

Department of the Environment and Energy

Title of Proposal - Hardcastle Park, Landsdale

Section 1 - Summary of your proposed action

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

1.1 Project Industry Type

Private

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

39 (Lot 3000) Hardcastle Avenue, Landsdale ('the Site') is proposed to be partially developed for a community park and kick-about area (Hardcastle Park) as per the attached Concept Plan. The Lot is approximately 1.16 ha in size and is located within the City of Wanneroo Local Government area. The Site is located approximately 15 km north of Perth's Central Business District (CBD) and is within the Swan Coastal Plain biogeographic region of Western Australia. The Site is Crown Land managed by the City of Wanneroo and it is proposed that approximately 0.61 ha of the Site be developed within the passive park ('the Project Area'). Development of the Project Area will involve the clearing of approximately 0.30 ha of combined Banksia Woodlands TEC and potential Black Cockatoo foraging habitat.

In addition to an EPBC Referral to address Matters of National Environmental Significance (MNES), a Native Vegetation Clearing Permit (NVCP) will be required to clear native vegetation within the Project Area 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
Lot 3000 Hardcastle Ave, Landsdale	1	-31.817444164657	115.86265352243
Lot 3000 Hardcastle Ave, Landsdale	2	-31.817318810943	115.86291637891
Lot 3000 Hardcastle Ave, Landsdale	3	-31.817316531781	115.86384710544
Lot 3000 Hardcastle Ave, Landsdale	4	-31.817394023136	115.86425480121
Lot 3000 Hardcastle Ave, Landsdale	5	-31.817435048019	115.86430039877
Lot 3000 Hardcastle Ave, Landsdale	6	-31.81746239793	115.8643111276

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Area	Point	Latitude	Longitude
Lot 3000 Hardcastle	7	-31.818039023348	115.86431380981
Lot 3000 Hardcastle Ave. Landsdale	8	-31.818091443662	115.86427894109
Lot 3000 Hardcastle Ave, Landsdale	9	-31.81812790995	115.86421456808
Lot 3000 Hardcastle Ave, Landsdale	10	-31.818132468235	115.86272057766
Lot 3000 Hardcastle Ave, Landsdale	11	-31.818100560235	115.86265888685
Lot 3000 Hardcastle Ave, Landsdale	12	-31.818066373081	115.86262670034
Lot 3000 Hardcastle Ave, Landsdale	13	-31.817496585309	115.86262938255
Lot 3000 Hardcastle Ave, Landsdale	14	-31.817441885498	115.86265620464
Lot 3000 Hardcastle Ave, Landsdale	15	-31.817444164657	115.86265352243

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

The Site is located within the City of Wanneroo Local Government area, located approximately 15 km north of Perth's CBD.

The Site is currently used as a 'passive park' within an area zoned 'Urban Development' and areas beyond the immediate vicinity of the Site, to the north and south, are zoned 'Residential' under the City of Wanneroo's District Planning Scheme No. 2 (DPS2).

Surrounding land uses include new residential developments, vacant and cleared land surrounding the Site, conservation areas to the east, south and west and rural land uses to the west of the Site.

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

1.16 ha

1.7 Is the proposed action a street address or lot?



Street Address

39 Hardcastle Avenue Landsdale WA 6065 Australia

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.

Maryam Berenji

1.10.1.2 E-mail

Maryam.berenji@wanneroo.wa.gov.au

1.10.1.3 Telephone Number

08 9405 5320

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

Start date 04/2018

End date 06/2019

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



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The Site is zoned as 'Urban Development' under the City of Wanneroo's DPS 2 and has been identified as Public Open Space (POS) under the East Wanneroo Cell 5 Agreed Structure Plan 7 (City of Wanneroo, 2002). The Park is managed by the City of Wanneroo under a Management Order for Public Recreation.

The development of the Site is a community facility project undertaken by the City of Wanneroo. The council considered a petition from the community on 27 May 2014 seeking to include Hardcastle Park on the City's Passive Park 10 Year Capital Works Program. The park has previously been subject of residents concern since the development of the area (known as Paranorda development) undertaken by the Watson Property Group (WPG) concern was centered around the level of development of the Park compared to that initially indicated by WPG. The City has since been working to progress the development of a suitable passive park at Hardcastle and community consultation has identified a strong preference for the proposed park to have a greater integration with the remnant vegetation rather than a separation. Considering the existing remnant native vegetation onsite includes the Banksia Woodlands TEC and potential Black Cockatoo foraging habitat, the concept plan for the park seeks to achieve balance between this outcome and the retention of significant vegetation onsite. This was endorsed by the community through a subsequent community consultation period over April and May 2017 and council meeting on 30 May 2017.

The concept plan for the park development will utilise the western portion of the public open space. In order to obtain the relevant environmental approvals required for the development of Hardcastle Park, the City has engaged a consultant.

A Native Vegetation Clearing Permit (NVCP) will be required for approval to clear the Site containing the Banksia Woodlands TEC and Black Cockatoo Habitat as it is within an Environmentally Sensitive Area and is therefore not eligible for an exemption.

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

The concept plan for the proposed Hardcastle Park development was released for community consultation between 7 November and 20 November 2016. The concept plan was distributed by mail to residents within a 400 m radius of the Park.

Onsite consultation was held on 16 November 2016.

The revised concept plan was released for public comment between 10 April 2017 and 7 May 2017. A community consultation event was held on Monday 24 April 2017 with Elected Members and City Officials where the proposed development was endorsed by the community, see attached Hardcastle Park Consultation April 2017 - Survey Results Summary (City of Wanneroo 2017)



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 <u>interactive map</u> 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:

• <u>Profiles of relevant species/communities</u> (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;

• <u>Significant Impact Guidelines 1.1 – Matters of National Environmental Significance;</u>

• <u>Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and</u> <u>Actions by Commonwealth Agencies</u>.

