

Appendix F - AECOM (2025b) Fauna Technical Memorandum

10 July 2025

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Dear Drew

NT to NBT 330kV Double Circuit - Woylie, Chuditch and significant invertebrates

1.0 Introduction

Western Power engaged AECOM Australia Pty Ltd (AECOM) to provide additional information to the Western Australian Environmental Protection Authority (EPA) and the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW). This information, requested for the Northern Terminal to Neerabup Terminal 330kV Transmission Line (NT to NBT) Project, relates to the significant fauna species listed in Table 1.

Table 1 Fauna species identified for further information

| Scientific name | Common name | Listing | |
|--------------------------------------|--|---------------|----------|
| | | BC Act / DBCA | EPBC Act |
| <i>Bettongia penicillata ogilbyi</i> | Woylie | CR | EN |
| <i>Dasyurus geoffroii</i> | Chuditch | V | VU |
| <i>Hesperocolletes douglasi</i> | Douglas' Broad-headed Bee, Rottnest Bee | CR | CE |
| <i>Leioproctus douglasiellus</i> | a short-tongued bee | EN | CE |
| <i>Hylaeus globuliferus</i> | Woollybush Bee | P3 | |
| <i>Idiosoma sigillatum</i> | Swan Coastal Plain Shield-backed Trapdoor Spider | P3 | |
| <i>Leioproctus contrarius</i> | a short-tongued bee | P3 | |
| <i>Synemon gratiosa</i> | Graceful Sun-moth | P4 | |

BC – Biodiversity Conservation Act 2016; CR/CE- Critically Endangered; E/EN- Endangered, DBCA – Department of Biodiversity, Conservation and Attractions, P3 – Priority 3, P4- Priority4 EPBC Act – Environment Protection and Biodiversity Conservation Act 1999.

1.1 Project history

Western Power commissioned AECOM to conduct a detailed vegetation, targeted flora, basic fauna assessment and a black cockatoo assessment for a 576.07 ha survey area for the Project (AECOM 2023). Following the survey, Western Power realigned the Project Development Envelope (PDE) to a 163 ha linear corridor between the Northern and Neerabup Terminals. Approximately 14 ha of the re-aligned PDE extended beyond the AECOM (2023) survey area. In collaboration with Western Power, AECOM extrapolated vegetation types and condition data for the unsurveyed areas. AECOM (2024a) undertook a Preliminary Environmental Impact Assessment (PEIA) for the 163 ha PDE.

On 22 February 2024, Western Power provided the PEIA document to the EPA and DCCEEW as part of the Project's referral documentation. Both regulators responded with a request for further information.

Following the referral, Western Power has revised the PDE, which now spans 217.24 ha, including the Northern and Neerabup Terminal boundaries and several deviations along the transmission corridor. Western Power has formalised this change under a section 43a application under the *Environmental Protection Act 1986* (EP Act) and a request to vary a proposal under assessment under Section 156 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This will be referred to as the 'PDE' for this technical report.

AECOM (2025) undertook a second survey for the project in February 2025. The survey included a refined black cockatoo assessment for the PDE, ground-truthing of extrapolated data and an ecological review to align data from multiple surveys.

In addition, AECOM (2024b) conducted a detailed vegetation, flora and basic fauna assessment for Western Power's Clean Energy Link (CEL) program on the Swan Coastal Plain. The survey included five distinct survey areas, of which two intersect the revised PDE, Neerabup Terminal and East Wanneroo survey area (204.98 ha) and Northern Terminal survey area (25.78 ha).

The additional information will also be incorporated into the Environmental Review Document (ERD) that will be submitted to the EPA as referral supporting document. Using historical records of occurrence data, published conservation advice and other relevant literature, a summary of the likelihood of occurrence of each species within the PDE is provided below.

2.0 Fauna habitat

2.1 Habitat types

AECOM (2025) mapped 11 fauna habitats within the PDE, of which four were considered suitable for the significant fauna listed in Table 1. These habitat types and their extent within the PDE are described in Table 2 below.

The remaining habitat types are described in Section 6.3 of the AECOM (2023) biological report and Section 6.3 of the ecological review (AECOM 2025). These habitat types were not considered suitable for significant fauna species assessed in this memorandum.

