2016a. Bush Forever Sites. GIS Dataset. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Parks and Wildlife (DPaW), 2016b. DPaW Managed Lands. GIS Dataset. Government of Western Australia	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Parks and	All references are peer	N/A

Reference Source	Reliability	Uncertainties
Wildlife (DPaW), 2017, Geomorphic Wetlands, GIS Dataset, Government of Western Australia	reviewed papers in reputable journals or are government publications or data.	
Department of Planning, Lands and Heritage (DPLH), 2017. Aboriginal Heritage Inquiry System, accessed https://maps.daa.wa.gov.au/ahis/. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Western Australian Planning Commission (WAPC), 2015. Draft Metropolitan Peel Sub-regional Planning Framework. Prepared by the Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of the Environment and Energy (DEE), 2013. Significant Impact Guidelines 1.1 – Matters of National Environmental Significance. Commonwealth of Australia	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of the Environment and Energy (DEE), 2016. Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community. Commonwealth of Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of the Environment and Energy (DEE), 2017. Protected Matters Search Tool. Accessed from http://www.environment.gov.au/webgisframework/apps/pmst/pmst.jsf. Commonwealth of Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC 2012). EPBC Act Referral guidelines for three threatened Black Cockatoo species. Australian Government.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Water (DoW),	All references are peer	N/A

Reference Source	Reliability	Uncertainties
2007. Hydrography. GIS Dataset. Government of Western Australia.	reviewed papers in reputable journals or are government publications or data.	
Department of Water (DoW), 2016a. Public Drinking Water Source Areas, GIS dataset. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Water (DoW), 2016b. Water Quality Protection Note 25: Land use compatability tables for public drinking water source areas. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Water and Environment Regulation (DWER), 2017a. Perth Groundwater Map. Accessed from https://maps.water.wa.gov.au/#/webmap/gwm. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Water and Environmental Regulation (DWER), 2017b. Clearing Permit System Map. Accessed from https://cps.der.wa.gov.au/. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Environmental Protection Authority (EPA), 2008. Environmental Guidance for Planning and Development – Guidance Statement 33. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Geological Survey of Western Australia (GSWA), 2008, Surface Geology, GIS Dataset. Department of Mines and Petroleum. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Government of Western Australia, 2000. Directory of Bush Forever Sites, Volume 2.	All references are peer reviewed papers in reputable journals or are government	N/A

Reference Source	Reliability	Uncertainties
Department of Environmental Protection. Perth, Western Australia	publications or data.	
Government of Western Australia, 2016. 2016 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2016. WA Department of Parks and Wildlife, Perth.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Heddle, E.M., Loneragan, O.W. and Havel, J.J., 1980. Vegetation of the Darling System, Department of Environment and Conservation (south of Moore River) Department of Environment and Conservation.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Hill, AL., Semeniuk, CA., Semeniuk, V., Del Marco., A, 1996, Wetlands of the Swan Coastal Plain: Wetland Mapping, Classification and Evaluation, Main Report, Water and Rivers Commission and Department of Environmental Protection, Perth. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Hussey, B.M.J., Keighery, G.J., Dodd, J., Lloyd, S.G. & Cousens, R.D. 2007. Western Weeds. A guide to the weeds of Western Australia. 2nd Edition. The Plant Protection Society of Western Australia, Victoria Park.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Johnston, R. E., & Storr, G.M (1998). Handbook of Western Australian Birds, Volume 1 – Non-Passerines (Emu to Dollarbird). Oxford University Press.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Mitchell, D., Williams, K., and Desmond, A., 2002. Swan Coastal Plain 2 (SWA2 – Swan	All references are peer reviewed papers in reputable journals or are government	N/A

Reference Source	Reliability	Uncertainties
Coastal Plain subregion), A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002. Department of Conservation and Land Management, Perth	publications or data.	
Molly, S., Wood, J. Hall, S., Wallrodt, S. & Whisson, G. 2009. South West Regional Ecological Linkages Technical Report. Available from: http://walga.asn.au/AboutWALGA/Policy/SouthWestBiodiversityProject/SouthWestRegionalEcologicalLinkagesTechnicalReport.aspxMorgan, B., 2011. A Level 2 Flora and Vegetation Survey of Proposed Sand Mining Area at Lot 467, Warton Rd. Prepared for RPS Environmental.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Perth Biodiversity Project (PBP), 2008, Perth Regional Ecological Linkages, GIS Dataset, Western Australian Local Government Association (WALGA), Perth.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Shah, B. 2006. Conservation of Carnaby's Black Cockatoo on the Swan Coastal Plain, Western Australia. Perth: Birds Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Shepherd, D. P., Beeston, G. R., and Hopkins, A. J. M. (2001). Native Vegetation in Western Australia (Technical Report 249). Department of Agriculture and Food Western Australia, Perth.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
State Heritage Office (SHO), 2017. inHerit Heritage Search. Accessed http://inherit.stateheritage.wa.gov.au/Public/. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Western Australian Herbarium (WAH), 2015. Florabase -	All references are peer reviewed papers in reputable	N/A