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

SpeciesImpactBanksia Woodlands of the Swan Coastal PlainBanksia Woodlands of the Swan Coastal Plain

Australian Government

Carnaby's Cockatoo (Calyptorhynchus

Cockatoo (Calyptorhynchus baudinii)

latirostris) Forest Red-tailed Black Cockatoo

(Calyptorhynchus banksii naso) Baudin's



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Species	
Ecological	Community

Impact

ecological community is listed (as at 16 September 2016) as Endangered under the **Environment Protection and Biodiversity** Conservation Act 1999 (EPBC Act). A Level 2 Flora and Vegetation survey was undertaken and a subsequent desktop assessment determined that the TEC is considered to occur within the Site. The statistical analysis identified the vegetation association as having the most affiliation to floristic community type (FCT) 20a -Banksia attenuate woodlands over species rich dense shrublands and 28 Spearwood Banksia attenuata or Banksia attenuata-Eucalyptus woodlands. FCT28 only has moderate occurrence within the Site and FCT 20a is considered the most likely associated with the study area. Both FCTs are listed as subcommunities of the Banksia Woodlands TEC. These FCTs must meet key diagnostic characteristics to be considered a TEC. In regards to the presence of the Banksia Woodlands TEC, the Approved Conservation Advice (DotEE 2016) states the following condition thresholds are applicable: Patches in 'Excellent' condition should have a minimum size of 0.5 ha; patches in 'Very Good' condition should have a minimum size of 1 ha and patches in 'Good' condition should have a minimum size of 2 ha to be considered a TEC. Vegetation patches in 'Degraded' or worse condition are excluded and not protected under the EPBC Act. Based on the survey results and the abovementioned condition thresholds, the vegetation considered to represent the Banksia Woodlands TEC in the Site equates to 0.79 ha. The development of Hardcastle Park will involve the clearing of 0.30 of the Banksia Woodlands TEC and 0.49 ha will remain in the balance of title.

A Level 1 Fauna survey was undertaken in October 2015 by Ecoscape to undertake a targeted search for conservation significant fauna species and mapping sightings and habitats occurring within the Site. The Survey considered Carnaby's Cockatoo, Forest Redtailed Black Cockatoo and Baudin's Black Australian Government

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Species

Impact

Cockatoo listed under the EPBC Act. Carnaby's Cockatoo feed on a variety of seeds, nuts and flowers from 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). Forest Red-tailed Black Cockatoo primarily forage in Jarrah and Marri woodlands and forests. Baudin's Black Cockatoo forage primarily in eucalypt forest or woodlands, where it feeds 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 Fauna survey did not identify any Black Cockatoo species within the Site and no potential breeding habitat was identified. The Site contains potential foraging habitat for the Black Cockatoos and it was identified that the presence of the Banksia Woodlands TEC is considered to be potential Black Cockatoo foraging habitat. The total potential foraging habitat for the Black Cockatoos within the Site is 0.79 ha and consists of Banksia, Allocasuarina, Hakea and Eucalyptus species which are all known dietary items of the Black Cockatoo, Under the DotEE's Referral Guidelines for three threatened Black Cockatoo species, it is recommended that a proposal be referred to the DotEE if it requires the impact of 1 ha or more of quality foraging habitat (DSWEPaC 2012). The development will require the clearing of 0.30 ha of potential Black Cockatoo foraging habitat that coincides with the Banksia Woodlands TEC. The clearing of 0.30 ha of potential foraging habitat is not considered to be a 'significant' impact.

2.4.2 Do you consider this impact to be significant?



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

No

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

No

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

No

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

No

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

No

2.10 Is the proposed action a nuclear action?

No

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

No

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

No

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

No



Section 3 - Description of the project area

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

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

FLORA

Portions of the Site along the perimeter and the middle have been previously cleared for tracks prior to 1953. The southern most boundary of the Site has had clearing undertaken between 2005 and 2006, most likely as part of the subdivision and clearing undertaken in the immediate area during this time. Much of the Site contains remnant native vegetation.

A likelihood assessment was undertaken to determine the species that are 'Likely', 'Possible' and 'Unlikely' to occur within the Site. The assessment was carried out through analysis of the Site's regional soil characteristics and the nearest record of conservation significant species from the Site. The likelihood assessment identified 38 conservation significant flora species as potentially occurring within the vicinity of the Site (Table 1 of attached Supporting Document) . Of these, one is considered 'Likely' to occur (*Jacksonia sericea*), five were considered as 'Possible' to occur (Blue Tinsel Lily, *Calectasia cyanea; Baeckea sp. Limestone; Acacia benthamii; Styphelia filifolia* and *Anigozanthos humilis subsp. chrysanthus*) and 30 species considered 'Unlikely' to occur (Table 1 of the attached EPBC Act Supporting Document). Two species, *Synaphea sp. Fairbridge* and *Trithutia occidentalis* had unknown preferred habitat information and their likelihood of occurrence within the Site is therefore 'Unknown'.

A Level 2 Flora and Vegetation Survey was conducted by Ecoscape across the Site on 6 October 2015. A total of 88 vascular flora species from 70 genera and 33 families were recorded within the Site. The commonly occurring families were Fabaceae (14 taxa), Proteaceae (seven taxa), Myrtaceae (six taxa) and Asteraceae (six taxa) (Ecoscape 2015).

No Threatened flora species pursuant to the EPBC Act and/or gazetted as Declared Rare Flora pursuant to the *Wildlife Conservation Act 1950* or the *Biodiversity Conservation Act 2016* were recorded during the Survey.

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. The search returned a number of marine birds and waders that require specific habitat, such as waterways, wetlands, oceans and shorelines. The listings may be associated with a number of wetlands in the surrounding area. As the Site does not contain suitable habitat, these species have been



omitted from further discussion.

In addition, a number of species returned in the databases were historical records of extinct species (e.g. Malleefowl) and these have been omitted from further discussion.

A Likelihood assessment was undertaken to determine the likelihood of these fauna species occurring on the Site based on suitable habitat present and the species known distribution (Table 3 of the attached Supporting Document).

The Likelihood assessment identified 12 conservation significant fauna species as potentially occurring within the Site. The likelihood assessment found that the Site is likely to offer suitable habitat for:

- Forest Red-tailed Black Cockatoo (Calyptorhynchus banksii naso)
- Carnaby's Cockatoo (Calyptorhynchus latirostris); and
- Graceful Sunmoth (Synemon gratiosa).