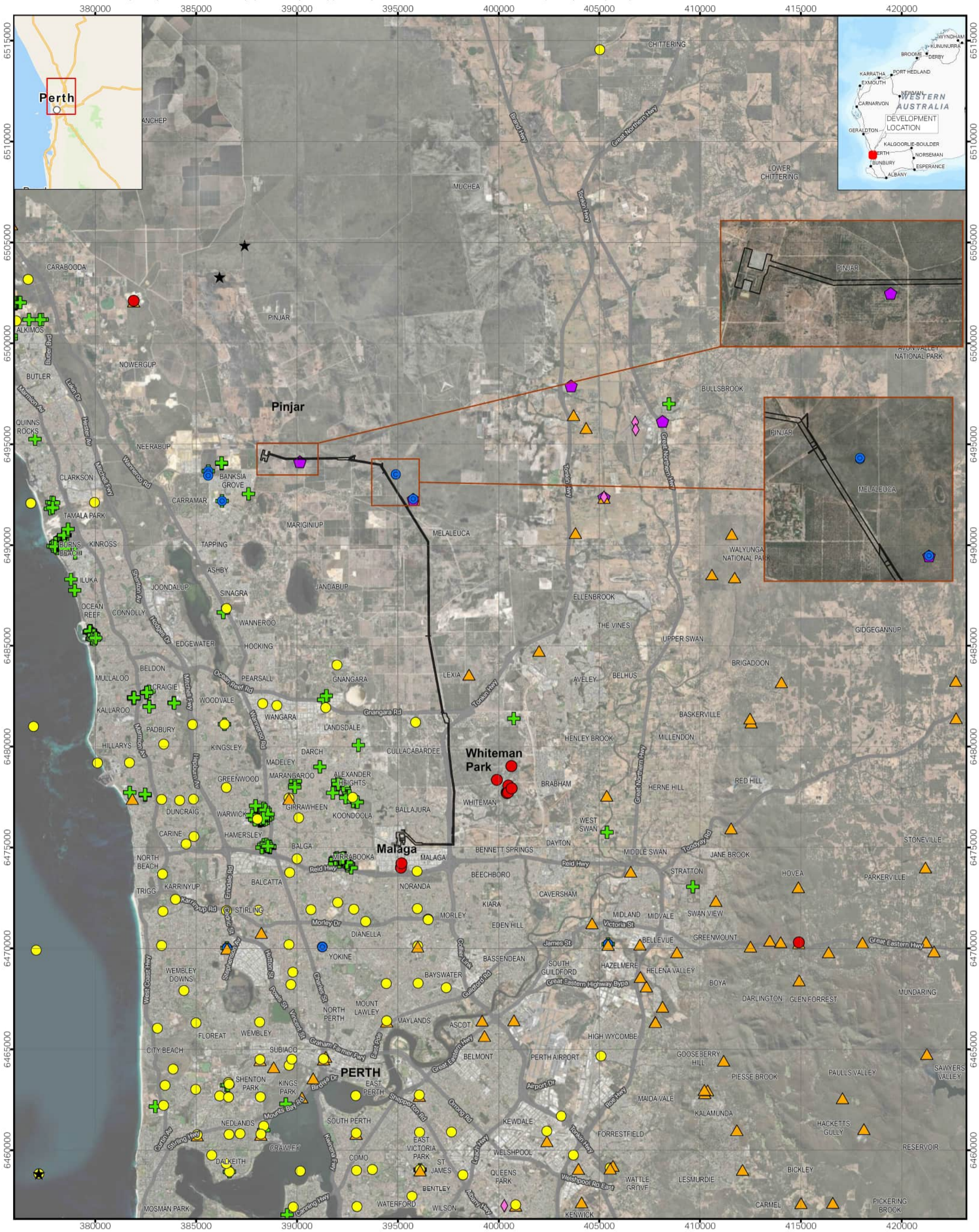
Table 2 Fauna habitat descriptions

| Habitat | Suitable for species in Table 1 |
|---|---|
| Banksia Woodlands (6.84 ha) Dense <i>Banksia</i> sp. woodlands with mixed understorey with Jarrah (<i>Eucalyptus marginata</i>) and Marri (<i>Corymbia calophylla</i>) scattered overstorey. Moderate understorey density including Grasstree (<i>Xanthorrhoea preissii</i>). Containing species including <i>Gastrolobium</i> spp., <i>Lechenaultia</i> sp. and <i>Lomandra hermaphrodita</i> . Leaf litter and debris common over light loose sand. Frequent logs of large mature trees. | <ul style="list-style-type: none"> • Woylie • a short-tongued bee (<i>Leioproctus contrarius</i>) • Graceful Sunmoth • Woollybush Bee • Chuditch |
| Eucalyptus Woodland (50.46 ha) Marri, Coastal Blackbutt (<i>Eucalyptus todtiana</i>) and Jarrah dominate low open woodland with mixed understorey. Leaf litter and debris common. | <ul style="list-style-type: none"> • Woylie • Chuditch |
| Mixed Shrubland (1.22 ha) Grasstree dominated shrublands, with mixed native understorey. Grasstrees have full skirts, and the soil present is sandy. Signs of native diggings were common. Infrequent Paperbark (<i>Melaleuca preissiana</i>) and other native trees. | <ul style="list-style-type: none"> • Woylie • Chuditch |
| Adenanthos/Plantation (57.14 ha) Isolated pine (<i>Pinus pinaster</i>) regrowth over Woollybush (<i>Adenanthos cygnorum</i> var. <i>cygnorum</i>), scattered Grasstree and <i>Macrozamia fraseri</i> . Proximately Woollybush, with minimal leaf litter and scattered native shrub on white/light sandy soil. Ground cover includes mostly weeds and grasses. Logs and leaf litter largely absent. | <ul style="list-style-type: none"> • Woylie • Woollybush Bee |

2.2 Fauna records

AECOM (2023, 2024b) conducted a basic fauna survey, which included a comprehensive desktop assessment, habitat type assessment and recorded direct and indirect observations of fauna. No evidence of the species listed in Table 1 was recorded during any of the AECOM surveys.

The historical records from DBCA Threatened fauna database and Atlas of Living Australia (ALA) are presented in Figure 1.



LEGEND

- Development Envelope
- Species (WA Listing, EPBC Status)
 - Woylie (CR, EN)
 - ▲ Chuditch (VU, VU)
 - ★ Douglas' broad-headed bee (*Hesperocolletes douglasi*) (CR, CR)
 - Woollybush bee (*Hylaeus globuliferus*) (P3, none)
 - Swan Coastal Plain shield-backed trapdoor spider (*Idiosoma sigillatum*) (P3, none)
 - ◆ a short-tongued bee (*Leioproctus contrarius*) (P3, none)
 - ◆ a short-tongued bee (*Leioproctus douglasiellus*) (EN, CR)
 - ✚ Graceful sunmoth (*Synemon gratiosa*) (P4, none)

Historical occurrence records for Woylie, Chuditch and conservation significant SRE invertebrate fauna

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NT TO NBT 330KV DOUBLE CIRCUIT - WOYLIE, CHUDITCH AND SIGNIFICANT INVERTEBRATES

3.0 Fauna species assessment

3.1 Woylie (*Bettongia penicillata ogilbyi*)

The Woylie, also known as Brush-tailed Bettong, is a member of the family Potoridae, a group of small native Australian marsupial mammals. The species is listed as Endangered under the EPBC Act and as Critically Endangered under the BC Act. The Woylie was once widespread, ranging across arid and semi-arid habitats of southern and northwestern Australia. In Western Australia, the species is now known from four natural sub-populations and several re-introduced populations in the south-west (DSEWPac 2018a).

Key threats to the species include predation by European Red Fox (*Vulpes vulpes*) and feral cats (*Felis catus*), inappropriate fire regimes, habitat loss and degradation, competition with introduced herbivores, climate change, introduced disease and habitat change (DSEWPac 2018a). The species inhabits dry sclerophyll forest with dense overstoreys, favouring dense Myrtaceous shrubland, Kwongan (Proteaceous) or mallee heath and a dense understorey of shrubs, especially *Gastrolobium* spp. (Menkorst & Knight 2013; DSEWPac 2018a). Subpopulations, found primarily at Perup, Dryandra and Tutanning, have undergone expansions from a combination of successful translocation re-introduction programs and control of foxes (Yeatman & Groom 2012; Menkorst & Knight 2013, Wayne et al. 2013).

