South West Health Campus

Native Vegetation Clearing Permit Application Supporting Report

Department of Finance

02 June 2021

The Power of Commitment

GHD Pty Ltd | ABN 39 008 488 373
999 Hay Street, Level 10
Perth, Western Australia 6000, Australia
T 61-8-6222 8222 | **F** 6222 8555 | **E** [Office email] | **ghd.com**

Printed date	2/06/2021 1:20:00 PM
Last saved date	02 June 2021
File name	https://projectsportal.ghd.com/sites/pp18_02/southwesthealthcampu/ProjectDocs/12542166-REP_SW Health Campus NVCP Supporting Report.docx
Author	Pooranie Yoganathan, Jordan Tindiglia
Project manager	Kelsey Hunt
Client name	Department of Finance
Project name	South West Health Campus wetland evaluation
Document title	South West Health Campus | Native Vegetation Clearing Permit Application Supporting Report
Revision version	Rev A
Project number	12542166

Document status

Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
	A	P Yoganathan	J Tindiglia		N Deeks		2/06/2021

This report has been prepared by GHD for [Client] and may only be used and relied on by [Client] for the purpose agreed between GHD and [Client] as set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than [Client] arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

Contents

Table index

Figure index

Attachments

1. Introduction

1.1 Background

The Department of Finance are proposing to expand the South West Health Campus carpark, located on Bussell Highway in Bunbury, Western Australia. The expansion will provide additional bays to the west and north of the existing carpark. A native vegetation clearing permit (NVCP) (purpose) is required for clearing of native vegetation associated with the proposed works.

1.2 Purpose of this report

This document has been prepared in support of an application for a NVCP under Section 51E of Part V of the *Environmental Protection Act 1986* (EP Act), to clear up to 0.66 hectares (ha) of native vegetation within an area of 1.14 ha.

This document includes:

– An overview of project and description of clearing activities to be undertaken (Section 2)
– An overview of existing environment (Section 3)
– An assessment against the Ten Clearing Principles, as defined in Schedule 5 of the EP Act (Section 4).

2. Project details

2.1 Overview

A parking study was undertaken by Cardno in 2018 for the Bunbury Health Campus, reviewing the parking occupancy, availability, access arrangements and relevant transport provisions. According to the previous investigation completed, a shortfall in car parking provision to the west carpark was identified and approximately 215 vehicles were not parked within a marked parking bay.

The proposed works will include:

– New carpark to the north west Parking A & C – 195 bays.
– New Carpark to the north east Parking B – 40 bays.
– New Carpark to the south west Parking D – 20 bays.

The proposed works will provide 215 additional bays to the west (Parking A, C & D) and an additional overflow of 40 bays to the north (Parking B) (Figure 2.1).