Reference Source	Reliability	Uncertainties
Information on the Western Australian Flora. Accessed from http://florabase.dpaw.wa.gov.au . Government of Western Australia.	journals or are government publications or data.	
Western Australian Planning Commission (WAPC), 2010. State Planning Policy 2.8 – Bushland Policy for the Perth Metropolitan Region. Prepared by the Department of Planning. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
360 Environmental, 2015. Flora and Vegetation Survey - Lot 131 Jandakot Road, Banjup. Prepared for Perron Developments. West Leederville.	Environmental survey undertaken using the current guideline specifications.	N/A
Cooper, C.E.M Withers, P.C., Mawson, P.R., Bradshaw, S.D., Prince, J., and Robertson, H. 2002. Metabolic ecology of cockatoos in the south-west of Western Australia. Australian Journal of Zoology 50, pp. 67-76.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A

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.

8.0 Provide a description of the feasible alternative?

No alternative is 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

Property Development Manager

9.2.2 First Name

Lyle

9.2.3 Last Name

Kenny

9.2.4 E-mail

lkenny@perrongroup.com.au

9.2.5 Postal Address

PO Box 6028
EAST PERTH WA 6892
Australia

9.2.6 ABN/ACN

ABN

73000230446 - PERRON DEVELOPMENTS PTY LTD

9.2.7 Organisation Telephone

(08) 6263 1584

9.2.8 Organisation E-mail

lkenny@perrongroup.com.au

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, Cyle William Kenny, 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: 9/5/18

I, Cyle William KENNY, the person proposing the action, consent to the designation of 360 Environmental as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:..... Date: 9/5/18

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

Property Development Manager

9.5.2 First Name

Lyle

9.5.3 Last Name

Kenny

9.5.4 E-mail

lkenny@perrongroup.com.au

9.5.5 Postal Address

PO Box 6028
EAST PERTH WA 6892
Australia

9.5.6 ABN/ACN

ABN

73000230446 - PERRON DEVELOPMENTS PTY LTD

9.5.7 Organisation Telephone

(08) 6263 1584

9.5.8 Organisation E-mail

lkenny@perrongroup.com.au

Proposed designated proponent - Declaration

I, Lyle William KENNY, 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.

9/5/18

Signature:..... Date: .....

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Director

9.8.2 First Name

Scott

9.8.3 Last Name

Bird

9.8.4 E-mail

scottbird@360environmental.com.au

9.8.5 Postal Address

PO Box 14
WEST PERTH WA 6872
Australia

9.8.6 ABN/ACN

ABN

50109499041 - 360 Environmental Pty Ltd

9.8.7 Organisation Telephone

(08) 9388 8360

9.8.8 Organisation E-mail

admin@360environmental.com.au

Referring Party - Declaration

Australian Government
Department of the Environment and Energy

I, SCOTT ANDREW BIRD, 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:..... Date: 15/05/2018

Australian Government
Department of the Environment and Energy

Appendix A - Attachments

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

1. 687ac_flora_and_vegetation_assesment_report_13.05.16.pdf
2. 2400_f1_site_location.pdf
3. 2400_f2_development_footprint.pdf
4. 2400_f3_threatened_flora_locations.pdf
5. 2400_f4a_bc_potential_foraging_habitat.pdf
6. 2400_f4b_bc_evidence.pdf
7. 2400_f4c_bc_significant_trees.pdf
8. 2400_f5_wetlands_and_hydrology.pdf
9. 2400_f6_geology_and_soils.pdf
10. 2400_f7_surveyed_vegetation_associations.pdf
11. 2400_f8_vegetation_condition.pdf
12. 2400_f8_vegetation_condition_070518.pdf
13. 2400_f9_floristic_community_type_and_condition.pdf
14. 2400_f10_banksia_woodlands_tec_extent.pdf
15. 2400_f11_conservation_areas_and_heritage.pdf
16. 2400_f12a_historical_aerials_1953.pdf
17. 2400_f12b_historical_aerials_1965.pdf
18. 2400_f12c_historical_aerials_1974.pdf
19. 2400_f12d_historical_aerials_1985.pdf
20. 2400_f12e_historical_aerials_1995.pdf
21. 2400_f12f_historical_aerials_2005.pdf
22. 2400_f12g_historical_aerials_2015.pdf
23. 2400_f13_banksia_woodlands_tec_disturbance.pdf
24. 2400_f14a_black_cockatoo_habitat_disturbance.pdf
25. 2400_f14b_black_cockatoo_potential_breeding_habitat_disturbance.pdf
26. 2478_flora_and_vegetation_addendum.pdf
27. 2478ab_lot_131_bc_assessment_report_29.1.2018.pdf
28. epbc_data_070518.zip
29. lot_131_epbc_referral_gis_data.zip