The four habitats listed in Table 2 represent suitable habitat for the Woylie (115.66 ha). No historical records of Woylies occur within the PDE and no direct or indirect evidence of their presence was noted during the biological survey. Most of the records nearest to the PDE occur within Whiteman Park (Figure 1), two kilometres east of the PDE. This translocated population originated from subpopulation strongholds within the Upper Warren Region along the South Coast of southwestern Western Australia between 2010 and 2013 (Wayne et al. 2013). The remaining records correspond with eight individuals that were translocated to the Native Animal Rescue facility in Malaga in November-December 2010 to be monitored for *Trypanosoma* infections and veterinary research.

The translocated colony at Whiteman Park have expanded from a founder subpopulation of 40-50 individuals to now more than 400 individuals living in the fenced Woodland Reserve (Whiteman Park 2024). These records and suitable habitat account for the “high” likelihood of the species occurring near the areas where AECOM conducted basic fauna surveys for the Project (AECOM 2023).

Given no records of the species within 20 kilometres (km) of the PDE occur outside the fenced boundaries of Whiteman Park or Native Animal Rescue facility, and no direct or indirect evidence of the species was observed during the biological survey, it is unlikely that the species occurs within the PDE.

3.2 Chuditch (*Dasyurus geoffroii*)

The Chuditch, also known as Western quoll, is a native carnivorous marsupial of the family Dasyuridae, listed as Vulnerable under the EPBC Act and BC Act. The Chuditch was once widespread across all Australian states, but now only occupies less than five percent of its former range. In Western Australia, its range has retracted to patches of the Jarrah Forrest and the south coast of Western Australia and occurs in low numbers between Moora and Perth (DEC 2012; Menkorst & Knight 2013). Its threatened status has resulted primarily from land clearing leading to a loss and fragmentation of suitable habitat. Key threats to the species include clearing (particularly of riparian vegetation) and removal of suitable den logs and den sites, predation by and competition from foxes and feral cats, deliberate and accidental mortality from poisoning, trapping, illegal shooting and road kills (DEC 2012; Menkorst & Knight 2013). The species is generally nocturnal and tends to be solitary, and often difficult to survey (DEC 2012; Menkorst & Knight 2013).

A total of 39 DBCA records for Chuditch occur within 20 km of the survey area, of which 13 have been recorded within the last 20 years. The nearest record is from 2010 of one individual approximately two kilometres east of the PDE, within the Gnangara Pine Plantation. Most other records of the species are associated with foothills adjacent to the Darling Scarp and Jarrah Forest (AECOM 2024b) (Figure 1). No direct or indirect evidence of Chuditch was recorded within the survey area nor any suitable den sites for the species (AECOM 2023).

Individuals of the species are known to have wide home ranges (DEC 2012), travelling relatively large distances away from log dens to hunt and scavenge, suggesting perhaps that sightings of the species may often be transient. The most densely populated habitats have been reported from riparian areas of Jarrah Forest containing horizontal hollow logs and burrows (as suitable den and refuge sites).

The four habitat types listed in Table 2 represent suitable habitat for the Chuditch, however, they are not typically found in metropolitan areas of Western Australia. Their current distribution is largely restricted to the south-west of the state, particularly in forested and woodland regions such as the Jarrah forests, mallee shrublands, and heathlands. Chuditch require (DEC 2012):

- Large, contiguous areas of native vegetation
- Low levels of human disturbance
- Abundant ground cover and denning sites.

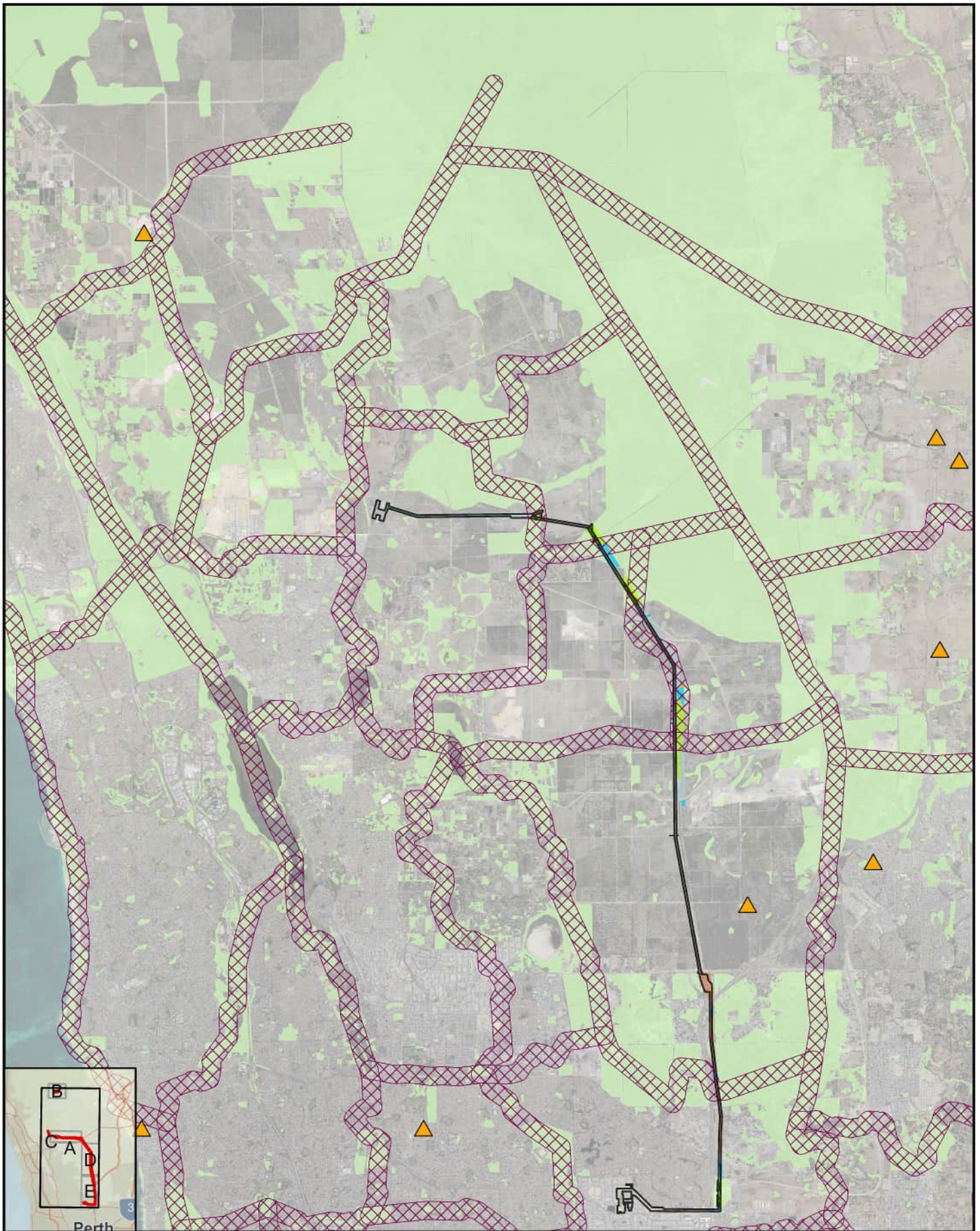
Urban environments generally lack these features and pose additional threats such as:

- Predation by domestic pets
- Vehicle strikes
- Habitat fragmentation
- Poisoning from rodenticides.