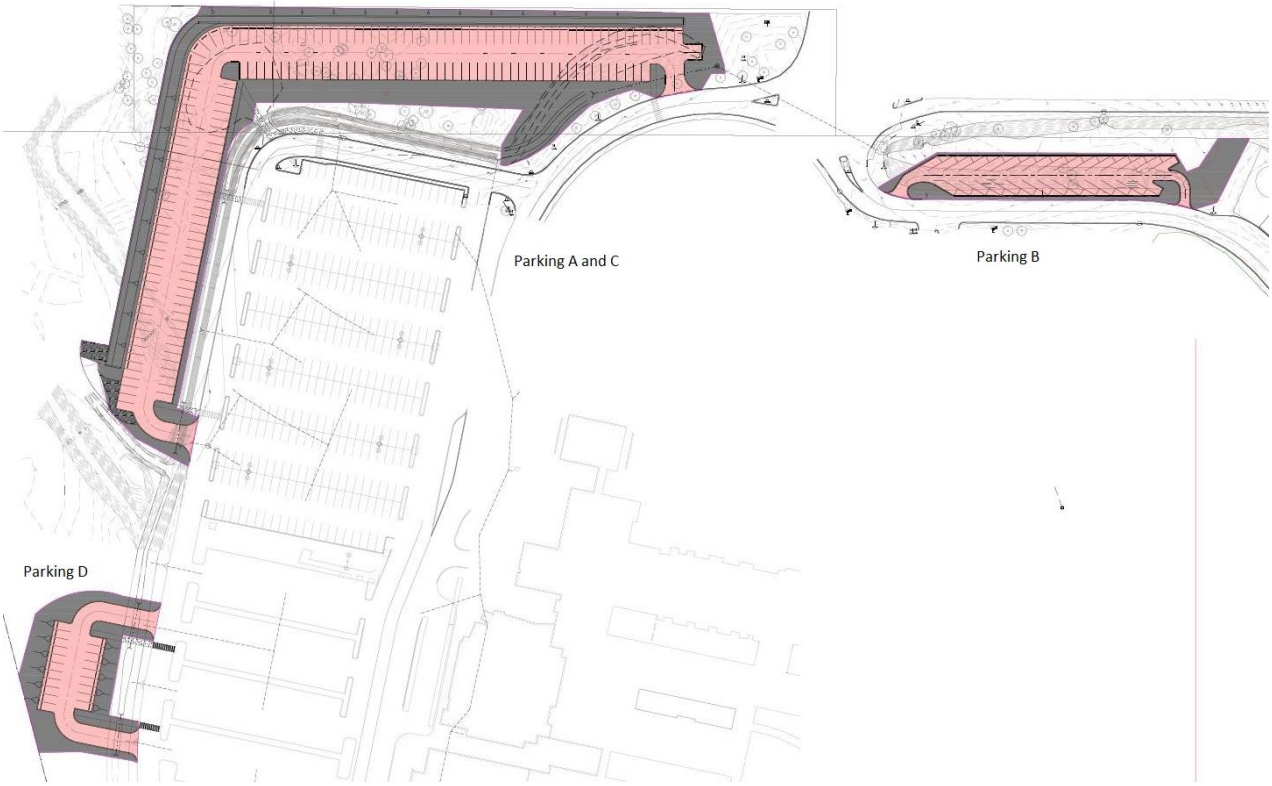

Figure 2.1 Carpark layout

2.2 Location

The proposed carpark expansion area (hereon referred to as the 'NVCP Area') will extend from the existing carpark's northern and western boundaries into the corner portion of Bussell Highway and Robertson Drive. The NVCP Area is located within Lot 3000 Bussell Highway College Grove (DP43553) and Lot 555 (DP 76310) within the City of Bunbury allocated for 'Public purposes – hospital'. Both lots are located within Reserve 44281 for the purpose of Health (Hospital and Allied Purposes) with a management order from Minster for Health and managed

by Department of Health. Location details are summarised in Table 2.1 with Certificates of Titles provided in Attachment 1.

The NVCP Area covers 1.14 hectares (ha) and is mapped in Figure 2.2.

Table 2.1 Summary of location details

Aspect	Lot 3000	Lot 555
Certificate of Title	LR3136/212	LR3171/256
Area (m²)	156,984	8,911
Crown Reserve	R 44281	R 44281
Reserve Purpose	Health (Hospital and Allied Purposes)	Health (Hospital and Allied Purposes)
Responsible Agency	Department of Health	Department of Health
Management Order	Minister for Health	Minister for Health
Local Government Authority	City of Bunbury	City of Bunbury
Greater Bunbury Region Scheme	Reserve: Public purposes - hospital	Reserve: Public purposes - hospital
Local Planning Scheme No. 8	Reserve: Public purposes - hospital	Reserve: Public purposes - hospital

