

Supporting Document – Native Vegetation Clearing Permit Application

Road Works at Intersection of Hunter Road and
Brand Highway

February 2023



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Supporting Document – Native Vegetation Clearing Permit Application Road Works at Intersection of Hunter Road and Brand Highway

ProTen Western Australia Pty Ltd

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WSP acknowledges that every project we work on takes place on First Peoples lands.

We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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1 Introduction

1.1 Project Background and Scope

ProTen Western Australia Pty Ltd (ProTen) is proposing to undertake road works to improve the intersection of Hunter Road and Brand Highway in Regans Ford, approximately 105 km north of Perth in the Shire of Dandaragan, Western Australia (WA) (the Project; Figure 1). The Project Area (area within which the proposed activities will occur) is shown on Figure 2. The Project aims to provide better and safer traffic flow for road users. ProTen was engaged by Main Roads Western Australia (MRWA) to plan and undertake the following proposed road works at the intersection:

- Widening of Hunter Road and Brand Highway intersection to provide safer access
- Improve turning and intersection lanes (including a dedicated turning lane)
- Improve drainage.

ProTen is seeking approval to clear up to 0.48 hectares (ha) of native vegetation to support the Project. The proposed native vegetation clearing areas (NVCAs) (areas that are proposed to be cleared of native vegetation) within the Project Area are shown on Figure 2. The native vegetation proposed to be cleared comprises of trees, shrubs, and grasses. Photos of the vegetation proposed to be cleared are provided in Appendix A

ProTen aims to minimise the amount of clearing of native vegetation as far as reasonably practicable to undertake the construction Works safely as required.

The Project Area and proposed NVCAs for the proposed works are located within the following land parcels as shown on Figure 2:

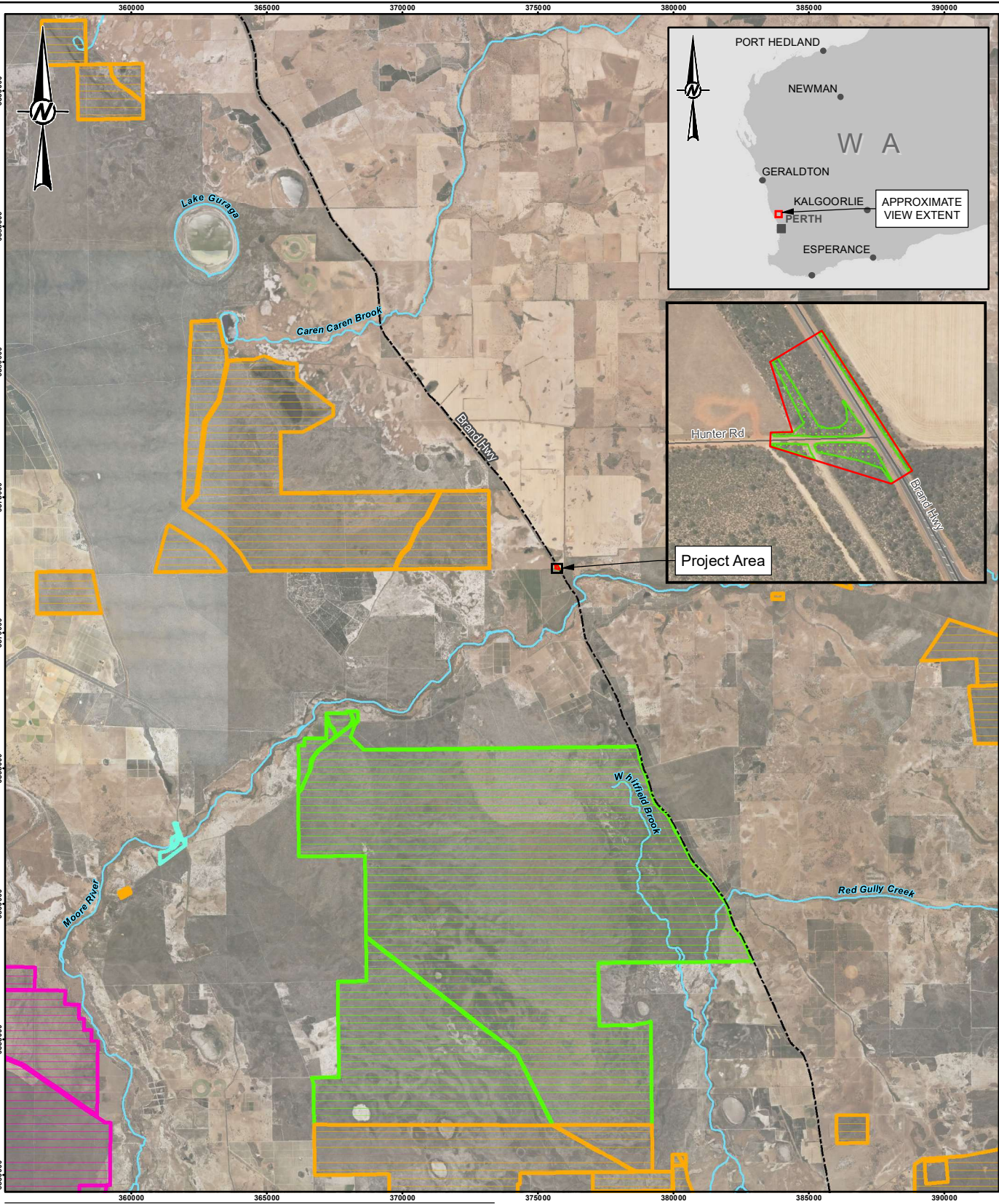
- Road reserve (Land ID Number 3145453)
- Road reserve (Land ID Number 3145467)
- Lot 500 on Plan P062913 (Land ID 3824246).

1.2 Purpose

The purpose of this Native Vegetation Clearing Permit (NVCP) application is to seek approval to clear up to 0.48 ha of native vegetation within the proposed NVCAs (as shown on Figure 2), to allow ProTen to undertake road works at the intersection of the Hunter Road and Brand Highway.

This NVCP has been prepared using desktop environmental information obtained from publicly available online sources, the Department of Biodiversity, Conservation and Attractions (DBCA) requested data for communities, flora, and fauna received on 25 and 31 May 2022, and site specific information provided by ProTen. No site visit was conducted by WSP, as part of this NVCP application.

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- LEGEND**
- Inland Waters
 - Major Roads
 - Project Area
 - Native Vegetation Clearing Areas
 - DBCA Legislated Lands and Waters
 - National Park
 - Nature Reserve
 - Section 5(1)(g) Reserve
 - State Forest

0 5 10
1:202,966 Kilometers

NOTE:
1. COORDINATE SYSTEM: GDA 1994 MGA ZONE 50

REFERENCES:
1. AERIAL IMAGE SOURCED FROM LANDGATE (2022)
2. WESTERN AUSTRALIAN LAND INFORMATION AUTHORITY (LANDGATE)