However, occasional sightings near the fringes of urban areas or in peri-urban bushland (especially near conservation reserves) are possible, particularly where predator control programs are in place. Chuditch may be transient through the PDE, however, they are unlikely to be dependent on habitat within the PDE for their survival, particularly as no suitable den or burrow sites were observed.

The PDE expands on existing Western Power infrastructure and will not change the area's existing habitat fragmentation. Figure 2 This shows the regional ecological linkages and remnant native vegetation mapping against the PDE. It shows the limited areas where remnant native vegetation will be cleared within the ecological linkages and the large patches of intact vegetation that will remain.

Chuditch may occur only as a transient visitor and is unlikely to be significantly impacted by the Project.



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 APPROVED BY M.CLUNIES-ROSS
 LAST MODIFIED 11 JUN 2025

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Datum: GDA2020 MGA Zone 50
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 km

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 (when printed at A4)

Data sources:
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority (using as Landgate (2010)).
 Service Layer Credits: World Street Map: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
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LEGEND

- Development Envelope
- Remnant Vegetation 2020 (DPIRD-093)
- Regional Linkages

Chuditch Habitat

- Banksia Woodlands
- Marri Woodlands
- Xanthorrhoea shrubland
- Adenanthos/Plantation
- Wetlands

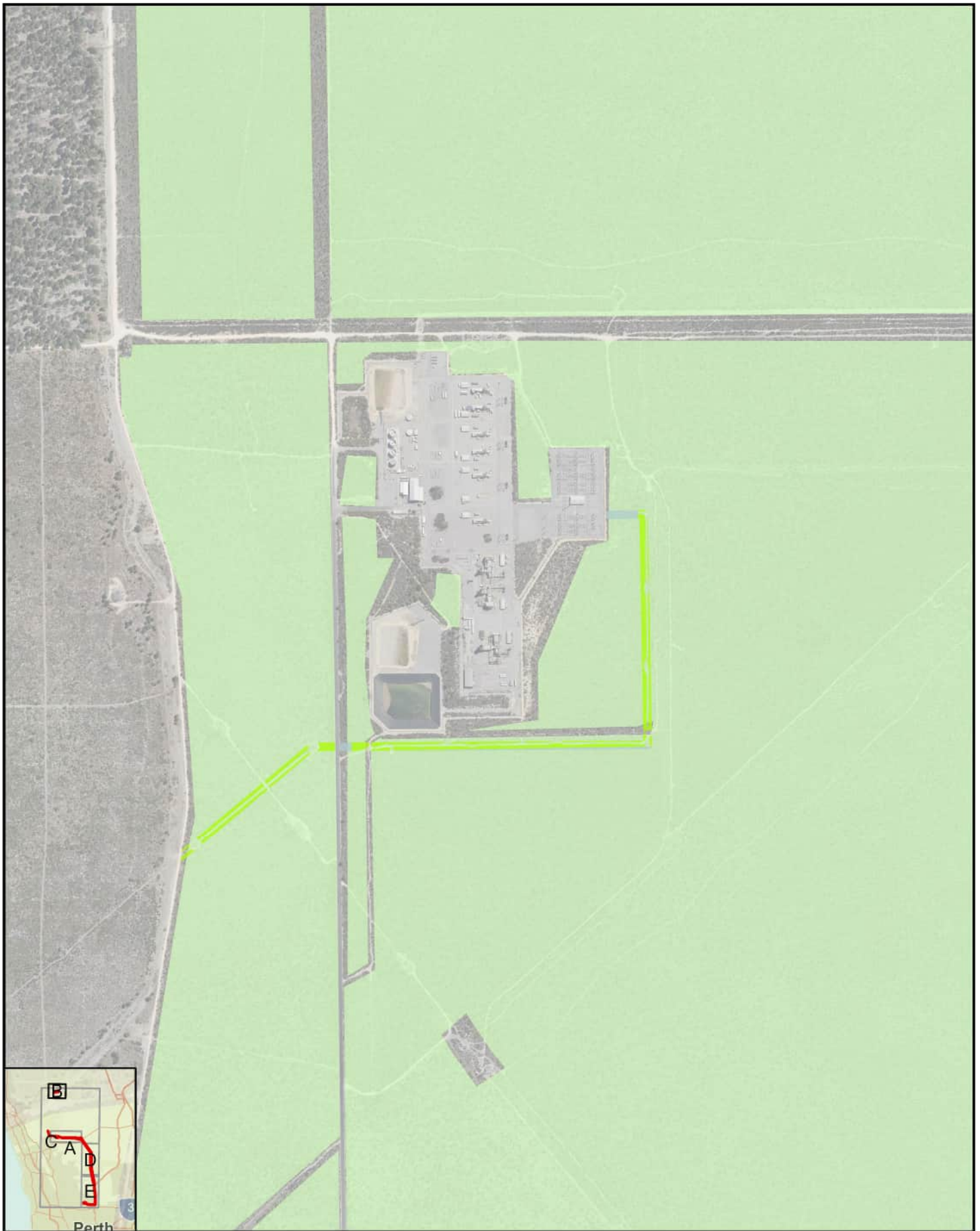
- DBCAs Chuditch (VU, VU)
- ALAs Chuditch

Chuditch Habitat

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*NT-NBT330KV DOUBLE CIRCUIT
 NREP ADDENDUM*

Figure 2-A



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Datum: GDA2020 MGA Zone 50
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 km

1:10,000
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 Landscape: Subscription, Imagery@Bilibee