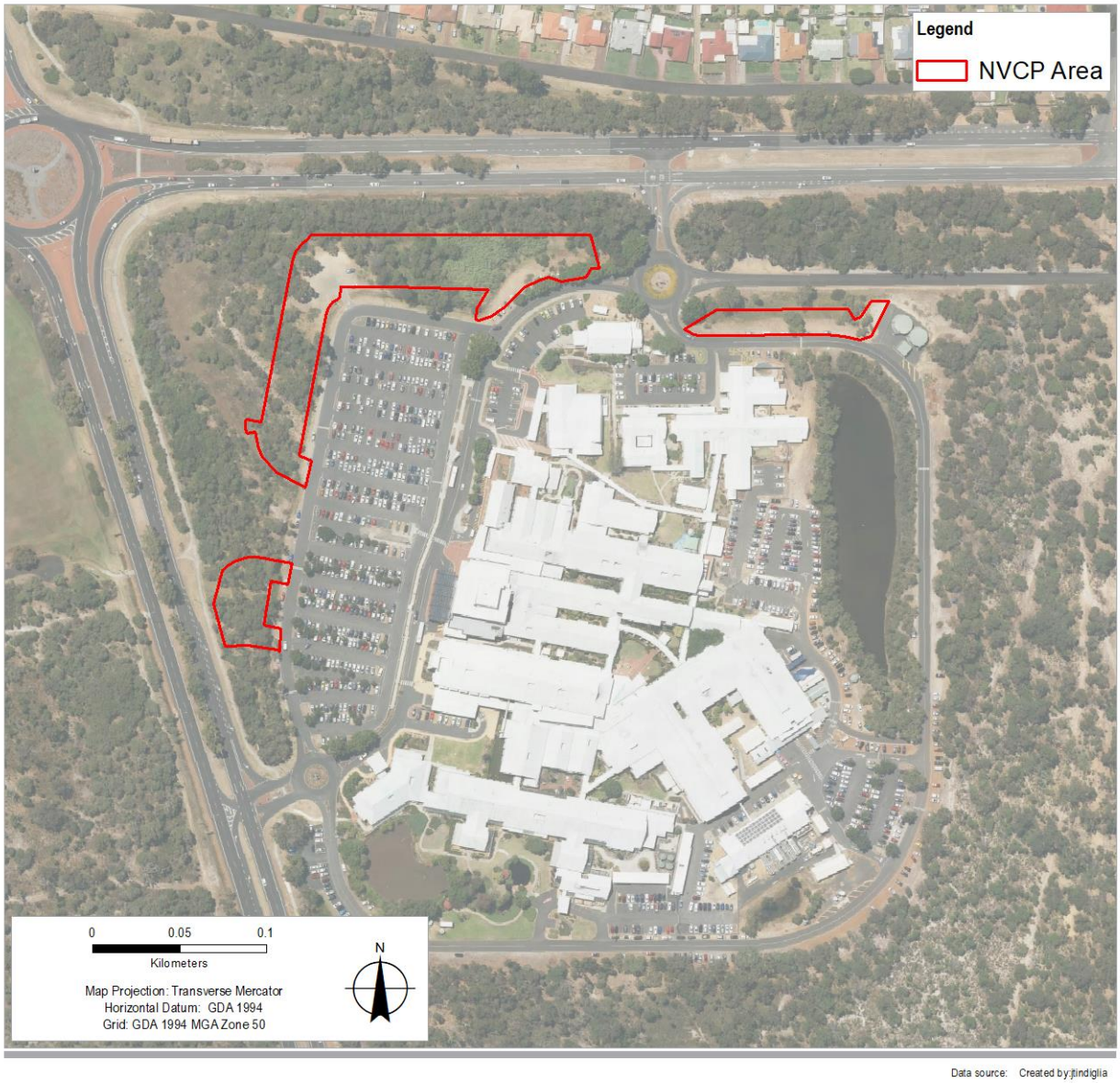

Figure 2.2 NVCP Area

2.3 Impact avoidance through design

Project design has utilised the results from the biological surveys, hydrological assessment and wetland evaluation to avoid and minimise impacts to areas of high biological and hydrological value where possible. The Department of Finance has also undertaken consultation and engagement with the Department of Biodiversity, Conservation and Attractions (DBCA) to seek their input on the results of the surveys and assessments and preliminary designs for the project.

Significant effort has been taken to avoid impacts on the environment. The following avoidance and minimisation measures have been considered:

– Where possible, works will be undertaken within previously cleared land.
– Early consultation with the DBCA to ensure design acceptance and determine concerns in relation to minimising impacts to native vegetation.

2.4 Construction approach

2.4.1 Vegetation clearing

The carpark will be cleared mechanically via excavator. Clearing of native vegetation will be undertaken using traditional earth moving machinery such as bulldozers. Topsoil will be stripped separately and stockpiled for later reuse.

2.4.2 Stormwater management

A geotechnical report has been completed, concluding that the upper sandy strata is suitable for disposal of stormwater drainage via infiltration. Currently storm water on the site is disposed of via a system of open drains which discharge to the north-west corner of the site.

Stormwater drainage design has been discussed with the City of Bunbury Engineering Department. An above-ground drainage system is proposed similar to the current approach. The volumetric storage is a pro-rata volume of 2 m^3 per 65 m^2 of impervious area, with a maximum water depth of 500 mm. This criteria corresponds to a relatively frequent storm event. For rarer storm events, the open drain will overflow into the existing low area in the northern corner of the site and overflows will function as the site currently does.

Culverts will be provided to provide connectivity to existing open drains. No other pit and pipe systems are proposed. Sheet flows across the carpark will be directed to open drains. The eastern slope face will be armored for erosion control which can include stone pitching or matting confinement systems, which are designed to prevent migration of soil.