It is considerd the following species as 'Possible' to occur within the Site:

- Baudin's Cockatoo (Calyptorhynchus baudinii); and
- Rainbow Bee-eater (Merops ornatus).

The Fauna survey identified three species within the Site (Bobtail Lizard, *Tiliqua rugosa*; feral cat, *Felis catus* and the remains of a Western Grey Kangaroo; *Macropus fuliginosus*). No conservation significant fauna species were identified during the Survey (Ecoscape 2015).

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 water bodies within the Site.

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 no wetlands occurring within or within the vicinity of the Site. The nearest geomorphic wetland is classified as 'Conservation Category' and is located approximately 977 m to the east of the Site (Figure 3) (DPaW 2017a).

No Wetlands of International Importance (Ramsar Wetlands) are located within 5 km of the Site (DotEE 2017).

Public Drinking Water Source Area



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The Site is not located within a Public Drinking Water Source Areas (PDWSA) (DoW 2016). A Priority 3 PDWSA exists to the south and the east of the Site in excess of 330 m (Figure 3) (DoW 2016).

Groundwater

Groundwater levels range between 28.8 m and 33.5 m below ground level (mbgl) across the Site (DWER 2017a). The Perth Groundwater Map has also identified the Site as having 'fresh' salinity levels between 250-500 mg/L TDS (DWER 2017a). Groundwater flows from north to south.

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

SOIL CHARACTERISTICS

Soil Landscapes and Land Systems mapping has identified the Site as typically the **Spearwood System:** sand dunes and plains, yellow deep sands, pale deep sands and yellow/brown shallow sands (DAFWA 2012).

1:250 000 surface geology profile mapping (GSWA 2008) indicates the geology of the Site is typically as follows:

- **Coastal Dunes 38488:** Beach sand, sand dunes, coastal dunes and beach ridges with calcareous and siliceous, locally shelly and/or cemented; locally reworked.

Soil subsystems mapping identified that the Site is within a single soil subsystem unit (DAFWA 2012):

- **211Sp_Ky, Karrakatta Sand Yellow Phase:** Low hilly to gently undulating terrain, yellow, Aeolian sand over limestone at 1-2 m.

Contamination and Acid Sulfate Soils

A search of the Department of Water and Environmental Regulation (DWER)'s Contaminated Sites Database did not identify any registered contaminated sites within the Site or within a 1km radius (DWER 2017).

Acid Sulfate Soil (ASS) mapping undertaken by the (then) Department of Environment Regulation has identified that the Site has no mapped risk of ASS, indicative of the area in the vicinity of the Site (DER 2014).

VEGETATION CHARACTERISTICS

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



smaller units.

There are two Beard/Shepherd vegetation units described for the Site (Figure 4):

- Spearwood 6: Medium woodland; Tuart and Jarrah; and

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

The WA 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 preexisting 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 within an urban area. Both vegetation units have current extents greater than the abovementioned 10 % threshold.

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

- Karrakatta Complex - Central and South: Low open forest of *Eucalyptus gomphocephala*, *E. marginata*, *E. calophylla* and woodland of *E.marginata* and *Banksia spp.*

Surveyed Vegetation Associations

The Flora and Vegetation survey undertaken in October 2015 identified one natural vegetation association for the Site (Ecoscape 2015):

- **BaHhMc:** Banksia attenuata low, open woodland over Allocasuarina humilis mid, isolated shrubs over Hibbertia hypericoides, Eremaea pauciflora va. pauciflora low, open shrubland over Mesomelaena pseudostygia sparse sedgeland and Amphipogon turbinatus sparse tussock grassland (extent: 0.8 ha or 70%)

- Cleared: Completely Degraded, non-native vegetation (extent: 0.2 ha or 30%).

Floristic Community Types

Statistical analysis and data interpretation of the survey results identified the following floristic community types (FCTs) as occurring in the Site (Ecoscape 2015): - FCT20a: Banksia attenuata woodlands over species rich dense shrublands; and

- FCT28: Spearwood Banksia attenuata or Banksia attenuata-Eucalyptus woodlands

Both FCTs are listed as sub-communities of the Threatened Ecological Community (TEC), Banksia Woodlands of the Swan Coastal Plain. (DotEE 2016).

Vegetation Condition and Threatened Ecological Communities



Mapping of the surveyed vegetation has identified the Site ranges from 'Completely Degraded' to 'Excellent' condition, with the Project Area in mostly 'Excellent' and 'Very Good' condition (Figure 8). Floristic Community Type analysis has identified the Site as containing SCP 20a and 28 which are listed as sub-communities of the Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community (TEC). As such, the entire Site contains a total of 0.79 ha of the Banksia Woodlands TEC in 'Excellent' (0.59 ha), 'Very Good' (0.11 ha) and 'Good to Degraded' (0.10 ha) condition.

Potential Black Cockatoo Habitat

No potential breeding trees are present within the Survey Area, however, the Survey identified the Site as containing potential Black Cockatoo foraging habitat coinciding with the Banksia Woodlands TEC (0.79 ha). The potential Black Cockatoo foraging habitat within the Site is based on the presence of species known for foraging by the Forest Red-tailed Black Cockatoo and Carnaby's Cockatoo. No Black Cockatoos were identified during the Fauna survey undertaken in October 2015 (Ecoscape 2015).

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

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 (then) Department of Environment Regulation (DER) indicates the majority of the Project Area is within the extent of an ESA and is therefore not eligible for a native vegetation clearing permit exemption (DER 2017). According to the DWER's Clearing Permit System Map, the ESA refers to a TEC and its associated buffers (DWER 2017b).

The Site is not within any conservation areas including; Bush Forever Sltes, Regional Reserves, Department of Biodiversity Conservation and Attractions (DBCA) Managed Lands. A number of these conservation areas are located within the surrounding area (Figure 5).

One Regional Ecological Linkage intersects the Site (ID: 20) (Figure 5) (PBP 2008).

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

The vegetation condition within the Project Area ranges from 'Excellent' to 'Completely Degraded' and is in mostly Excellent condition (0.59 ha) with little weed species (Figure 8).

The perimeter of the native vegetation, closest to disturbance and clearing areas, was assessed to be in 'Good to Degraded' condition. These areas lacked a cohesive native understorey and has a high presence of weed species.