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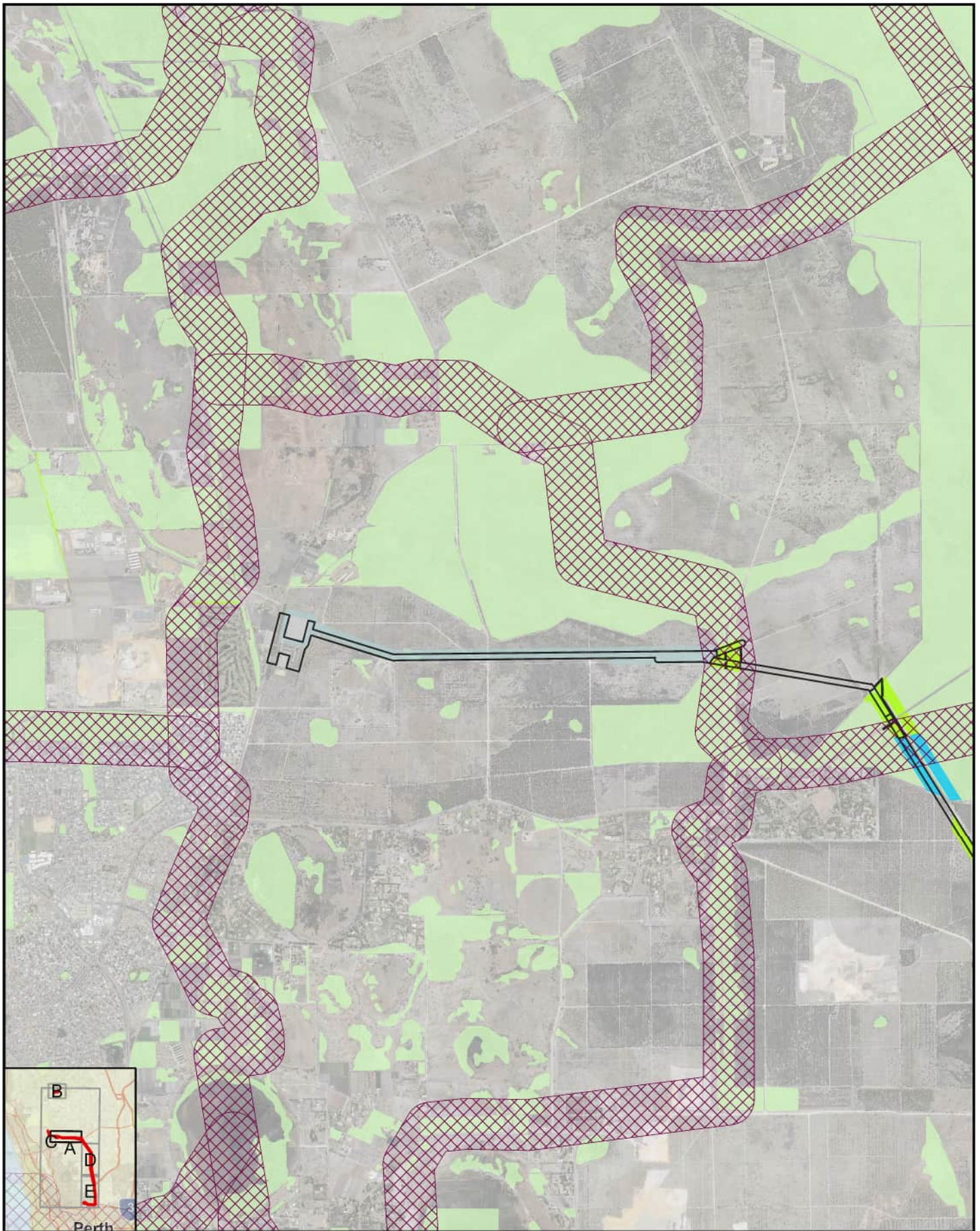
- Development Envelope
- Remnant Vegetation 2020 (DPIRD-093)
- Regional Linkages
- Chuditch Habitat**
 - Banksia Woodlands
 - Marri Woodlands
 - Xanthorrhoea shrubland
 - Adenanthos/Plantation
 - Wetlands
- DBCAs Chuditch (VU, VU)
- ALA Chuditch

Chuditch Habitat

WESTERN POWER

*NT-NBT330KV DOUBLE CIRCUIT
 NREP ADDENDUM*

Figure 2-B



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Datum: GDA2020 MGA Zone 50
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 km

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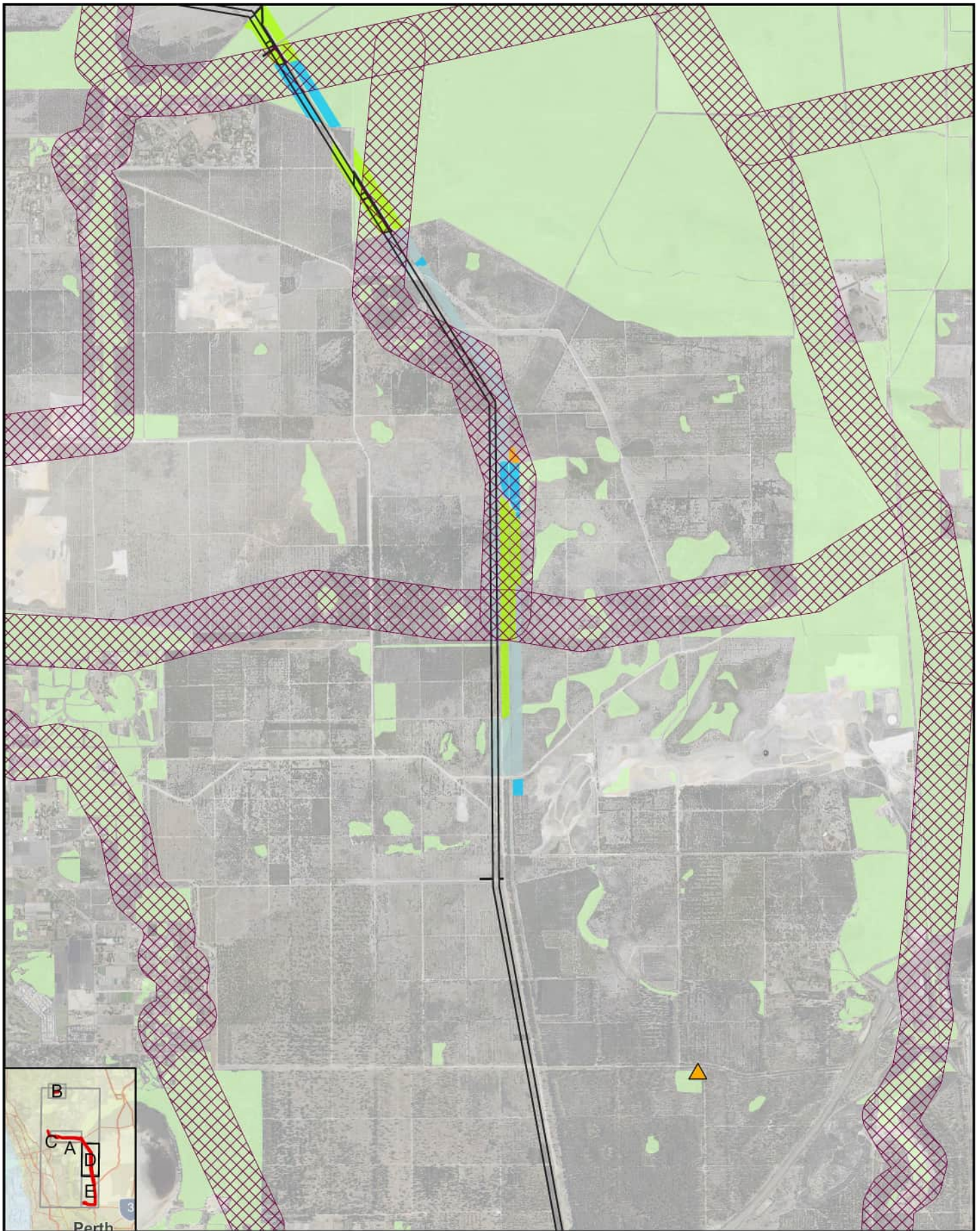
- Development Envelope
- Remnant Vegetation 2020 (DPIRD-093)
- Regional Linkages
- Chuditch Habitat**
 - Banksia Woodlands
 - Marri Woodlands
 - Xanthorrhoea shrubland
 - Adenanthos/Plantation
 - Wetlands
- DBC Chuditch (VU, VU)
- ALA Chuditch