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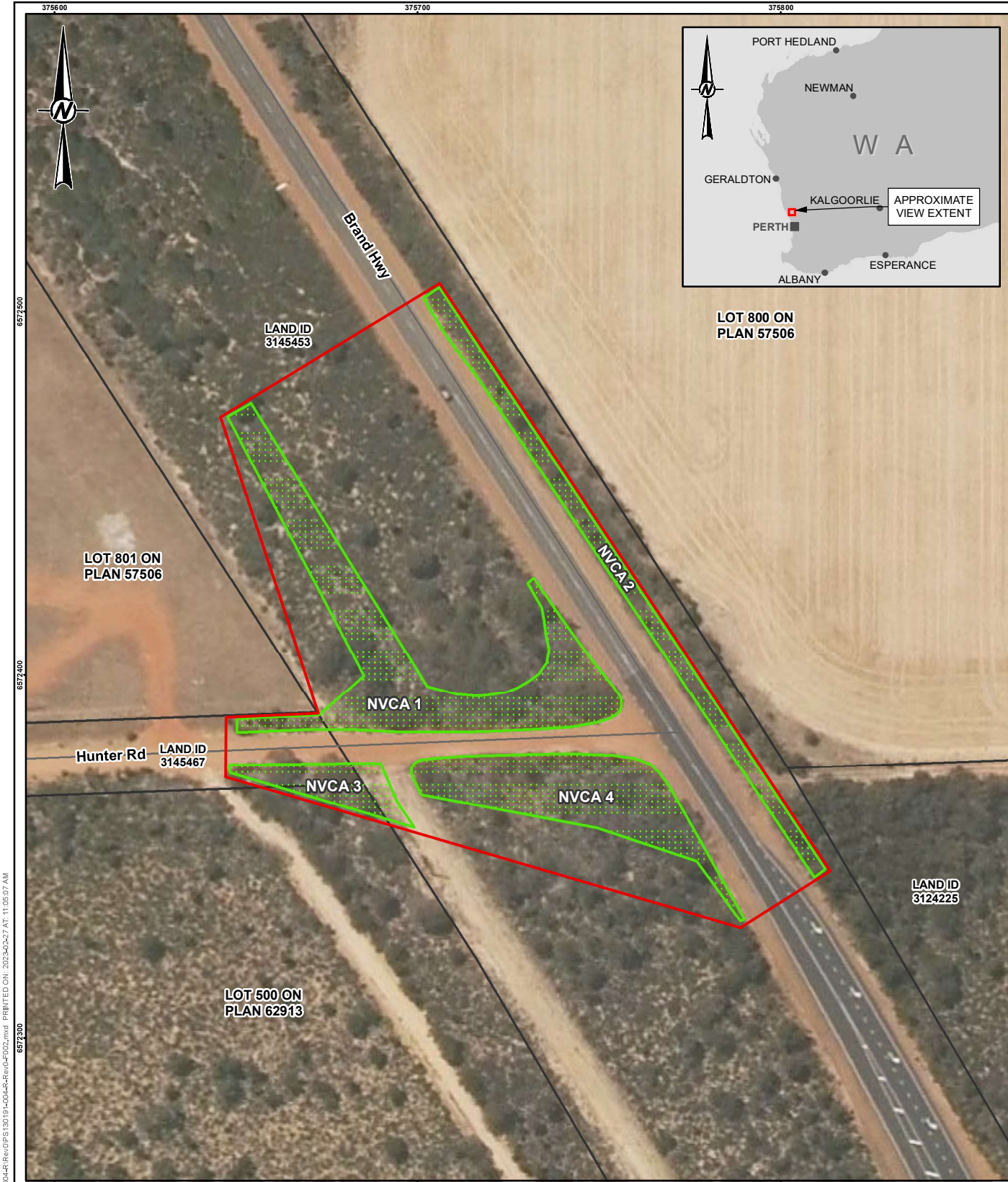
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PROJECT
NATIVE VEGETATION CLEARING PERMIT APPLICATION

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REGIONAL PROJECT LOCATION

PROJECT NO. PS130191 CONTROL 004 R REV. 0 FIGURE 001

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LEGEND

- Native Vegetation Clearing Areas
- Project Area
- Roads
- Cadastre

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1:1,500 METRES

NOTE:

1. COORDINATE SYSTEM: GDA 1994 MGA ZONE 50

REFERENCES:

1. AERIAL IMAGE SOURCED FROM LANDGATE (2022)

2. WESTERN AUSTRALIAN LAND INFORMATION AUTHORITY (LANDGATE)

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PROJECT

NATIVE VEGETATION CLEARING PERMIT APPLICATION

TITLE

NATIVE VEGETATION CLEARING AREAS AND PROJECT AREA

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2 Project Area

The Project Area is approximately 1.56 ha and is shown in Red on Figure 2. The Project Area is the area within which the proposed Project activities will occur.

Shapefiles for the Project Area is provided in Appendix B.

2.1 Land Tenure and Access

The proposed native vegetation clearing is proposed to be within the NVCAs which are located on the following road reserves and Crown land, managed by the Shire of Dandaragan (Figure 2):

- Road reserve, Land ID Number 3145453
- Road reserve, Land ID Number 3145467
- Lot on Plan P062913 500 (Land ID Number 3824246).

Stakeholder consultation is summarised in Section 5.

3 Proposed Activities

3.1 Description of Proposed Activities

ProTen is required to undertake road works to improve the intersection of Hunter Road and Brand Highway in Regans Ford, approximately 105 km north of Perth in the Shire of Dandaragan, WA (Figure 1).

The Project aims to provide better and safer traffic flow for road users. ProTen was engaged by Main Roads Western Australia (MRWA) to plan and undertake the following proposed road works at the intersection:

- Widening of Hunter Road and Brand Highway intersection to provide safer access
- Improve turning and intersection lanes (including a dedicated turning lane)
- Improve drainage.

ProTen is seeking approval to clear up to 0.48 ha of native vegetation within the proposed NVCAs, shown on Figure 2 to support the Project. The native vegetation targeted for removal comprises of trees, shrubs, and grasses. Photos of the native vegetation proposed to be cleared are provided in Appendix A.

3.2 Proposed Native Vegetation Clearing Areas

The NVCAs are the areas within which the proposed native vegetation clearing is proposed to occur (100% of the native vegetation within the NVCAs are proposed to be cleared). ProTen proposes to clear up to 0.48 ha of native vegetation within the NVCAs as shown in green on Figure 2. The following NVCAs make up the proposed 0.48 ha of proposed native vegetation clearing:

- NVCA 1 (0.22 ha)
- NVCA 2 (0.13 ha)
- NVCA 3 (0.04 ha)
- NVCA 4 (0.08 ha).

Shapefiles for the NVCAs are provided in Appendix B.

3.3 Method of Native Vegetation Clearing

The native vegetation will be removed from the base including all shrubs and grasses located within the NVCAs.

All vegetation within the NVCAs (including the new and extended drain) is proposed to be cleared of vegetation. Vegetation clearing will be conducted using a mechanical method, utilising a zero swing excavator, loader and registered road trucks to remove the vegetation from site.

Works within the road formation will have roots grubbed to a minimum 300 mm deep so subgrades can be prepared to accept pavement layers. Clearing within the new northern drain shall be minimised to the drain formation. Roots within the drain system will remain to aid soil stability.

3.4 Timeline

Once an NVCP is obtained from the Department of Water and Environmental Regulation (DWER), the native vegetation clearing is scheduled to commence on 15 May 2023 and is expected to take up to four days to complete.

4 Relevant Environmental Characteristics

The following sections contain information about the environmental characteristics of the NVCAs that are relevant to this NVCP application. Desktop environmental information outlined in this section has been obtained from publicly available online sources, the DBCA requested data for communities, flora, and fauna received on 25 and 31 May 2022, and site specific information provided by ProTen. No site visit was conducted by WSP, as part of this NVCP application.

4.1 Current Land Use

The Project Area is within the road reserve and Crown land under Shire of Dandaragan and located approximately 400 m from the boundary of Moore River Pools (PCE-06), Heritage Place (18083), Hunting Place, Plant Resources, Water Sources (Department of Planning, Lands and Heritage, 2001). The Project Area is surrounded by land used primarily for dryland agriculture and plantations. The Project Area is located along the roadside within the remnant vegetation (DPIRD-005) with Poly ID 192889, 193362 and 222599.

4.2 Biogeographic Regions

The Interim Biogeographic Regionalisation for Australia (IBRA) developed in 1993-94 is a tool for identifying land for conservation and IBRA classifies Western Australia into 26 geographically distinct landscapes (DWER 2019).

IBRA classifies the Australian continent into regions and bioregions on the basis of similar geology, landform, vegetation, fauna, and climate characteristics. The Project Area is located within the Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region (Figure 1).

This region is further divided into the following two IBRA subregions (Australian Government 2022):

- Dandaragan Plateau (SWA01)
- Swan Coastal Plain (SWA02).

The Project Area is located entirely within the Swan Coastal Plain IBRA subregion; a low lying plain mainly covered with woodlands with Banksia or Tuart dominated species on sandy soils, *Casuarina obesa* on outwash plains, and paperbark in swampy areas.

4.3 Land Systems

The Project Area is located entirely within a single soil-landscape system, the Moore River System (212Mo). This soil-landscape system consists of (Australian Government 2022a):

- Alluvial flats; Swan Coastal Plain west of Gingin; wet soil, semi-wet soil, pale and yellow deep sands; Woodlands and heaths.
-

4.4 Surface Geology

The Project Area is located entirely within a single surface geological unit, Guilford Formation 45360 (Qa). This unit is described as alluvial sand and clay with shallow-marine and estuarine lenses and local basal conglomerate (Australian Government 2022a).

4.5 Soils

The Project Area is located within the following Soil-landscape Map Units (DPIRD-064):

- 212Mo – Alluvial flats; Swan Coastal Plain west of Gingin; wet soil, semi-wet soil, pale and yellow deep sands; Woodlands and heaths (DPIRD-064). Soil-landscape Map Unit 212Mo covers an area up to 10,720 ha
- Soil landscaping zone – 212.

The Project Area is located within the following Soil Landscape Mapping Zones (DPIRD-027):

- 212Mo_2 (Moore River 2 Subsystem) – Relict floodplain. Yellow deep sand. The Moore River 2 Subsystem covers an area up to 445 ha.

4.6 Hydrology

The Project Area does not fall within or intersect any watercourses. The nearest major perennial watercourse is the Moore River, located approximately 650 m to the southeast of the Project Area, as shown on Figure 3. The Moore River is a Proclaimed Surface Water Area under the *Rights in Water and Irrigation Act 1914* (RIWI Act).