This approach is anticipated to not interrupt the existing drainage system during the construction process. However, culvert and the like will need to be installed to allow for general water flow.

2.5 Stakeholder consultation

A summary of stakeholder consultation undertaken for the project is summarized in Table 2.2.

Table 2.2 Summary of stakeholder consultation

Agency	Date	Topic / feedback / comment	Outcome
DBCA	24/02/2021	Email response from DBCA regarding car park options, and identifies an alternate option that considers DBCA identified site constraints to protect areas of high biodiversity value.	BHC considered an alternate car park option that protects identified areas of high biodiversity value.
DBCA (South West region)	Ongoing since 2020	Consultation with DBCA has been ongoing to ensure the car park is located and designed in a manner which minimises impact on the remnant vegetation and wetland features. The DBCA was provided with full copies of the Ecoscape and GHD reports, with the DBCA providing advice to the project team on their own on-site considerations regarding vegetation quality and wetland characteristics.	BHC completed considered an alternate car park option that protects identified areas of high biodiversity value. In developing the concept for the car park, the Department of Finance engaged Ecoscape to undertake a flora survey of the affected area of the site to determine the characteristics of the vegetation on site and to assist in confirming the need to obtain approval to clear native vegetation to faciliate development. GHD was also engaged to undertake hydrological investigations of the site to identfy the extent and characteristics of the wetland.
DBCA		As the location and car park concept progressed, input was sought from the	In some instances, the DBCA feedback necessitated a relocation or redesign of the car park concept.

Agency	Date	Topic / feedback / comment	Outcome
		DBCA as to the suitability of each preliminary concept.	
DBCA	29 April 2021	The final car park concept to be progressed for Development Approval and Clearing Permit (Alternate Option 8).	Received an email response from DBCA advising that DBCA supported the Alternate Option 8 concept.

3. Existing environment

3.1 Landform and soils

The NVCP Area is located within the Perth Coastal Zone of the Swan Province (Schoknecht et al. 2004). Soil landscape mapping indicates the NVCP Area occurs within the Spearwood Dune system on a flat to gently undulating sandplain with deep yellow-brown or dark brown siliceous sands that are seasonally inundated (Spearwood S4c Phase; Government of Western Australia (GoWA) 2021a).

As part of a wetland evaluation completed by GHD in 2020, six soil augers were sampled to the west of the existing carpark area, within and adjacent to the NVCP Area. The soil assessment identified the presence of surficial organic soils underlain by sands at one location (HA1). Sands were present at the remaining locations (HA2, HA3, HA5, HA6) and sand fill within a perimeter bund (HA4) (GHD 2020).

A review of acid sulfate soils (ASS) risk mapping indicates that the NVCP Area is located within an area that has a moderate to low risk of ASS occurring within 3 m of natural soil surface (GoWA 2021a).

3.2 Hydrology

3.2.1 Groundwater

The NVCP Area is located in the Bunbury Groundwater Area proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act) (GoWA 2021a).

As part of a wetland evaluation completed by GHD in 2020, groundwater was intercepted at soil auger locations HA1, HA2, HA3 and HA5, ranging from 0.1 metres below ground level (mbgl) at HA1 to 0.35 mbgl at HA5. Moist soil was intercepted in soil auger HA6 at 0.6 to 0.8 mbgl (GHD 2020).

The observed shallow groundwater conditions within and adjacent to the NVCP Area corresponds with elevated groundwater observed within nearby Department of Water and Environmental Regulation (DWER) groundwater monitoring bores. Continuous groundwater level data is available for a shallow screened bore sited within Hay Park (located west of the NVCP Area; site reference 61111458, monitoring data from February 2010 through September 2020). This bore identifies seasonal fluctuation of groundwater between approximately 1.6 mbgl and 0.12 m above ground level, indicating water inundation of the ground surface (GHD 2020).

3.2.2 Surface water and wetlands

The NVCP Area is located within the Bunbury Water Reserve Public Drinking Water Source Area, which is listed as Priority 3 under the *Country Areas Water Supply Act 1947*.

There are no wetlands of national or international importance (Ramsar) within the NVCP Area.