Chuditch Habitat

WESTERN POWER

*NT-NBT330KV DOUBLE CIRCUIT
 NREP ADDENDUM*

Figure 2-C



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Data sources:
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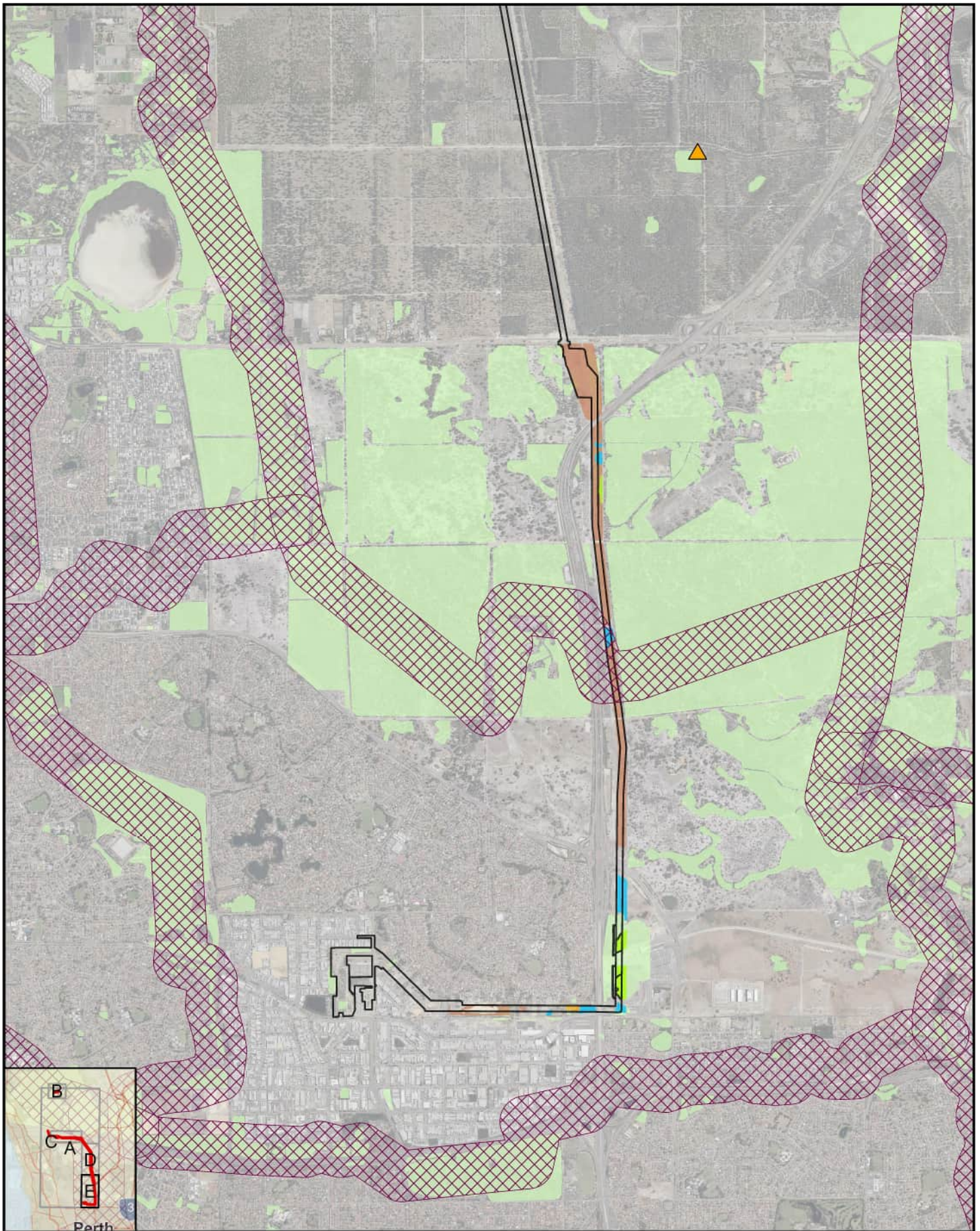
- Development Envelope
- Remnant Vegetation 2020 (DPIRD-093)
- Regional Linkages
- Chuditch Habitat**
 - Banksia Woodlands
 - Marri Woodlands
 - Xanthorrhoea shrubland
 - Adenanthos/Plantation
 - Wetlands
- DBCA Chuditch (VU, VU)
- ALA Chuditch