As per the desktop survey (DWER-033) there are two priority 1 (P1) and two priority 2 (P2) public drinking water sources approximately 31 km and 27 km west direction from Project Area respectively. The nearest wetland (Nationally Important Wetlands) from the Project Area include (DBCA-045):

- Guraga Lake approximately 17 km northwest direction of the Project Area (not a Ramsar wetland)
- Karakin Lakes approximately 22 km southwest direction of the Project Area (not a Ramsar wetland).

4.7 Environmentally Sensitive Areas

Environmentally Sensitive Areas (ESAs) are areas protected under the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations) and are selected for their environmental values at State or Commonwealth levels. ESAs are classes or areas of native vegetation where the exemptions for clearing vegetation under the Clearing Regulations do not apply (Australian Government 2022). They include:

- Defined wetlands and riparian vegetation within 50 m
- Areas covered by Threatened Ecological Communities
- Area of vegetation within 50 m of Threatened flora
- Bush Forever sites
- Declared World Heritage property sites.

No ESAs are located within or in close proximity to the Project Area, as shown on Figure 4. The nearest ESAs include a conservation category wetland associated with the Moore River and a protected Nature Reserve (Namming Nature Reserve) approximately 2.5 km southwest and 2.5 km west of the Project Area respectively.

4.8 Aboriginal Heritage

As part of a previous NVCP application submitted to DWER by ProTen in Q3 2022 (for the construction of high voltage powerlines), WSP engaged Archae-aus to undertake a desktop Aboriginal Heritage desktop assessment. An Aboriginal archaeological and ethnographic survey with Yued Traditional Owners was undertaken to support that NVCP application. The due diligence report by Archae-aus (Archae-aus 2022) was provided to DWER as part of that NVCP Application. The due diligence report has also been used to support this desktop assessment and NVCP application for the Project which is provided in Appendix E (for reference purpose only, noting that the study areas are not the same).

Section 17 of the *Aboriginal Heritage Act 1972* (AH Act) states that it is an offence to alter an Aboriginal site in any way including collecting artefacts, conceal a site or artefact, or excavate, destroy or damage in any way an Aboriginal site or artefact without the authorisation of the Registrar of Aboriginal Sites under section 16 or the Minister of Aboriginal Affairs under section 18 of the AH Act.

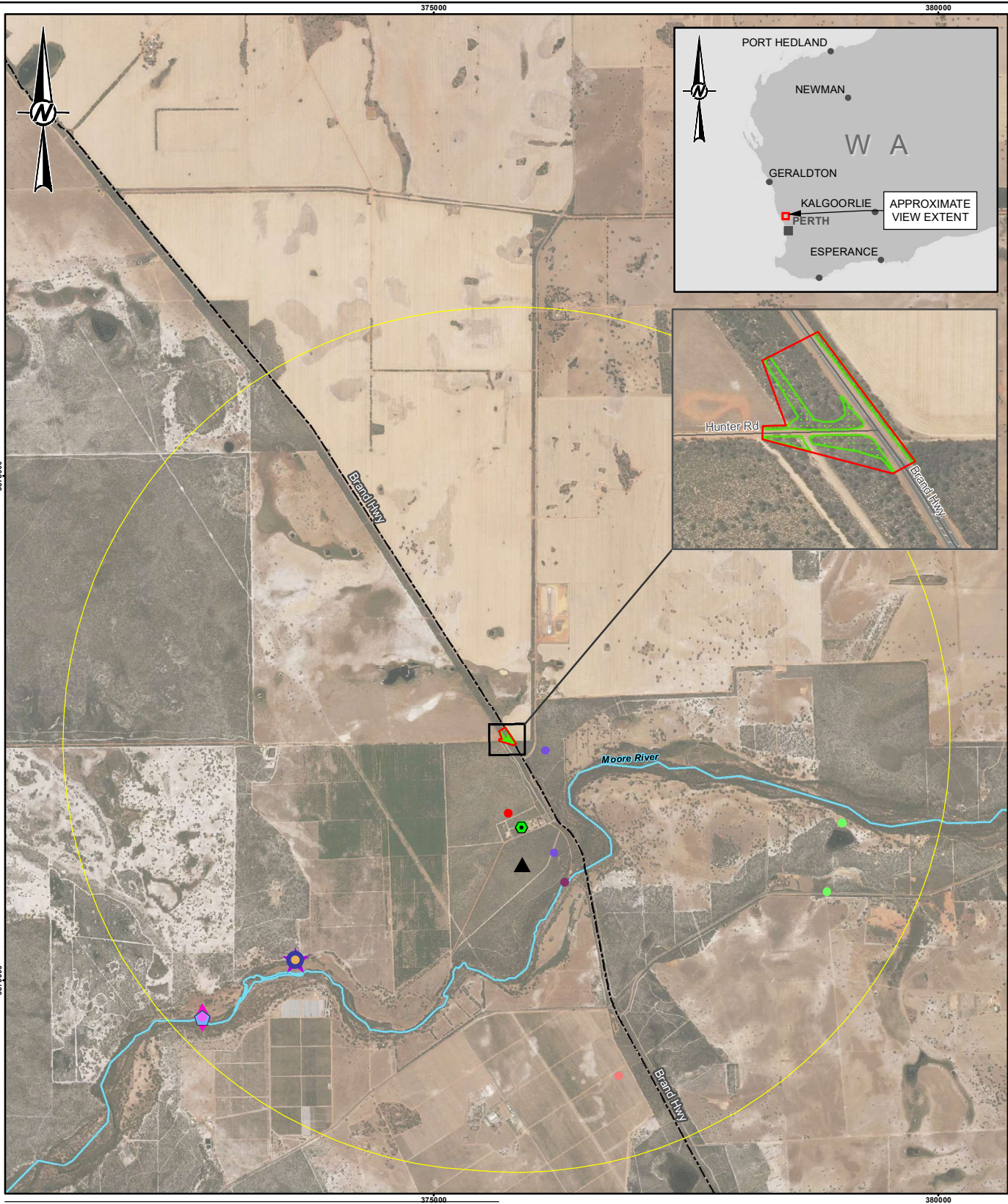
The Aboriginal Heritage Inquiry System (AHIS) is a tool through which the public can access information about the heritage places and their legal status and is managed by Department of Planning, Lands and Heritage. The desktop survey found that the NVCAs are located within a Registered Aboriginal Site (20008 – Gingin Brook Waggy Site) in the region of Metro/Wheatbelt (DPLH 2022).

As per the assessment report by Archae-aus Pty Ltd (Archae-aus 2022), this Registered Aboriginal Site is a registered historical, mythological, camp, hunting place, plant resource, water source site. It has a buffered boundary, and the actual site follows the route of the waterways including the Moore River.

The Project Area is located in Noongar country where Noongar people share linguistic and cultural traditions. The traditional owners with ancestral ties to the Project Area and its surrounding area is identified as Yued today. Due to its ancestral, spiritual and historical connections, the identity of Yued remains strong within the Moore River and its surrounding areas.

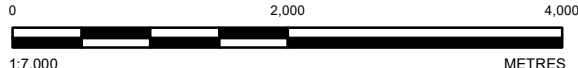
ProTen is currently consulting with the Department of Planning, Lands and Heritage to seek clarification as to whether a Section 18 application under the AH Act will be required for the Project. If required, further information can be provided to DWER upon request (once received by DPLH).

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LEGEND

- | | | |
|---------------------------------------|---|---|
| Inland Waters | <i>Persoonia rudis</i> | <i>Isotropis cuneifolia</i> subsp. <i>glabra</i> |
| Major Roads | <i>Babingtonia urbana</i> | <i>Lepyrodia curvescens</i> |
| Project Area | <i>Darwinia acerosa</i> | <i>Petrophile biternata</i> |
| Native Vegetation | <i>Darwinia carnea</i> | <i>Rumex drummondii</i> |
| Clearing Areas | <i>Eucalyptus macrocarpa</i> subsp. <i>elachantha</i> | <i>Stylidium</i> sp. <i>Moora</i> (J.A. Wege 713) |
| 5km Buffer | <i>Hensmania stoniella</i> | |
| Conservation Significant Flora | | |
| <i>Dampiera tephrea</i> | | |
| <i>Haemodorum loratum</i> | | |



NOTE:

1. COORDINATE SYSTEM: GDA 1994 MGA ZONE 50

REFERENCES:

1. AERIAL IMAGE SOURCED FROM LANDGATE (2022)
2. WESTERN AUSTRALIAN LAND INFORMATION AUTHORITY (LANDGATE)

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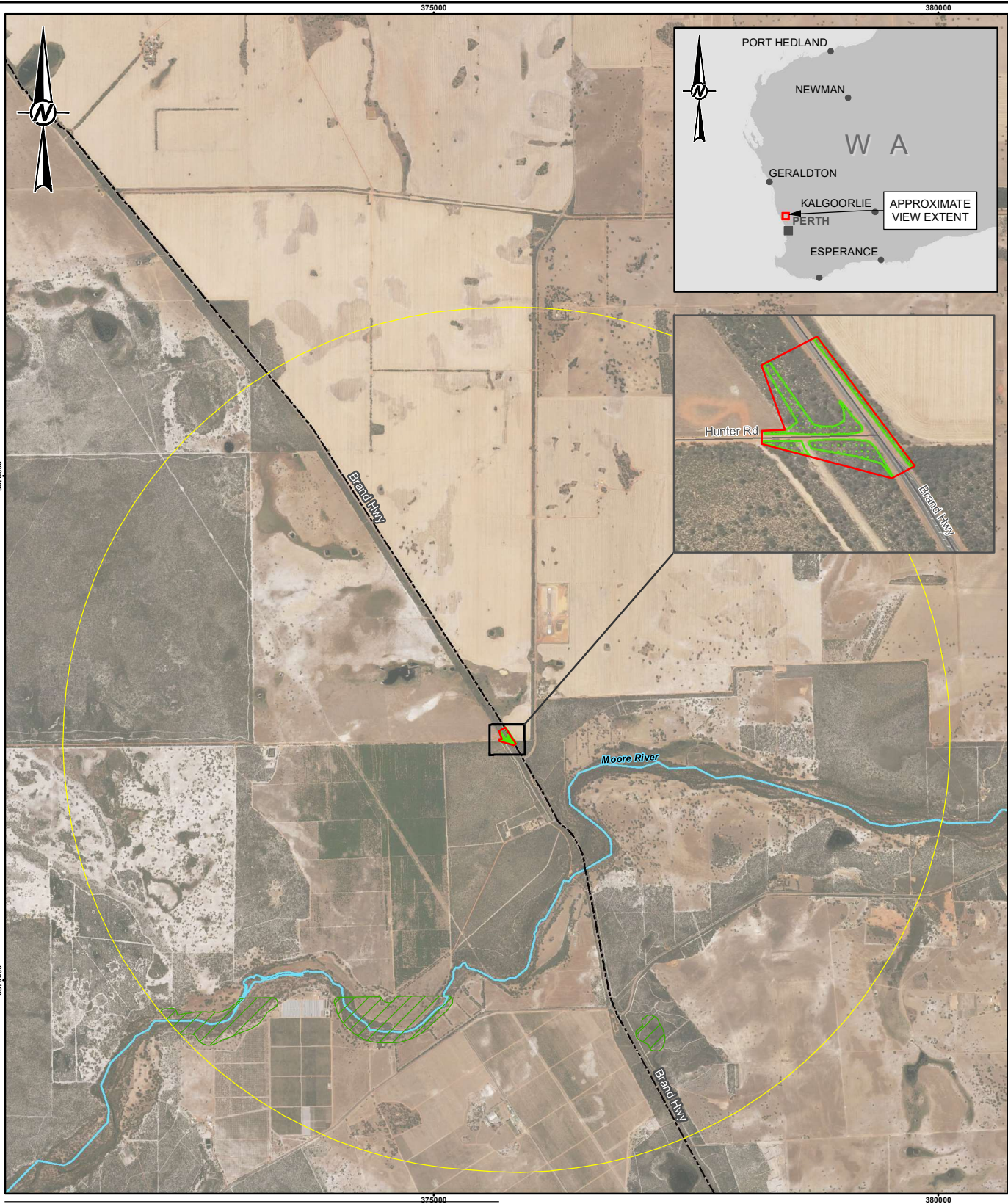
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NATIVE VEGETATION CLEARING PERMIT APPLICATION

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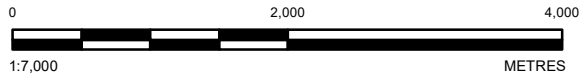
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LEGEND

- Inland Waters
- Major Roads
- Project Area
- Native Vegetation Clearing Areas
- 5km Buffer
- Environmentally Sensitive Areas



NOTE:

1. COORDINATE SYSTEM: GDA 1994 MGA ZONE 50

REFERENCES:

- AERIAL IMAGE SOURCED FROM LANDGATE (2022)
- WESTERN AUSTRALIAN LAND INFORMATION AUTHORITY (LANDGATE)

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CONSULTANT



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REVIEWED	SP
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PROJECT
NATIVE VEGETATION CLEARING PERMIT APPLICATION

TITLE

ENVIRONMENTALLY SENSITIVE AREAS

PROJECT NO.
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4.9 Flora and Vegetation

4.9.1 Vegetation Complex

The Project Area is located within Beard Vegetation Association 1030 – low open forest and low woodland and sedgelands (Shepherd et al. 2001, Hopkins *et al.* 2001) comprising of *Banksia* spp., Peppermint, Cypress Pine, Casuarina, York Gum, *Acacia* spp., *Agonia Flexuosa*, *Callitris* spp., *Allocasuarina* spp., *Eucalyptus Loxophleba* (DPIRD-006).

4.9.2 Pre-European Vegetation Associations

As per the Environmental Protection Authority (EPA) broad principles for the conservation and protection of native vegetation and flora, the biodiversity should be maintained at a level of at least 30% of the original extent of the ecological community in each region. This level is a threshold level and species loss appear to increase below the threshold level. As per the EPA broad principles, a level of 10% of the original extent represents as endangered (Maia Environmental Consultancy, 2020).

The purposed native vegetation clearing area falls within the pre-European vegetation with the current extent of 86,013.90 hectares and remaining percentage of pre-European extent of 63.81% (DWER 2023b).

Table 1 lists the percentage remaining of the only vegetation complex identified within the Project Area and indicates whether the Commonwealth 30% retention target is met. The vegetation complex present within the Project Area meets the 30% target.

Approximately 0.48 ha native vegetation is proposed to be cleared within the Project Area (refer to NVCA's 1-4, as shown on Figure 2).

Table 1 Pre-European Vegetation

Vegetation Name	Pre-European Extent (ha)	Current Extent (ha)	Pre-European % Remaining	Is the 30% Target Met?
Bassendean	134,788.56	86,013.90	63.81%	Yes

4.9.3 Threatened and Priority Ecological Communities

Threatened Ecological Communities (TECs) are categorised at both Commonwealth (EPBC Act; DCCEEW 2022a) and State (WA) (DBCA 2022a) level, whilst Priority Ecological Communities (PECs) are categorised at State level (DBCA 2022b).

- In the absence of DBCA's NatureMap Database, WSP requested desktop data from DBCA in Q3 2022 for a separate NVCP application which is currently under assessment by DWER (for the construction of high voltage powerlines). As the Project Area is near the previous search area for the preceding NVCP application, the same data has been used to support this NVCP application
- The NVCA's are located within the Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region (Figure 5)
- The Banksia woodlands of the Swan Coastal Plain IBRA Region was listed as a TEC (endangered) under the EPBC Act on 16 September 2016. The mapping for the Banksia woodlands ecological community is based on the Commonwealth's 'likely to occur' areas and represents the broad-scale vegetation map units most likely to contain the described ecological community.