The surrounding Site is comprised of cleared areas is classified as 'Completely Degraded' (0.34 ha).



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 of the Lot slopes south to north, increasing from 64 to 71 m Australian Height Datum (AHD), respectively.

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

Vegetation condition within the Site varied between 'Excellent', 'Very Good', 'Good to Degraded' and 'Completely Degraded/Cleared' with the majority of the Site within Excellent condition (50 %) (Figure 8). Portions of the Site has been subject to vegetation clearing associated with tracks prior to 1965 and subdivisions of the Site and surrounding area between 2005 and 2006.

The extent of each vegetation condition within the entire **Site** is presented below (Figure 8) (Ecoscape 2015):

Excellent: 0.59 ha

Very Good: 0.11 ha

Good to Degraded: 0.37 ha

Completely Degraded: 0.34 ha

The extent of each vegetation condition within the **Project Area** is presented below (Figure 8) (Ecoscape 2015):

Excellent: 0.18 ha

Very Good: 0.08 ha

Good to Degraded: 0.04 ha

Completely Degraded: 0.31 ha

The Survey identified a total of 18 introduced species within the Site. None of these are listed as Weeds of National Importance (WONS) or Declared under the *Biosecurity and Agriculture Management Act 2007* (Ecoscape 2015):

- Cape Weed (*Arctotheca calendula);



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- Bearded Oat (*Avena barbata);
- Wild Turnip (*Brassica tournefotii);
- Blowfly Grass (*Briza maxima);
- Great Brome (*Bromus diandrus);
- Perennial Veldt Grass (* Ehrharta calycina);
- Geraldton Carnation Weed (* Euphorbia terracina);
- Wild Gladiolus (*Gladiolus caryophyllaceus);
- Narrowleaf Lupin (*Lupinus augustifolius);
- Western Blue Lupin (*Lupinus cosentinii);
- Pimpernel (*Lysimachia arvensis);
- King Island Melilot (Melilotus indicus);
- Beach Evening Primrose (* Oenothera drummondii);
- Rose Pelargonium (*Pelargonium captitatum);
- Wild Radish (*Raphanus raphinistrum);
- Common Sowthistle (*Sonchus oleraceus);
- Hare's Foot Clover (* Trifolium arvense); and
- Ursinia (* Ursinia anthemoides subsp. anthemoides).

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

There are no Commonwealth, State or World Heritage Places within the vicinity of the Site (DotEE 2017).

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

No Aboriginal heritage sites exist in or within the vicinity of the Site. The nearest Aboriginal heritage Sites are located 1.14 km and 1.28 km to the southeast of the Site (Figure 6):



- Registered Site 4044: Landsdale, Artefacts/scatter

- Registered Site 3315: Murray's Cave, Artefacts/scatter/Camp

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

Lot 3000 on DP 72117, Volume/Folio: 3162/464 (39 Hardcastle Avenue, Landsdale) - Crown Land

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

Review of historical aerial imagery has identified that the Site is remnant native vegetation (Figures 7a-h). The earliest available aerial imagery is from 1953 and identifies the Site and surrounding area as uncleared native vegetation with a few tracks. By 1965, a number of tracks were cleared to form Lots as part of a subdivision and by 1974, some lots to the west of the Site were completely cleared of all vegetation, by 1985 a number of surrounding areas were also cleared of vegetation and were developed into rural residential properties and rural agricultural landuses. Further clearing is apparent between 1985 and 1995, particularly the thinning of vegetation within the Site and several remaining vegetated areas which has regrown by 2005. Between 2005 and 2015, the entire surrounding area had significantly changed, with all previous residential developments demolished, and vegetated/ rural lots cleared followed by extensive subdivision and development of several hundred residential lots. The southern portion of the Lot was cleared during this time as part of the subdivision clearing undertaken between 2005 and 2015.

The Site is currently used as a passive park, reserved as 'Public Recreation' (No. 51878) and contains some cleared tracks and remnant native vegetation.

The City of Wanneroo are proposing to develop the southwest portion of the Site for a playground and nature park which will include a turfed kick-about area, bench seating, paths, picnic settings, play equipment and nature play areas. The concrete path and conservation fence will be constructed along the perimeter of the lot.



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 proposeed development has been designed to ensure it is located in the southwest of the Site that contains a larger portion of cleared land which is mostly in 'Completely Degraded' condition (0.31 ha), and thus reduce direct impacts to potential Black Cockatoo foraging habitat and Banksia Woodlands TEC. The following management measures will be implemented to avoid or reduce the impacts:

- The majority of the Project Area is mapped as an Environmentally Sensitive Area (ESA) and will require a Native Vegetation Clearing Permit (NVCP) whereby State and other environmental impacts will be addressed through this approval process.

- 0.49 ha of Banksia Woodlands TEC and potential Black Cockatoo foraging habitat will remain within the balance of title.

Clearing:

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

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

- Revegetate the Site with native species of local provenance;

- Staged clearing outside of the breeding period for conservation significant avian species will be conducted where possible;

- Prior to clearing activities, areas of native vegetation to be retained should be clearly demarcated by star pickets, coloured tape or bunting, or fencing and all personnel should be made aware of the requirement to protect native vegetation in this areas;

- No dead standing or fallen timber should be removed unnecessarily. Logs and other debris



resulting from land clearing should be placed in retained vegetation to enhance fauna habitat;

- Prior to clearing, any fauna present will be removed and relocated by authorised personnel;

- Utilise existing tracks rather than creating new tracks where possible;

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

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

Native Fauna:

- All contractors involved in clearing activities will be inducted on the potential impacts to fauna and advised to stops 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 Fauna:

- Tree guards will be used to protect seedlings from animals during revegetation; and

Weed Control:

Weed control should be undertaken by appropriately trained operators prior to revegetation.

Dieback:

- To ensure dieback is not introduced into the Site or revegetated areas, the movement of soils and plant material will be strictly managed to the Site; and

- Ensure all tubestock used in revegetation activities are sourced from a certified Dieback free nursery.

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.