Chuditch Habitat

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*NT-NBT330KV DOUBLE CIRCUIT
 NREP ADDENDUM*

Figure 2-D



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Datum: GDA2020 MGA Zone 50
 0 0.2 0.4 0.6 0.8
 km

1:50,000
 (when printed at A4)

Data sources:
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority (using as Landgate 2010).
 Service Layer Credits: World Street Map; Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
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LEGEND

- Development Envelope
- Remnant Vegetation 2020 (DPIRD-093)
- Regional Linkages
- Chuditch Habitat**
 - Banksia Woodlands
 - Marri Woodlands
 - Xanthorrhoea shrubland
 - Adenanthos/Plantation
 - Wetlands
- DBCA Chuditch (VU, VU)
- ALA Chuditch

Chuditch Habitat

WESTERN POWER

*NT-NBT330KV DOUBLE CIRCUIT
 NREP ADDENDUM*

Figure 2-E

3.3 Douglas' broad-headed bee (*Hesperocolletes douglasi*)

Douglas' broad-headed bee was described by Charles Michener in 1965 from a single male specimen collected on Rottnest Island in 1938 (Michener 1965). The species was presumed extinct until 2015, after extensive targeted surveys revealed the existence of an extant subpopulation in Pinjar (DSEWPaC 2018b; Arnold et al. 2019). The species is listed as Critically Endangered under the EPBC Act and BC Act. Habitat requirements for this species are largely unknown, although a recent publication by Arnold et al. (2019) indicated that the species may be a generalist forager given specimens have been found to be carrying pollen from multiple plant species from Banksia woodlands. Targeted surveys for the species were undertaken between 2015 and 2017, across 23 sites over 15,200 ha of the Gnaragara State Forest. Several of these sites are in proximity to the Neerabup Terminal (northern end of the DE). However, the species was only observed near Pinjar, approximately 8-10 km northeast of the PDE (Houston 2018; Arnold et al. 2019).

The PDE includes 6.84 ha of Banksia Woodlands habitat, which may be suitable habitat for the Douglas' broad-headed bee. This habitat extends into the Gnaragara State Forest (north of the DE) and is not restricted to the PDE. The nearest known population for the species is in Pinjar (8-10 km north-east). The area immediately north of the PDE has been subject to targeted searches for the species, with no evidence of occurrence. It is unlikely the bee occurs within the PDE, however, the clearing of 6.84 ha of Banksia Woodlands habitat within the PDE is not likely to significantly impact the species.

3.4 A short-tongued bee (*Leioproctus douglasiellus*)

A short-tongued bee, belongs to a group of native Australian bees with characteristically short tongues (Colletidae, see Houston 2018). The species is listed as Critically Endangered under the EPBC Act and Endangered under the BC Act. Its plant association includes *Goodenia filiformis* and *Anthotium junciforme* and is associated with claypans and wetlands of the Swan Coastal Plain (DSEWPaC 2013; Houston 2018). Threats to the species include land clearance and destruction of suitable habitat, landscaping areas of suitable habitat, inappropriate fire regimes and replacement of native vegetation with invasive weeds (DSEWPaC 2013).

The nearest known historical occurrence record for the species is approximately 10 km northeast of the PDE (Figure 1). Neither *G. filiformis* or *A. junciforme* species were recorded during the detailed flora and vegetation survey, nor was any suitable habitat mapped within the PDE (AECOM 2023). It is therefore unlikely that the species occurs in the PDE.

3.5 Priority species of invertebrates

The remaining four conservation significant invertebrate species identified from Table 1 are not listed as threatened under legislation but are maintained on DBCA's Priority species database. Priority species are those that may possibly be threatened that do not meet the criteria for listing as such under the BC Act due to insufficient survey efforts or are otherwise data deficient. It is important to note however, that as specified by the DBCA, "all fauna and flora are protected in Western Australia following the provisions in Part 10 of the BC Act". The protection applies even when a species is not listed as threatened or specially protected, and regardless of land tenure (State managed land (Crown land), private land, or Commonwealth land)." The definition of these Priority listing codes is outlined in Table 3.

The **Woollybush bee (*Hylaeus globuliferus*)** (Priority 3) is a small black native short-tongued bee from the family Colletidae (Houston 2018; DCCEEW 2024a). They are widely distributed throughout south-western Australia, with historical records from various Interim Biogeographic Regionalisation for Australia (IBRA) bioregions, including Avon Wheatbelt, Esperance Plains, Geraldton Sandplains, Jarrah Forest, Mallee, Swan Coastal Plain, Warren and Yalgoo. Territorial males often frequent 'Woollybush' plants (*Adenanthos* spp.), but the species also forage on *Banksia*, *Jacksonia*, and *Grevillea* spp. (DCCEEW 2024a).

AECOM (2023) recorded several species of each of these plant genera throughout the survey area, identifying Banksia Woodland as suitable habitat for the species. There are 10 DBCA historical records for the species that occur within 20 km of the PDE, all from 1957 to 1996. The species was assessed as having a "high" likelihood of occurrence in the post-survey assessment due to the presence of suitable habitat and proximity of historical records. A total of 6.84 ha of Banksia Woodland habitat mapped within the PDE, of which all patches extend from approximately 10 to 1000 ha beyond the PDE boundary. Given the abundance of suitable habitat outside the PDE, including protected areas such as reserves and Whiteman Park, it is unlikely that the habitat within the PDE is critical to the species' survival.

Another **short-tongued native bee (*Leioproctus contrarius*)** (Priority 3) was identified as potentially occurring in the PDE area. This species has a similar range and occurs within the same IBRA bioregions as the Woollybush bee. However, only three DBCA historical records of the bee occur within 20 km of the PDE, dating from 1954 – 1982. One record is at the northern end of the PDE and the other two are approximately 12 km north-east (Figure 1). Information on its preferred habitat is currently limited, however previous studies have associated the species with foraging on *Lechenaultia* and *Goodenia* plant species (Houston 2018; Maynard 2013; DCCEEW 2024b).

Like the Woollybush bee, *Leioproctus contrarius* was assessed as having a “high” likelihood of occurrence, due to suitable habitat (Banksia Woodland) and proximity of records. However, given the extensive Banksia Woodland habitat beyond the PDE boundary and the limited known records for the species within 20 km of the PDE, the Project is not likely to have a significant impact on *Leioproctus contrarius* or potential habitat.