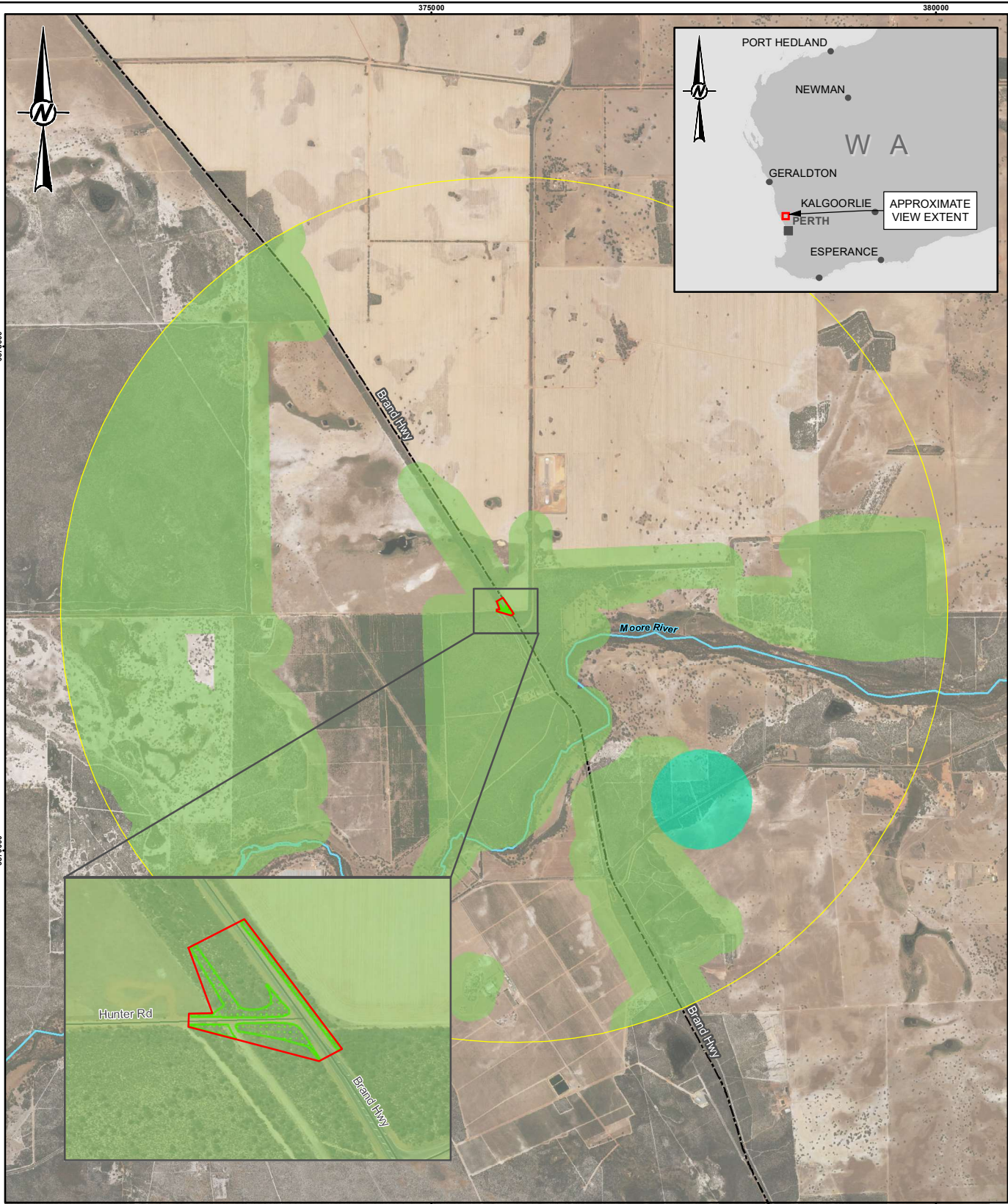
The Banksia Woodlands of the Swan Coastal Plain TEC is a woodland associated with the Swan Coastal Plain (and some adjacent areas) of southwest WA. It typically has a prominent tree layer of Banksia sometimes with scattered eucalypts and other tree species present within or above the Banksia canopy. The understorey is species rich and has many wildflowers, including sclerophyllous shrubs, sedges, and herbs (DEE 2016a).

The Banksia Woodlands of the Swan Coastal Plain TEC can be identified by the following general features (DEE 2016a):

- It typically occurs on well drained, low nutrient soils in sands of dune landforms, in particular deep Bassendean and Spearwood sands, or occasionally on Quindalup sands. It is also common on sandy colluvium and aeolian (wind-blown) sands of the Ridge Hill Shelf, Whicher Scarp and Dandaragan Plateau
- Banksia Woodlands vary in their structure (height, cover, density) and species composition across the region where they occur. These variations can occur over small distances, but the woodlands are united by having a generally dominant Banksia component, which includes at least one of four key species – *Banksia attenuata* (candlestick banksia), *B. menziesii* (firewood banksia), *B. prionotes* (acorn banksia) and/or *B. ilicifolia* (holly-leaved banksia).

No PECs are located within or in close proximity to the Project Area, as shown on Figure 5.

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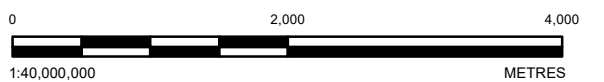


LEGEND

- 5km Buffer
- Inland Waters
- Project Area
- Native Vegetation Clearing Areas

Threatened and Priority Ecological Communities

- Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region
- Swan Coastal Plain *Banksia attenuata* - *Banksia menziesii* woodlands



NOTE:

- COORDINATE SYSTEM: GDA 1994 MGA ZONE 50

REFERENCES:

- AERIAL IMAGE SOURCED FROM LANDGATE (2022)
- WESTERN AUSTRALIAN LAND INFORMATION AUTHORITY (LANDGATE)

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PROJECT
NATIVE VEGETATION CLEARING PERMIT APPLICATION

TITLE

THREATENED AND PRIORITY ECOLOGICAL COMMUNITY

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FIGURE
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4.9.4 Conservation Significant Flora

For the purposes of this NVCP application, conservation significant flora species are those that are listed by the DBCA, as Threatened (T) or Priority (P) flora. Flora species are classified as Threatened Flora or listed as Priority Flora where populations are geographically restricted or threatened by local processes.

Threatened Flora species are listed by DBCA and are protected under the *Biodiversity Conservation Act 2016* (BC Act), whereby making it an offence to remove or damage rare flora without Ministerial approval.

Some Threatened Flora species have additional legislative protection by being listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

EPBC Act Listed Species

A Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2022b) online database search of the Protected Matters Search Tool (PMST) was conducted, and Commonwealth Species Profile and Threats Database lists were reviewed to identify threatened flora with Commonwealth protection under the *Environmental Protection Biodiversity Conservation Act 1999* (EPBC Act) (DCCEEW 2023). The PMST report is provided in Appendix C.

The PMST desktop search identified no flora species that are known to occur within a 1 km radius of the Project Area. The PMST desktop search identified the following flora species that are likely to occur within a 1 km radius of the Project Area:

- Slender Andersonia (*Andersonia gracilis*) – Endangered
- Dwarf Green Kangaroo Paw (*Anigozanthos viridis* subsp. *Terraspectans*) – Vulnerable
- Glossy-leafed Hammer Orchid (*Drakaea elastica*) – Endangered.

BC Act Listed Species

In the absence of DBCA's NatureMap Database, WSP requested desktop conservation significant flora data from DBCA in Q3 2022 for a separate NVCP application which is currently under assessment by DWER (for the construction of high voltage powerlines). As the Project Area is near the previous search area for the preceding NVCP application, the same data has been used to support this NVCP application.

The desktop data results showed eleven Priority and two Threatened flora species records within a 5 km search radius of the Project Area, including (Figure 3):

- *Darwinia acerosa* – T
- *Darwinia carnea* – T
- *Dampiera tephrea* – P2
- *Haemodorum loratum* – P3
- *Persoonia rudis* – P3
- *Babingtonia urbana* – P3
- *Eucalyptus macrocarpa* subsp. *Elachantha* – P4
- *Hensmania stoniella* – P3
- *Isotropis cuneifolia* subsp. *Glabra* – P3
- *Lepyrodia curvescens* – P2
- *Petrophile bitermate* – P3
- *Rumex drummondii* – P4
- *Stylidium* sp. *Moora* (J.A. Wege 713) – P2.

No conservation significant flora species were recorded to occur within the Project Area, as shown on Figure 3. The nearest record was *Haemodorum loratum* approximately 350 m southeast of the Project Area.

4.9.5 Introduced Flora Species

The Department of Primary Industries and Regional Development's (DPIRD) Western Australian Organism List (WAOL) details organisms listed as Declared Pests under the *Biosecurity and Agriculture Management Act 2007* (BAM Act) (DPIRD 2022b). Under the BAM Act, Declared Pests are listed as one of three categories:

- C1 (exclusion), that applies to pests not established in WA; control measures are to be taken to prevent their entry and establishment
- C2 (eradication), that applies to pests that are present in WA but in low numbers or in limited areas where eradication is still a possibility
- C3 (management), that applies to established pests where it is not feasible or desirable to manage them in order to limit their damage.

Some of the more invasive introduced flora species are also included in several other weed lists maintained by DCCEEW and Weeds Australia (2023), including Weeds of National Significance list, Candidate Weeds for Biological Control, species permitted entry into Australia, National Priority List of Exotic Environmental Pests, National Environmental Alert List, Agricultural Sleeper Weeds List, Species Targeted for Eradication, and State and Territory Noxious Weed Lists.

Introduced flora species (weeds) are commonly recorded, particularly in disturbed areas such as agricultural lands, and those surrounding the proposed Project area. Plants are regarded as introduced if they are listed as 'alien' on DBCA's Florabase (DBCA 2022c).

4.9.6 Conservation Significant Fauna

For the purposes of this NVCP application, conservation significant fauna species are those that are listed by DBCA, as Threatened (T) or Priority (P) fauna. Fauna species are classified as Threatened or Priority fauna where populations are geographically restricted or threatened by local processes.

Threatened fauna species are listed by DBCA and are protected under the BC Act, whereby making it an offence to take or disturb Threatened and Priority fauna without Ministerial approval.

Some Threatened fauna species have additional legislative protection by being listed under the EPBC Act.