Banksia Woodlands TEC: Banksia Woodlands of the Swan Coastal Plain is listed as Endangered and protected under the EPBC Act (s 266b). This TEC covers an area of 0.79 ha within the Site. The proposed development will require the clearing of 0.30 ha of Banksia Woodlands TEC while conserving 0.49 ha or 62%. TECs and their associated buffers are regarded as ESAs.

Potential Black Cockatoo Habitat: There is no potential Black Cockatoo breeding habitat within the Site. No Black Cockatoos were observed during the Survey undertaken in October 2015 by Ecoscape. The Site contains 0.79 ha of potential foraging habitat which coincides with



the Banksia Woodlands TEC. The development would require the clearing of 0.30 ha of Black Cockatoo potential foraging habitat and 0.49 ha will remain in the balance of title.

Weeds: 19 weed species were recorded within the Site, however, none are listed under the BAM Act or listed as WONS (Ecoscape 2015).



5.1.1 World Heritage Properties

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.

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 key reasons why the proposal is not likely to have significant impacts on a matter protected under the EPBC Act using the Significant Impact Criteria for endangered species and ecological communities is 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

The Site contains a total of 0.79 ha of Banksia Woodlands TEC which is also identified as potential Black Cockatoo foraging habitat, of which 0.30 ha is proposed to be cleared as part of the Hardcastle Park development (Figure 9; Figure 10).

The development of the Site will result in the clearing of 0.30 ha of Black Cockatoo potential foraging habitat in mostly 'Excellent' and 'Very Good' condition (Figure 8). The foraging habitat consists of Eucalyptus marginata and Banksia attenuata species of inferred FCT 20a – Banksia attenuata woodlands over species rich dense shrublands and FCT28 – Spearwood Banksia attenuata or Banksia attenuata-Eucalyptus woodlands (Ecoscape 2015). The Site contains no Black Cockatoo breeding habitat (Ecoscape 2015). No Black Cockatoos or other conservation significant fauna species were identified during the survey.

The Site is located within 4 km of the Yellagonga Regional Park and the Gnangara-Moore River State Forest which are both in conservation with the State Government (DPaW 2014; DEC 2010).

Mapping undertaken by the (then) Department of Parks and Wildlife (DPaW) has identified 11 Bush Forever Sites within a 4 km radius of the Site to have surveyed or inferred floristic community types consistent with the Banksia Woodlands TEC and that are considered suitable foraging habitat for the Black Cockatoo (Figure 5) (DPaW 2016a; Government of Western Australia 2000). These are described below:

Bush Forever Site 199 – Landsdale Road Bushland



15.78 ha

Surveyed

20a Banksia attenuata woodlands over species rich dense shrublands

90% Excellent condition, <10% Very Good condition

Bush Forever Site 493 – Errina Road Bushland, Alexander Heights

8.5 ha

*Inferred

*20a Banksia attenuata woodlands over species rich dense shrublands

>85% Excellent to Very Good condition

Bush Forever Site 196 – Gnangara Road Bushland, Landsdale/Cullacbardee

236.6 ha

*Inferred

*20a Banksia attenuata woodlands over species rich dense shrublands

*21c Low-lying Banksia attenuata woodlands or shrublands

*22 Banksia ilicifolia woodlands

*23a Central Banksia attenuata – B. menziesii woodlands

> 80% Excellent, <15% Very Good condition

Bush Forever Site 201 – Koondoola Regional Bushland

12.5 ha

Surveyed

20a Banksia attenuata woodlands over species rich dense shrublands

>75% Excellent to Very Good condition

Bush Forever Site 385 – Reid Highway Bushland, Mirrabooka/Malaga

96.1 ha



Limited Survey

Structural Unit: Banksia attenuata and B. menziesii with scattered Eucalyptus todtiana

Very Good condition

Bush Forever Site 198 – Beechboro Road Bushland

413.4 ha

*Inferred

*21c Low-lying Banksia attenuata woodlands or shrublands

*22 Banksia ilicifololia woodlands

*23a Central Banksia attenuata – B. menziesii woodlands

<10% Excellent, > 90% Very Good to Good condition

Bush Forever Site 193 – Gnangara Lake and Adjacent Bushland

- 162.3 ha
- Surveyed

23a Central Banksia attenuata – B.menziesii woodlands

>75% Very Good to Excellent condition

Bush Forever Site 463 – Starlight Grove Bushland

17.9 ha

Limited Survey

Structural unit: Eucalyptus marginata open forest to closed forest; Banksia attenuata and B.menziesii low open forest.

Excellent condition

Bush Forever Site 327 – Badgerup Lake and Adjacent Bushland, Wanneroo

92.6 ha

*Inferred



*24 Northern Spearwood shrublands and woodlands

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

<60% Very Good, >40% Good condition

Bush Forever Site 299 – Yellagonga Regional Park

380.9 ha

Surveyed

25 Southern Eucalyptus gomphocephala – Agonis flexuosa woodlands

28 Spearwood Banksia attenuata or B. attenuata – Eucalyptus woodlands

>75 % Very Good to Excellent condition

Bush Forever Site 328 – Decourcey Way Bushland, Marangaroo

32.8 ha

Surveyed

20a Banksia attenuata woodlands over species rich dense shrublands

>75% Very Good, <25% Good condition

Although the Site will involve the clearing of approximately 0.30 ha of potential Black Cockatoo foraging habitat, it is not considered significant in a local or regional context. The EPBC Act referral guidelines have identified that the clearing of more than 1 ha of quality foraging habitat is a 'significant impact'. As the clearing involves 0.30 ha of potential Black Cockatoo foraging habitat, as well as 0.49 ha being retained for future conservation, the proposed action will not result in a significant impact to the Black Cockatoo species.

In addition, the EPBC Act Referral guidelines state that creating a gap of greater than 4 km between patches of Black Cockatoo habitat is at a high risk of causing significant impact (DSWEPaC 2012). Approximately 0.49 ha of Black Cockatoo potential foraging habitat will remain in the balance of title on Site and will not reduce the connectivity between patches of habitats.