The **Swan Coastal Plain trapdoor spider (*Idiosoma sigillatum*)** (Priority 3) was also identified as potentially occurring within the PDE. The species is found within the IBRA bioregions of Swan Coastal Plain and Jarrah Forest (DCCEEW 2024c). The species’ habitat is substrate specific, occurring in *Casuarina* groves and *Banksia* woodland and heathland. The spider burrows in litter on sandy-gravel soils, creating a distinctive ‘moustache-like’ arrangement of twig-lines (Rix *et al.* 2018; DCCEEW 2024c). The PDE is located at the eastern range limit of the species, which is the sandy foothills of the Darling Escarpment (Rix *et al.* 2018).

A total of 124 DBCA records of the species occur within 20 km of the PDE, with nine recorded in the last 20 years. The nearest records are approximately 1.5 km to the west of the PDE, just south of Gnangara Road, and about the same distance south of Malaga. Many other records occur across the Swan Coastal Plain, but none east of the proposed PDE, due to a lack of suitable habitat resulting from differing geological features (Figure 1). Suitable habitat for this species extends throughout the Swan Coastal Plain, with *Banksia* Woodlands present broadly throughout the local area, including within reserves. The likelihood of *Idiosoma sigillatum* occurring within the PDE is low, as the amount of suitable habitat is minimal compared to the quality and proportion within the surrounding area to the west. The PDE is also located at the eastern extent of the range for this species, contributing to a low likelihood of occurrence, as habitat suitability is greater to the west of the PDE.

Finally, of the significant invertebrate taxa identified from fauna searches (Table 1), the **Graceful sun-moth (*Synemon gratiosa*)** is the least threatened, as a Priority 4 species. The species is one of 45 species of Australian sun-moth, within the family Castiniidae, typified by dull-coloured upper surfaces of forewings and bright orange hind and underwings and small grey markings, with a wingspan of 25-30 mm. The species occurs in Banksia woodland and Woollybush on deep sands of the Swan Coastal Plain and open areas of herb, heath and shrublands on sand and limestone. It breeds on *Lomandra hermaphrodia* and *Lomandra maritima*, which are food plants for its larvae (caterpillars) (see Bishop *et al.* 2010). The species is widespread across southwestern Western Australia with records occurring as far north as Shark Bay (Bishop *et al.* 2010).

AECOM (2023) recorded the two *Lomandra* host plants within the PDE. The nearest confirmed records of the Graceful sun-moth in relation to the PDE occur within 2.3-3.2 km of the DE. The closest is at the northern end near Banksia Grove and followed by the northeastern corner of Whiteman Park (Figure 1). The species is considered likely to occur within the Banksia Woodland habitats within the PDE. However, this habitat is extensive throughout the local area and the host plants are abundant throughout coastal heathland and banksia woodlands habitat types in the Swan Coastal Plain. Therefore, the habitat within the PDE is not likely to be critical to the survival of the species. The species is considered likely to occur within the Banksia Woodland habitats within the PDE. However, this habitat is extensive throughout the local area and the host plants are abundant throughout coastal heathland and banksia woodlands habitat types in the Swan Coastal Plain. Therefore, the habitat within the PDE is not likely to be critical to the survival of the species.

4.0 Summary

Based on the discussions above, it has been determined that none of the four threatened species listed in Table 1 were likely to occur within the PDE. This is summarised below:

- Woylie *Bettongia penicillata ogilbyi* – The PDE contains suitable habitat for the Woylie, however, no direct or indirect evidence was observed during the biological survey. Additionally, known populations near the PDE are within fenced reserves, preventing individuals from accessing the PDE area.
- Chuditch *Dasyurus geoffroii* – The PDE contains habitat types known to support the Chuditch, however, is not likely to support a permanent population. Due to the absence of large, contiguous tracts of intact native vegetation, the lack of suitable den sites within the PDE and its proximity to urban areas. There is only one historical record of an individual approximately 2 km east of the PDE, recorded in 2010. All other records are over 12 km east within the northern Jarrah forest, where large areas of intact habitat are present.
- Douglas' Broad-headed Bee *Hesperocolletes douglasi* – This species may occur in Banksia Woodland habitats, but the only known population is located 8-10 km northeast of the PDE. Targeted searches (2015-2017) near the PDE found no individuals.
- a short-tongued bee *Leioproctus douglasiellus* – No suitable habitat for this species was recorded in the PDE, and the nearest historical record is approximately 10 km northeast. Of the four Priority species in Table 1, one species (the trapdoor spider) was unlikely to occur in the PDE, and three other species were likely to occur. However, none were considered dependent on habitat within the PDE for their survival. This is summarised below:
- Woollybush bee (*Hylaeus globuliferus*) – This species has a high likelihood of occurrence in the PDE due to suitable habitat (Banksia Woodland) and proximity of historical records. However, since Banksia Woodland extends much further outside the PDE, including within reserves, the habitat within the PDE is not likely to be critical to the species.
- a short tongue bee *Leioproctus contrarius* – This species has a similar range to the Woollybush Bee but is known from fewer records (1954-1982). It is likely to occur within the Banksia Woodland habitat in the PDE, but this habitat is not likely to be critical to the species.
- The Swan Coastal Plain trapdoor spider *Idiosoma sigillatum* – This spider has over 100 historical records within 20 km of the PDE, all located west, with the nearest records approximately 1.5 km west. The species' habitat is substrate-specific, and the PDE is at the eastern extent of its range. It is unlikely the species occurs within the PDE due to a lack of suitable habitat and the abundance of records in suitable habitat to the west.
- Graceful sun-moth *Synemon gratiosa* – This species is likely to occur within the PDE due to the presence of suitable habitat (Banksia Woodland) and proximity of historical records. However, since Banksia Woodland extends much further outside the PDE, including within reserves, the habitat within the PDE is not likely to be critical to the species.

Table 3 Conservation codes for WA fauna as listed by DBCA and endorsed by the Minister for Environment

| Code | Category |
|-----------|--|
| P1 | <p>Priority One – Poorly Known Species</p> <p>Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.</p> |
| P2 | <p>Priority Two – Poorly Known Species</p> <p>Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.</p> |
| P3 | <p>Priority Three – Poorly Known Species</p> <p>Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.</p> |
| P4 | <p>Priority Four – Rare, Near Threatened and other species in need of monitoring</p> <p>Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.</p> <p>Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.</p> <p>Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.</p> |

Yours sincerely,



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