EPBC Act Listed Species

A Commonwealth DCCEEW (2022b) online database search of the PMST (PMST Report provided in Appendix C) was conducted and Commonwealth Species Profile and Threats Database (DCCEEW 2022c) lists were reviewed to identify threatened fauna with Commonwealth protection. Listed marine species have been excluded from this desktop assessment.

The PMST desktop search identified the following fauna species or species habitat that are known to occur within a 1 km radius of the Project Area:

- Carnaby's Black Cockatoo (*Zanda latirostris* listed as *Calyptorhynchus latirostris*) – Endangered
- Chuditch (*Dasyurus geoffroii*) – Vulnerable.

The PMST desktop search of the Project Area identified the following species or species habitat that are likely to occur within a 1 km radius of the Project Area:

- Malleefowl (*Leipoa ocellata*) – Vulnerable
- Australian Painted Snipe (*Rostratula australis*) – Endangered.

BC Act Listed Species

In the absence of DBCA's NatureMap Database, WSP requested desktop conservation significant fauna data from DBCA in Q3 2022 for a separate NVCP application which is currently under assessment by DWER (for the construction of high voltage powerlines). As the proposed NVCAs are near the previous search area for the preceding NVCP application, the same data has been used for this NVCP application. To determine the fauna species protected under the BC Act, the desktop data resulted in the following five conservation significant fauna species records within a 5 km radius of the Project Area (Figure 6):

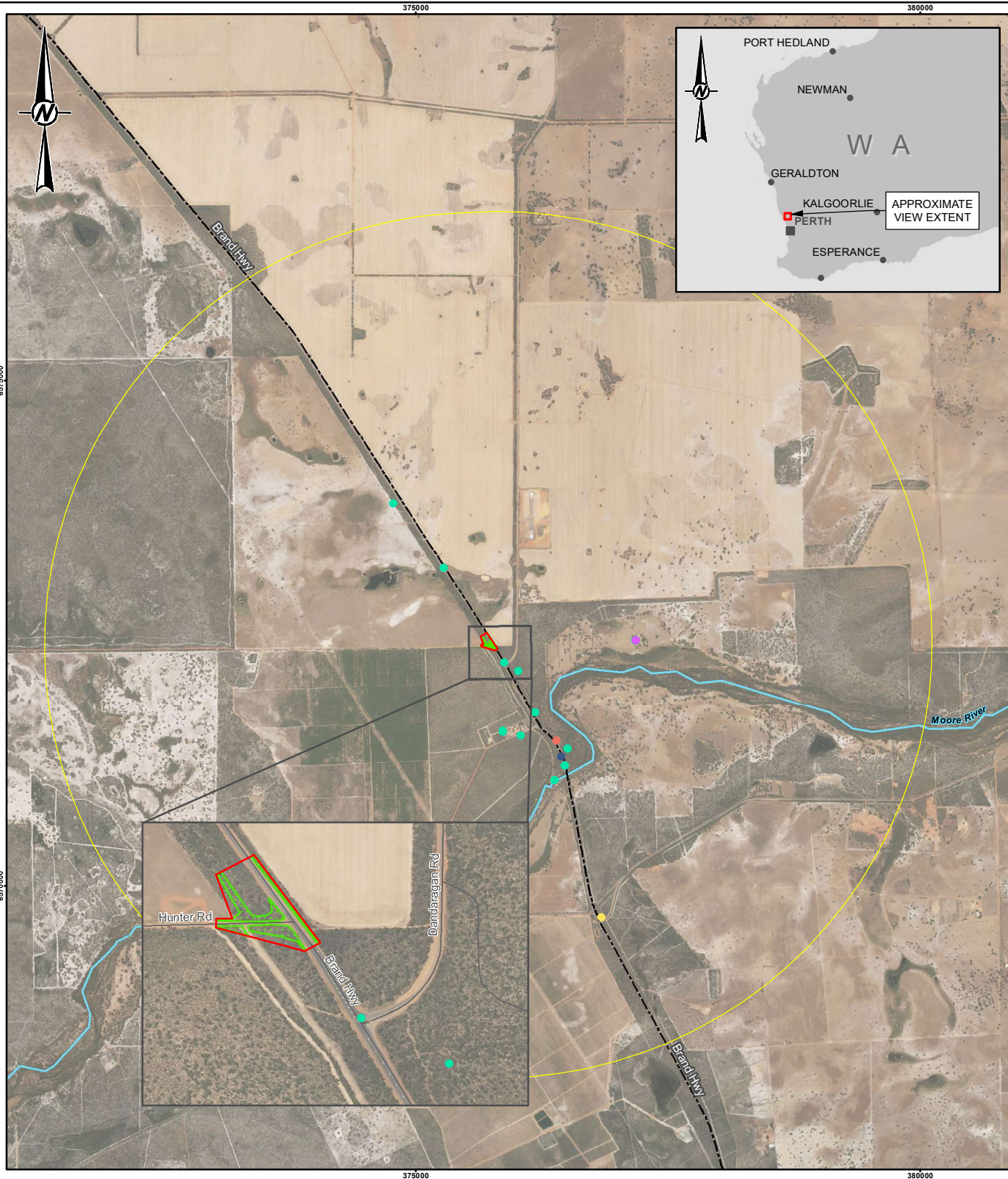
- *Calyptorhynchus latirostris* (Carnaby's cockatoo) – Endangered
- *Calyptorhynchus sp.* (whitetailed black cockatoo) – Endangered
- *Dasyurus geoffroii* (chuditch, western quoll) – Vulnerable
- *Notamacropus irma* (western brush wallaby) – P4
- *Westralunio carteri* (Carter's freshwater mussel) – Vulnerable.

No conservation significant fauna species were recorded to occur within the Project Area, as shown on Figure 6. The nearest record is the Carnaby's cockatoo, approximately 150 m southeast of the NVCAs. The NVCAs is within a 6 km buffer area of Carnaby's Cockatoo Confirmed Breeding Areas and Roosting areas within the Swan Coastal Plan and Jarrah Forest IBRA Regions (Australian Government 2022) and approximately 1 km away from the confirmed roosting site (DBCA-050).

Based on the site photos and information provided by ProTen, it is unlikely that the vegetation proposed for clearing would meet the criteria for potential Black Cockatoo breeding habitat trees (diameter at breast height greater than or equal to 50 cm) or for night roosting. The site photos (provide in Appendix A) indicate that the vegetation proposed to be cleared is less than 4 m in height, and less than 50 cm diameter at breast height (DBH).

As shown in photos 1, 4, and 8 (Appendix A) several individual trees that are proposed to be cleared are in degraded to completely degraded condition.

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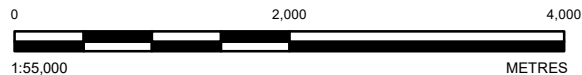


LEGEND

- Inland Waters
- Major Roads
- 5km Buffer
- Project Area
- Native Vegetation Clearing Areas

Conservation Significant Fauna

- Calyptorhynchus latirostris* (Carnaby's cockatoo)
- Calyptorhynchus* sp. (white-tailed black cockatoo)
- Dasyurus geoffroyi* (chuditch, western quoll)
- Notamacropus irma* (western brush wallaby)
- Westralunio carteri* (Carter's freshwater mussel)



NOTE:

1. COORDINATE SYSTEM: GDA 1994 MGA ZONE 50

REFERENCES:

- AERIAL IMAGE SOURCED FROM LANDGATE (2022)
- WESTERN AUSTRALIAN LAND INFORMATION AUTHORITY (LANDGATE)

CLIENT

PROTEN WESTERN AUSTRALIA PTY LTD

CONSULTANT



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PROJECT

NATIVE VEGETATION CLEARING PERMIT APPLICATION

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5 Stakeholder Consultation

Due to minor road upgrades, no formal stakeholder consultation pertaining to the proposed native vegetation clearing activities with the NVCAs has been conducted. However, the following stakeholders have been notified of the proposed clearing, and associated NVCP application.

Shire of Dandaragan – ProTen has obtained a Letter of Authority (LOA) (Appendix D) from the Shire of Dandaragan which gives ProTen authority to access and clear native vegetation on the following properties, for the purposes of road upgrades at the intersection of Hunter Road and Brand:

- Road reserve, Land ID Number 3145453 (access and clearing)
- Road reserve, Land ID Number 3145467 (access and clearing)
- Lot on Plan P062913 500 (Land ID Number 3824246) (access and clearing).

6 Assessment of Clearing Against the Ten Clearing Principles

The proposed native vegetation clearing has been assessed against the ten clearing principles described within A guide to the assessment of applications to clear native vegetation Under Part V Division 2 of the Environmental Protection Act 1986 (DER 2014). Table 2 provides the assessment of the proposed native vegetation clearing against these ten clearing principles.