The Bush Forever Sites range between 17.9 ha and 413.4 ha in size and they are in mostly 'Excellent', 'Very Good' and 'Good' condition (Government of Western Australia 2000), this suggests that these conservation areas may provide more suitable Black Cockatoo habitat than the Site and higher quality patches of Banksia Woodlands TEC. A number of these Bush Forever Sites are also under conservation or vested with the State Government (DPaW 2016a; 2016b). These vested Reserves and Bush Forever Sites ensure the long term protection and



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conservation of bushland.

In addition, there are several parcels of freehold land within the vicinity of the Site that have intact native remnant vegetation that are likely to contain suitable foraging habitat and floristic community types representative of the Banksia Woodlands TEC; particularly FCT20a and FCT28.

The proposal to clear 0.30 ha of Black Cockatoo potential foraging habitat is not considered to be significant in a local or regional context and is unlikely to result in a long term decrease in the size of the population. The lack of potential breeding habitat within the Site and the highly urbanised surrounding area suggests that the Site is not a primary habitat for the species. It is likely that surrounding Bush Forever sites and Regional Reserves are providing greater areas of higher quality and non-fragmented Black Cockatoo habitat. However, the remaining 0.49 ha of potential foraging habitat will allow continued use of the Site by fauna species.

Similarly, the proposal to clear 0.30 ha of Banksia Woodlands TEC is not considered to represent a significant loss of the ecological community, as 0.49 ha will remain onsite and will be managed and protected by the City of Wanneroo.

Reduce the area of occupancy of the species or ecological community

It is unlikely that the proposal will reduce the area of occupancy of the Black Cockatoos and Banksia Woodlands TEC. The majority of nearby Bush Forever Sites and Reserves contain inferred or surveyed floristic community types indicative of the Banksia Woodlands TEC and Black Cockatoo foraging 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, some of these areas are managed in conservation programs to ensure the long term protection for the Black Cockatoo and provide conservation and rehabilitation for the Banksia Woodlands TEC.

0.49 ha (62 %) of potential Black Cockatoo foraging habitat and Banksia Woodlands TEC will be retained within the Site, allowing fauna species to continue to utilise the area. Similarly, the surrounding conservation areas 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 therefore considered highly unlikely that the clearing of 0.30 ha of Black Cockatoo foraging habitat and Banksia Woodlands TEC would reduce the area of occupancy of the species.

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 significant fragmentation of an existing population into two or more populations. 0.49 ha of Banksia Woodlands TEC and potential Black Cockatoo potential foraging habitat will remain within the balance of title and the presence of nearby protected bushland in Reserves and Bush Forever Sites indicates that the clearing of 0.30 ha of vegetation within the Project Area will not represent a significant loss in a



regional context.

The proposal will not result in creating a gap of more than 4 km between patches of Black Cockatoo habitat due to the presence of nearby large areas of intact remnant vegetation that contain or are inferred to contain suitable foraging habitat. The proposed clearing of 0.30 ha of Banksia Woodlands TEC is not significant in a regional context, with surrounding conservation areas containing the same sub-communities of the TEC, and therefore it can be inferred that these areas may represent the Banksia Woodlands TEC over a greater, protected area.

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

The seasonal movements of Black Cockatoos mean they require large areas of habitat for breeding, roosting and foraging, as well as connectivity between habitats to assist their movement across the landscape (DSEWPaC 2012). Based on the EPBC Act Referral Guidelines for the Black Cockatoos, critical habitat is defined as providing roosting, foraging and breeding habitat that 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 habitat and is not considered to be critical habitat for the survival of the Black Cockatoo species.

The Proposal will involve the clearing of 0.30 ha of Black Cockatoo foraging habitat. The surrounding Bush Forever Sites and Reserves are likely to contain more suitable foraging habitat and breeding habitat for the Black Cockatoo that is considered critical for the survival of the species.

Additionally, the remaining Banksia Woodlands TEC will ensure the survival of the ecological community on-site and maintain the connection to surrounding large conservation areas and Black Cockatoo habitats within a 4 km radius that may be representative of the Banksia Woodlands TEC (DotEE 2016). Several of these areas are managed by agencies such as the DBCA and the Conservation Commission of WA to preserve and enhance the associated conservation values. Therefore, the retention of 0.49 ha or 62% of the Banksia Woodlands TEC onsite will ensure the survival of the ecological community.

Disrupt the breeding cycle of a population

The Site does not contain any Black Cockatoo potential breeding habitat and therefore, the proposal is considered highly unlikely to disrupt the breeding cycle of a Black Cockatoo population.

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 patches of remnant vegetation within a 4 km radius of the Site, including Bush Forever and managed Reserves, these patches are more likely to contain more suitable and connected habitat for the Black Cockatoo and better



representation and conservation of the Banksia Woodlands TEC.

The Black Cockatoo foraging habitat within the Project Area ranges from 'Good to Degraded' to 'Excellent' condition and is primarily in 'Excellent' condition (0.18 ha). While surrounding conservation areas have between 60% and 90% of the vegetation in 'Excellent' to 'Good' condition (Government of Western Australia 2000). The clearing of 0.30 ha of potential foraging habitat is not considered to modify, destroy, remove or decrease the availability or quality of habitat to the extent that the Black Cockatoo species are likely to decline. That is due to surrounding areas considered likely to provide more significant and larger habitats than the Site.

The Banksia Woodlands TEC within the Project Area is in 'Excellent' (0.18 ha), 'Very Good' (0.08 ha) and 'Good to Degraded' (0.04 ha) condition, approximately 0.30 ha is proposed to be cleared and 0.49 ha will be retained. It is not considered a significant loss that will modify or destroy any abiotic factors necessary for the ecological community to survive, onsite or within a regional context. The surrounding landscape is mostly fragmented, highly urbanised with portions of vacant cleared land and some small patches of remnant native vegetation remain intact. The removal of 0.30 ha of vegetation within a highly fragmented and urban environment is not considered to be significant enough to cause a considerable decline of the ecological community within the region.

Result in invasive species that are harmful to a Critically Endangered or Endangered species becoming established in the Endangered or Critically Endangered Species' habitat / Cause a substantial reduction in the quality or integrity if an occurrence of an ecological community

The Proposal is unlikely to introduce or spread invasive species that are harmful to the Black Cockatoos. The survey identified a total of 19 introduced species within the Site, none of which are listed under the *Biosecurity and Agriculture Management Act 2007* (BAM Act) or listed as Weeds of National Significance (WONS) (Ecoscape 2015). As the Site contains weed species, it is unlikely that the clearing of the Project Area will introduce species that are harmful to the Black Cockatoos, Black Cockatoo potential foraging habitat or the Banksia Woodlands TEC.

Clearing of the Project Area may ameliorate weed species. If invasive species do result in the uncleared area from the development, they are not seen to be key threats to Black Cockatoos and can be managed. Best practice management will be undertaken to ensure that the machinery and equipment used on Site will not increase the risk of introducing weeds or disease.

The removal of 0.30 ha of the Banksia Woodlands TEC is not likely to reduce the quality or integrity of the remaining 0.49 ha of the TEC as best management practice will be used to ensure the spread of invasive species and the use of fertilisers or herbicides nearby to maintain the integrity of the remaining vegetation onsite. In addition, the remaining vegetation will be fenced for protection.

The Banksia Woodlands TEC within the Site is isolated within a highly urbanised landscape and it is not considered that clearing 0.30 ha will increase the occurrence of any invasive species or reduce the quality of the remaining TEC.



Introduce disease that may cause the species to decline

The proposed action to clear and develop the Site for a community park is unlikely 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 (DotEE 2015). Given that the majority of the surrounding area is already highly urbanised and cleared, it is not likely that the Proposal will increase the presence of foxes or cats. As such, it is not likely that the Proposal would introduce disease that may cause the Black Cockatoo species to decline.

Clearing of land and the construction of urban surfaces can result in the spread of dieback (*Phytophthora cinnamomi*) into the remaining patch of Banksia Woodlands TEC. Subsequently, the adjacent patch of remaining 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 occurrence. This will be done by ensuring the adjacent vegetated patch will be maintained or improved by leaving and/or implementing fallen logs, leaf litter and controlling weed species which control dieback (DotEE 2016). The Proposed clearing of the Site is considered unlikely to introduce disease that may cause the quality of the adjacent Banksia Woodlands TEC to decline.

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

0.49 ha of the Banksia Woodlands TEC proposed to be retained onsite is not likely 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 vegetation remaining. It is not likely that the proposal will cause a decline or loss of functionality of important species of the Banksia Woodlands TEC due to the proposed development not involving intensive land degradation compared to other urban land uses.

Interfere with the recovery of the species or ecological community

The proposed action is unlikely to interfere with the recovery of the Black Cockatoo species. The Site does not contain any potential breeding habitat and 0.49 ha of combined potential Black Cockatoo foraging habitat and Banksia Woodlands will remain within the balance of title and given the surrounding conservation areas, it is not likely that the Proposal to clear 0.30 ha will interfere with the recovery of the Black Cockatoo species or the Banksia Woodlands ecological community.



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.

Not applicable.

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.

N/A

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.

-Butler North District Open Space (2017/8053)

-Flynn Drive / Pinjar Road Intersection Works (2017/7983)



-Lot 9000 Flynn Drive, Neerabup, WA (2007/3479)

-Ocean Reef extension (Hartman to Gnangara) stage 1 (2010/5388)

-Ocean ReefRd - Section 2 (to Sydney Rd - Lot7) (2010/5388)

-Pinjar Road realignment (Caporn St intersection) (2009/4926)

-Ocean Reef Rd - Section 3 & 4 (Sydney Rd to Alexander) (2010/5388).



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
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
City of Wanneroo, 2002. East Wanneroo Cell 5 (Landsdale) Agreed Structure Plan 7 (ASP7). Government of Western Australia.	Structure Plan	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), 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 Agriculture and Food WA (DAFWA), 2017. Western Australian Organism List – Legal Status and Control Categories. Accessed https://w ww.agric.wa.gov.au/organisms. Government of Western Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Biodiversity Conservation and Attractions (DBCA), 2017. NatureMap Search Tool. Accessed 2 October 2017 from https://natur emap.dpaw.wa.gov.au/.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A



Reference Source	Reliability	Uncertainties
Government of Western		
Australia.		
Department of Environment	All references are peer	N/A
Regulation (DER), 2014. Acid	reviewed papers in reputable	
Sulfate Solls. GIS Dataset.	Journals or are government	
Australia.		
Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC), 2012. EPBC Act referral guidelines for three threatened black cockatoo species. Commonwealth of Australia.	All references are peer previewed papers in reputable journals or are government publications or data.	N/A
Department of Parks and	All references are peer	N/A
Wildlife (DPaW), 2014. DPaW	reviewed papers in reputable	
Managed Lands. GIS dataset.	journals or are government	
Australia	publications of data.	
Department of Parks and	All references are peer	N/A
Wildlife (DPaW), 2016a. Bush	reviewed papers in reputable	
Forever Sites. GIS Dataset.	journals or are government	
Government of Western	publications or data.	
Australia.	All references are peer	N/A
Wildlife (DPaW), 2016b, DPaW	reviewed papers in reputable	
Managed Lands. GIS Dataset.	journals or are government	
Government of Western	publications or data.	
Australia	All	N1/A
Wildlife (DPaW) 2017a	All references are peer	N/A
Geomorphic Wetlands, GIS	journals or are government	
Dataset, Government of	publications or data.	
Western Australia.		
Department of Planning, Lands	All references are peer	N/A
and Heritage (DPLH), 2017.	reviewed papers in reputable	
Aboriginal Heritage Inquiry	Journals or are government	
daa wa qoy au/ahis/	publications of data.	
Government of Western		
Australia.		
Department of the Environment	All references are peer	N/A
and Energy (DotEE), 2013.	reviewed papers in reputable	
Significant Impact Guidelines	journals or are government	
Environmental Significance.	publications of uata.	