Table 2 Assessment of Clearing Against the Ten Clearing Principles

Clearing Principle	Assessment	Methodology	Outcome
a) Native vegetation should not be cleared if it comprises a high level of biological diversity.	<p>ProTen is seeking approval to clear up to 0.48 ha of native vegetation within the Project Area (Figure 2) to support the Project. The native vegetation targeted for removal along the sides of Hunter Road, within the NVCAs (NVCA 1-4) is comprised of trees, shrubs, and grasses (unknown species). Photos of the vegetation proposed to be cleared are provided in Appendix A. ProTen aims to minimise the amount of clearing of native vegetation as far as reasonably practicable to undertake the construction Works safely as required.</p> <p>As shown in photos 1, 4, and 8 (Appendix A) several individual trees proposed to be cleared are in degraded to completely degraded condition.</p> <p>Based on the desktop assessment, site photos (Appendix A), and the relatively small amount of native vegetation proposed to be cleared, it is unlikely the proposed vegetation to be cleared would constitute a high level of biological diversity. Therefore, it is unlikely that the clearing will be at variance to this principle.</p>	<ul style="list-style-type: none"> — DBCA Shapefiles. — DBCA (2022a, 2022b & 2022c). — Australian Government 2022. — Site photos (Appendix A). — Australian Government (2022). — DCCEEW (2022a, 2022b & 2022c). — DEE (2016a & 2016b). — Government of Western Australia (2022). 	The proposed clearing is not likely to be at variance with this Principle.

Clearing Principle	Assessment	Methodology	Outcome
b) Native vegetation should not be cleared if it comprises the whole, or part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to WA.	<p>ProTen is seeking approval to clear up to 0.48 ha of native vegetation within the Project Area (Figure 2) to support the Project. The native vegetation targeted for removal along the sides of Hunter Road, within the NVCAs (NVCA 1-4) is comprised of trees, shrubs, and grasses (unknown species). Photos of the vegetation proposed to be cleared are provided in Appendix A. ProTen aims to minimise the amount of clearing of native vegetation as far as reasonably practicable to undertake the construction Works safely as required.</p> <p>The native vegetation proposed to be cleared, will be removed entirely from base for safe access.</p> <p>The nearest conservation significant fauna record is the Carnaby's cockatoo (<i>Calyptrorhynchus latirostris</i>), approximately 150 m southeast of the Project Area. The Project Area is within a 6 km buffer area of Carnaby's Cockatoo Confirmed Breeding Areas and Roosting areas (DBCA-054) within the Swan Coastal Plan and Jarrah Forest IBRA Regions (Australian Government 2022) and approximately. 1km away from confirmed roosting site (DBCA-050).</p> <p>The Project Area is located approximately 500 m west from the boundary of Black Cockatoo Roosting Buffered Site (DBCA-064) and approximately 930 m west from the boundary of Carnaby's Cockatoo Confirmed Roost Site (DBCA-050). The data search (DBCA-063) also shows that there exist Black Cockatoo Breeding Sites at the distance of approximately 6.5 km form the Project Area</p> <p>Based on the site photos and information provided by ProTen, it is unlikely that the vegetation proposed for clearing would meet the criteria for potential Black Cockatoo breeding habitat trees (diameter at breast height greater than or equal to 50 cm) or for night roosting. The site photos (provide in Appendix A) indicate that the vegetation proposed to be cleared are less than 4 m in height and 50 cm diameter at breast height (DBH).</p> <p>As shown in photos 1, 4, and 8 (Appendix A) several individual trees proposed to be cleared are in degraded to completely degraded condition.</p> <p>The vegetation proposed to be cleared within the NVCAs is not likely to be considered significant habitat for the Black Cockatoos, as it is less than 1 ha in size and is not known to contain breeding hollows (as per the site photos provided in Appendix A).</p> <p>Based on the desktop assessment, site photos (Appendix A), and the relatively small amount of native vegetation proposed to be cleared, it is unlikely that the proposed vegetation to be cleared would provide the whole, or part of, or necessary for the maintenance of, a significant habitat for fauna indigenous to WA. Therefore, the proposed clearing is not likely to be at variance with this Principle.</p>	<ul style="list-style-type: none"> — DBCA-064 — DBCA-050 — DBCA-054 — DBCA Shapefiles — DBCA (2022a, 2022b & 2022c) — Australian Government 2022 — Site photos (Appendix A) — Australian Government (2022) — DCCEEW (2022a, 2022b & 2022c) — DEE (2016a & 2016b) — Government of Western Australia (2022) 	The proposed clearing is not likely to be at variance with this Principle.

Clearing Principle	Assessment	Methodology	Outcome
c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	<p>ProTen is seeking approval to clear up to 0.48 ha of native vegetation within the Project Area (Figure 2) to support the Project. The native vegetation targeted for removal along the sides of Hunter Road, within the NVCAs (NVCA 1-4) is comprised of trees, shrubs, and grasses (unknown species). Photos of the vegetation proposed to be cleared are provided in Appendix A. ProTen aims to minimise the amount of clearing of native vegetation as far as reasonably practicable to undertake the construction Works safely as required.</p> <p>No conservation significant flora species were recorded to occur within the Project Area, as shown on figure 3. The nearest records include <i>Haemodorum loratum</i>, approximately 350 meters from the Project Area.</p> <p>As shown in photos 1, 4, and 8 (Appendix A) several individual trees proposed to be cleared are in degraded to completely degraded condition.</p> <p>The environmental desktop assessment showed that no declared rare (Threatened) or Priority flora species occur or are likely to occur within the Project Area. Therefore, the proposed clearing is not likely to be at variance with this Principle.</p>	<ul style="list-style-type: none"> — DBCA Shapefiles — DBCA (2022a, 2022b & 2022c) — Australian Government 2022 — Site photos — Figure 3 — Australian Government (2022) — DCCEEW (2022a, 2022b & 2022c) — DEE (2016a & 2016b) — Government of Western Australia (2022) 	The proposed clearing is not likely to be at variance with this Principle.

Clearing Principle	Assessment	Methodology	Outcome
d) Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of, a Threatened Ecological Community.	<p>ProTen is seeking approval to clear up to 0.48 ha of native vegetation within the Project Area (Figure 2) to support the Project. The native vegetation targeted for removal along the sides of Hunter Road, within the NVCAs (NVCA 1-4) is comprised of trees, shrubs, and grasses (unknown species). Photos of the vegetation proposed to be cleared are provided in Appendix A. ProTen aims to minimise the amount of clearing of native vegetation as far as reasonably practicable to undertake the construction Works safely as required.</p> <p>As shown in photos 1, 4, and 8 (Appendix A) several individual trees proposed to be cleared are in degraded to completely degraded condition.</p> <p>The desktop assessment showed that the Project Area is located within the Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region (listed as a TEC since 2016). The estimated extent remaining in 2015 of the Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region was up to 337,000 ha (DEE 2016b).</p> <p>The 0.48 ha of native vegetation proposed to be cleared is less than 0000.1% of the extent remaining, and therefore it is unlikely that the clearing will be at variance to this principle.</p>	<ul style="list-style-type: none"> — DBCA Shapefiles — DBCA (2022a, 2022b & 2022c) — Australian Government 2022 — Site photos/Figure 5 — Australian Government (2022) — Data WA (2022) — DAWE (2022a, 2022b & 2022c) — DEE (2016a & 2016b) — Government of Western Australia (2022) 	The proposed clearing is not likely to be at variance with this Principle.

Clearing Principle	Assessment	Methodology	Outcome							
e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.	ProTen is seeking approval to clear up to 0.48 ha of native vegetation within the Project Area (Figure 2) to support the Project. The native vegetation targeted for removal along the sides of Hunter Road, within the NVCA (NVCA 1-4) is comprised of trees, shrubs, and grasses (unknown species). Photos of the vegetation proposed to be cleared are provided in Appendix A. ProTen aims to minimise the amount of clearing of native vegetation as far as reasonably practicable to undertake the construction Works safely as required.	<ul style="list-style-type: none">— Site photos— Figure 2— (DPIRD-005)— (DPIRD-006)— DWER (2023a, 2023b)	The proposed clearing is not likely to be at variance with this Principle.							
	The proposed native vegetation clearing area falls within the pre-European vegetation with the current extent of 86,013.90 hectares and remaining percentage of pre-European extent of 63.81% (DWER, 2023b).									
	The table below lists the percentage remaining of the only vegetation complex identified within the Project Area and indicates whether the Commonwealth 30% retention target is met. The vegetation complex present within the Project Area meets the 30% target. Therefore, the proposed clearing is not likely to be at variance with this Principle.									
	<table><tr><th>Vegetation Name</th><th>Pre-European Extent (ha)</th><th>Current Extent (ha)</th><th>Pre-European % Remaining</th><th>Is the 30% Target Met?</th></tr><tr><td>Bassendean</td><td>134,788.56</td><td>86,013.90</td><td>63.81%</td><td>Yes</td></tr></table>			Vegetation Name	Pre-European Extent (ha)	Current Extent (ha)	Pre-European % Remaining	Is the 30% Target Met?	Bassendean	134,788.56
Vegetation Name	Pre-European Extent (ha)	Current Extent (ha)	Pre-European % Remaining	Is the 30% Target Met?						
Bassendean	134,788.56	86,013.90	63.81%	Yes						