Reference Source	Reliability	Uncertainties
Commonwealth of Australia.		
Department of the Environment and Energy (DotEE), 2015. Threat abatement plan for predation by feral cats. 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 (DotEE), 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 (DotEE), 2017. Protected Matters Search Tool. Accessed on 2 October 2017 from http://www.environment.go v.au/webgis- framework/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. Commonwealth of Australia.	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A
Department of Water (DoW), 2016. 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 and Environment Regulation (DWER), 2017. 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
Ecoscape 2015. Hardcastle Park Biological Survey. Prepared for the City of Wanneroo October 2015.	Biological Survey	N/A



Reference Source	Reliability	Uncertainties
Perth, Western Australia.		
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
Department of Water and	All references are peer	N/A
Environmental Regulation (DWER), 2017. Perth Water Register. Accessed https://map s.water.wa.gov.au/#/webmap/re gister. Government of Western Australia.	reviewed papers in reputable journals or are government publications or data.	
Geological Survey of Western	All references are peer	N/A
Australia (GSWA), 2008, Surface Geology, GIS Dataset. Department of Mines and Petroleum. Government of Western Australia.	reviewed papers in reputable journals or are government publications or data.	
Government of Western	All references are peer	N/A
Australia, 2000. Directory of Bush Forever Sites, Volume 2. Department of Environmental Protection. Perth, Western Australia.	reviewed papers in reputable journals or are government publications or data.	
Heddle, E.M., Loneragan, O.W.	All references are peer	N/A
and Havel, J.J., 1980. Vegetation of the Darling System, Department of Environment and Conservation (south of Moore River) Department of Environment and Conservation.	reviewed papers in reputable journals or are government publications or data.	
Hill, AL., Semeniuk, CA.,	All references are peer	N/A
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.	reviewed papers in reputable journals or are government publications or data.	
Johnstone, R.E, & Kirkby, T.	All references are peer	N/A



Reference Source	Reliability	Uncertainties
(2011). Carnaby's Cockatoo (Calyptorhynchus latirostris), Baudin's Cockatoo (Calyptorhynchus baudinii) and the Forest Red-tailed Black Cockatoo (Calyptorhynchus Banksii naso) Swan Coastal Plain (Lancelin– Dunsborough), Western Australia. Studies on distribution, status, breeding, food, Movements and Historical changes. Perth: Department of Planning.	reviewed papers in reputable journals or are government publications or data.	
Keighery, B. J., 1994. Bushland Plant Survey. A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc), Western Australia.	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 Coastal Plain subregion), A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002. Department of Conservation and Land Management, Perth.	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
Ramsar, Iran, 1971. A Guide to the Convention on Wetlands. 6th edition Ramsar Convention Secretariat.	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	All references are peer reviewed papers in reputable journals or are government publications or data.	N/A



Australian Government

Department of the Environment and Energy

Reference Source	Reliability	Uncertainties
Report 249). Department of Agriculture and Food Western Australia, Perth.		
State Heritage Office (SHO), 2017. inHerit Heritage Search. Accessed http://inherit.stateheri tage.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
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



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?

N/A

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

Director - Assets

9.2.2 First Name

Harminder

9.2.3 Last Name

Singh

9.2.4 E-mail

enquiries@wanneroo.wa.gov.au

9.2.5 Postal Address

Locked Bag 1 WANNEROO WA 6946 Australia

9.2.6 ABN/ACN

ABN

64295981165 - CITY OF WANNEROO

9.2.7 Organisation Telephone

08 9405 5000

9.2.8 Organisation E-mail

enquiries@wanneroo.wa.gov.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, $\underline{HACMINDEL}$ (\underline{CINCGH} , 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: 21/11/2017

I, $\underline{HARMINDERSINGH}$, the person proposing the action, consent to the designation of <u>360 Enivironmental Pty Ltd</u> as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature: Date: 21/11/2017

9.3 Is the Proposed Designated Proponent an Organisation or Individual?



Australian Government

Department of the Environment and Energy

Organisation

9.5 Organisation

9.5.1 Job Title

Director - Assets

9.5.2 First Name

Harminder

9.5.3 Last Name

Singh

9.5.4 E-mail

enquiries@wanneroo.wa.gov.au

9.5.5 Postal Address

Locked Bag 1 WANNEROO WA 6946 Australia

9.5.6 ABN/ACN

ABN

64295981165 - CITY OF WANNEROO

9.5.7 Organisation Telephone

08 9405 5000

9.5.8 Organisation E-mail

enquiries@wanneroo.wa.gov.au

Proposed designated proponent - Declaration

I, $\underline{HARMINDERS}$, \underline{SiNGH} , 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.

A D

Australian Government Department of the Environment and Energy

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Principal Environmental Scientist

9.8.2 First Name

Katherine

9.8.3 Last Name

Choo

9.8.4 E-mail

kathychoo@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

Appendix A - Attachments

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

1. 17_137347_report_cp07-05_17_development_of_hardcastle_park_landsdale.pdf

- 2. 2418_epbc_figure_1_site_location.pdf
- 3. 2418_epbc_figure_2_project_area.pdf
- 4. 2418_epbc_figure_3_hydrology.pdf
- 5. 2418_epbc_figure_4_broad_vegetation_types.pdf
- 6. 2418_epbc_figure_5_conservation_areas.pdf
- 7. 2418_epbc_figure_6_heritage.pdf
- 8. 2418_epbc_figure_8_vegetation_condition.pdf
- 9. 2418_epbc_figure_9_banksia_woodlands_tec.pdf
- 10. 2418_epbc_figure_10_bc_habitat.pdf
- 11. 2418_figure_7a_historical_aerials_1953.pdf
- 12. 2418_figure_7b_historical_aerials_1965.pdf
- 13. 2418_figure_7c_historical_aerials_1974.pdf
- 14. 2418_figure_7d_historical_aerials_1985.pdf
- 15. 2418_figure_7e_historical_aerials_1995.pdf
- 16. 2418_figure_7f_historical_aerials_2005.pdf
- 17. 2418_figure_7g_historical_aerials_2015.pdf
- 18. 2418_figure_7h_historical_aerials_2017.pdf
- 19. 2418ab_hardcastle_park_epbc_supporting_document_final.pdf
- 20. attachment_1_-_concept_plan.pdf
- 21. ecoscape_flora_veg_fauna_report.pdf
- 22. hardcastle_park_consultation_april_2017_survey_results.pdf
- 23. hardcastle_shapefiles.zip
- 24. management_order_51878.pdf