Clearing Principle	Assessment	Methodology	Outcome
f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	<p>ProTen is seeking approval to clear up to 0.48 ha of native vegetation within the Project Area (Figure 2) to support the Project. The native vegetation targeted for removal along the sides of Hunter Road, within the NVCAs (NVCA 1-4) is comprised of trees, shrubs, and grasses (unknown species). Photos of the vegetation proposed to be cleared are provided in Appendix A. ProTen aims to minimise the amount of clearing of native vegetation as far as reasonably practicable to undertake the construction Works safely as required.</p> <p>The Project Area is not located within and does not intersect any watercourses. The nearest major perennial watercourse is the Moore River, located approximately 650 m to the southeast of the Project Area, as shown on Figure 3. The Moore River is a Proclaimed Surface Water Area under the RIWI Act.</p> <p>As per the desktop survey (NationalMap) there are two priority 1 (P1) and two priority 2 (P2) public drinking water sources approximately 31 km and 27 km respectively from Project Area.</p> <p>The nearest wetland (Nationally Important Wetlands) form the Project Area include (Australian Government, 2022):</p> <ul style="list-style-type: none"> — Guraga Lake approximately 17 km northwest direction of the Project Area (not a Ramsar wetland) — Karakin Lakes approximately 22 km southwest direction of the Project Area (not a Ramsar wetland). <p>The purposed native vegetation clearing is not at variance with this principle.</p>	<ul style="list-style-type: none"> — DBCA Shapefiles. — Australian Government 2022 — Site photos — (DWER-033) — (DWER-037) — Figure 2 	The proposed clearing is not at variance with this Principle.
g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	<p>ProTen is seeking approval to clear up to 0.48 ha of native vegetation within the Project Area (Figure 2) to support the Project. The native vegetation targeted for removal along the sides of Hunter Road, within the NVCAs (NVCA 1-4) is comprised of trees, shrubs, and grasses (unknown species). Photos of the vegetation proposed to be cleared are provided in Appendix A. ProTen aims to minimise the amount of clearing of native vegetation as far as reasonably practicable to undertake the construction Works safely as required.</p> <p>Erosion poses the greatest risk of land degradation to the Project Area. As the purpose area does not fall with any watercourse or an environment associated with watercourse (Figure 1), the vegetation clearing is unlikely to cause soil erosion. As shown in photos 1, 4, and 8 (Appendix A) several individual trees proposed to be cleared are in degraded to completely degraded condition.</p> <p>As the total area to be cleared is 0.48 ha which is relatively small and therefore, it is not likely to cause appreciable land degradation. The proposed clearing is not at variance with this Principle.</p>	<ul style="list-style-type: none"> — DBCA Shapefiles — Australian Government 2022 — Site photos — Figure 1 	The proposed clearing is not at variance with this Principle.

Clearing Principle	Assessment	Methodology	Outcome
h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.	<p>ProTen is seeking approval to clear up to 0.48 ha of native vegetation within the Project Area (Figure 2) to support the Project. The native vegetation targeted for removal along the sides of Hunter Road, within the NVCA (NVCA 1-4) is comprised of trees, shrubs, and grasses (unknown species). Photos of the vegetation proposed to be cleared are provided in Appendix A. ProTen aims to minimise the amount of clearing of native vegetation as far as reasonably practicable to undertake the construction Works safely as required.</p> <p>The following conservation areas are located within a 15 km radius of the Project Area (Australian Government 2022):</p> <ul style="list-style-type: none"> — Namming Nature Reserve — Moore River National Park — Unnamed Nature Reserve (Parcel identifier R 25591) — Quins Hill Nature Reserve. <p>No conservation areas are located within or in close proximity to the Project Area. The nearest conservation areas are the Namming Nature Reserve and Moore River National Park located approximately 2.5 km west and 6.5 km south of the Project Area respectively. These conservation areas are separated from the Project Area by cleared agricultural properties and road infrastructure.</p> <p>Given the minimal amount of clearing proposed (0.48 ha), and the separation distances to conservation areas, the clearing of native vegetation is not likely to have an impact on the environmental values of these conservation areas.</p>	<ul style="list-style-type: none"> — DBCA Shapefiles — DBCA (2022a, 2022b & 2022c) — Australian Government 2022 — Site photos — Australian Government (2022) — Data WA (2022) — (DBCA-011) — (DPLH-019) 	The proposed clearing is not likely to be at variance with this Principle.

Clearing Principle	Assessment	Methodology	Outcome
i) Native vegetation should not be cleared if the clearing is likely to cause deterioration in the quality of surface or underground water.	<p>ProTen is seeking approval to clear up to 0.48 ha of native vegetation within the Project Area (Figure 2) to support the Project. The native vegetation targeted for removal along the sides of Hunter Road, within the NVCA (NVCA 1-4) is comprised of trees, shrubs, and grasses (unknown species). Photos of the vegetation proposed to be cleared are provided in Appendix A. ProTen aims to minimise the amount of clearing of native vegetation as far as reasonably practicable to undertake the construction Works safely as required.</p> <p>The Project Area is not located within and does not intersect any watercourses. The nearest major perennial watercourse is the Moore River, located approximately 650 m to the southeast of the Project Area, as shown on Figure 3. The Moore River is a Proclaimed Surface Water Area under the RIWI Act.</p> <p>As per the desktop survey (NationalMap) there are two priority 1 (P1) and two priority 2 (P2) public drinking water sources approximately 31 km and 27 km respectively from Project Area.</p> <p>The nearest wetland (Nationally Important Wetlands) from the Project Area includes (Australian Government, 2022):</p> <ul style="list-style-type: none"> — Guraga Lake approximately 17 km northwest direction of the Project Area (not a Ramsar wetland) — Karakin Lakes approximately 22 km southwest direction of the Project Area (not a Ramsar wetland). <p>As the Project Area is not located within and does not intersect any watercourses, the clearing is not expected to cause deterioration in the quality of surface or underground water. Therefore, the proposed clearing is not likely to be at variance with this principle.</p>	<ul style="list-style-type: none"> — DBCA Shapefiles — DBCA (2022a, 2022b & 2022c) — Australian Government 2022 — Site photos — (DWER-036) — (DWER-033) 	The proposed clearing is not likely to be at variance with this Principle.
j) Native vegetation should not be cleared if the clearing is likely to cause, or exacerbate, the incidence or intensity of flooding.	<p>ProTen is seeking approval to clear up to 0.48 ha of native vegetation within the Project Area (Figure 2) to support the Project. The native vegetation targeted for removal along the sides of Hunter Road, within the NVCA (NVCA 1-4) is comprised of trees, shrubs, and grasses (unknown species). Photos of the vegetation proposed to be cleared are provided in Appendix D. ProTen aims to minimise the amount of clearing of native vegetation as far as reasonably practicable to undertake the construction Works safely as required.</p> <p>The Project Area is not located within a floodway or flood fringe areas (DWER, Western Australia floodplain mapping tool). The removal of such a small, localised area of vegetation is unlikely to increase the incidence or intensity of flooding in the local area. Therefore, the proposed clearing is not likely to be at variance with this principle.</p>	<ul style="list-style-type: none"> — Australian Government 2022 — Site photos — (DWER-018) — (DWER-019) — (DWER-020) 	The proposed clearing is not likely to be at variance with this Principle.

7 Conclusion

ProTen is seeking approval to clear up to 0.48 ha of remnant native vegetation within the NVCAs (Figure 2) to support road works for the intersection upgrade of Hunter Road and Brand Highway. The proposed NVCAs are comprised of trees, shrubs, and grasses (unknown species).

ProTen aims to minimise the amount of clearing of native vegetation as far as reasonably practicable to undertake the construction works safely as required. ProTen will avoid clearing native vegetation where possible and if clearing is unavoidable, it will be kept to a minimum, within the proposed NVCAs (NVCA 1-4).

The proposed native vegetation clearing was assessed against the ten clearing principles described within *A guide to the assessment of applications to clear native vegetation Under Part V Division 2 of the Environmental Protection Act 1986* (Table 2). Based on the desktop survey, and the assessment against the ten clearing principles, the proposed native vegetation clearing within the NVCAs is not likely to be at variance with any of the ten clearing Principles.

Given the findings of the above-mentioned assessment and considering ProTen will avoid clearing native vegetation where possible, no significant environmental impacts are expected as a result of the proposed clearing within the NVCAs.

8 References

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