The NVCP Area is located within a palusplain wetland (UFI 15,492), which is mapped as large Multiple Use wetland in the Geomorphic Wetlands Swan Coastal Plain dataset (Hill et al. 1995). A wetland evaluation completed by GHD in 2020, concluded that while the wetland area located within Lot 3000 Bussell Highway, Bunbury has had significant modification to hydrological function due to land use and site drainage, the core wetland area exhibits wetland characteristics. Based on this assessment it was considered that the central core of the wetland is representative of a Resource Enhancement wetland (GHD 2020).

3.3 Vegetation and flora

3.3.1 Vegetation complexes

Regional vegetation complex mapping has been completed by Heddle at al. (1980) with updates from Webb et al. (2016) based on major landform boundaries on the Swan Coastal Plain (SCP) and forested region of south-west Western Australia. The mapping indicates one vegetation complex is present within the NVCP Area:

– Yoongarillup Complex: Woodland to tall woodland of *Eucalyptus gomphocephala* (Tuart) with *Agonis flexuosa* in the second storey. Less consistently an open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri). South of Bunbury is characterized by *Eucalyptus rudis* (Flooded Gum)-*Melaleuca* species open forests.

GoWA (2021b) has assessed the vegetation complexes mapped by Heddle et al. (1980) and Webb et al. (2016) against presumed pre-European extents within the SCP bioregion and Local Government Areas. Table 3.1 shows the current extent of the Yoongarillup complex is greater than 30% of its pre-European extent within the SCP bioregion but less than 30% of its pre-European extent within the City of Bunbury.

Table 3.1 Extent of the Yoogarillup Complex (GoWA 2021b)

Scale	Pre-European extent (ha)	Current extent (ha)	Remaining (%)	Remaining within DBCA managed lands (%)
SCP	27,977.93	10,018.14	35.81	14.14
City of Bunbury	1,435.65	156.36	10.89	Not available

3.3.2 Vegetation types and condition

Ecoscape undertook detailed flora and vegetation surveys of areas to the north and west of the existing South West Health Campus carpark in accordance with the methods outlined in the Flora and Vegetation Technical Guidance (EPA 2016). The survey methods employed by Ecoscape included assessing vegetation type and condition using quadrats and relevés. Targeted searches for Threatened and Priority flora in areas of potential habitat were also undertaken as part of the survey (Ecoscape 2020a, b).

The surveys completed by Ecoscape cover the NVCP Area to the west (Parking A, C & D) of the existing carpark. There is no current survey information available for the NVCP Area to the north (Parking B). Based on aerial imagery this area is largely cleared with scattered trees and shrubs.

The surveys identified six vegetation types within the NVCP Area (Ecoscape 2020a, b). A summary of the vegetation types and their conditions within the NVCP Area is provided in Table 3.2 and mapped in Figure 3.1.

Table 3.2 Vegetation types and condition extents mapped within the NVCP Area

Vegetation Type	Description	Condition	Extent (ha)
MpBj	*Melaleuca preissiana* low open woodland over *Baumea juncea, *Cynodon dactylon* and Asteraceae sp. low rushland/tussock grassland/forbland	Degraded	0.01
MpAlBj	*Melaleuca preissiana, Banksia littoralis* and *Corymbia calophylla mid open forest over *Acacia longifolia subsp. longifolia* and *Schinus terebinthifolia* tall sparse shrubland over *Baumea juncea,*Cynodon dactylon* and Cyperaceae sp. mid closed sedgeland/tussock grassland	Good	0.01
		Degraded	0.05
		Completely Degraded	0.05
CcKgEl	*Corymbia calophylla* mid open woodland over *Kunzea glabrescens* and *Acacia longifolia subsp. longifolia* tall open shrubland over *Ehrharta longiflora, *Cenchrus clandestinus* and *Hypochaeris glabra* low grassland/tussock grassland/forbland	Degraded	0.01
CcCc	*Corymbia calophylla* mid open forest over *Cenchrus clandestinus, Baumea juncea* and *Watsonia meriana* mid closed tussock grassland/sedgeland/forbland)	Degraded	0.20
		Completely Degraded	0.18
AdCc	*Arundo donax* tall closed tussock grassland over *Cenchrus clandestinus* and *Oxalis pes-caprae* low tussock grassland/forbland	Completely Degraded	0.14
CsFc	*Casuarina sp.* mid closed forest over *Fumaria capreolata, *Oxalis pes-caprae* and *Ehrharta longiflora* low forbland/grassland	Completely Degraded	0.01

Vegetation Type	Description	Condition	Extent (ha)
Cleared		-	0.30
No survey data		-	0.18
Total			**1.14**

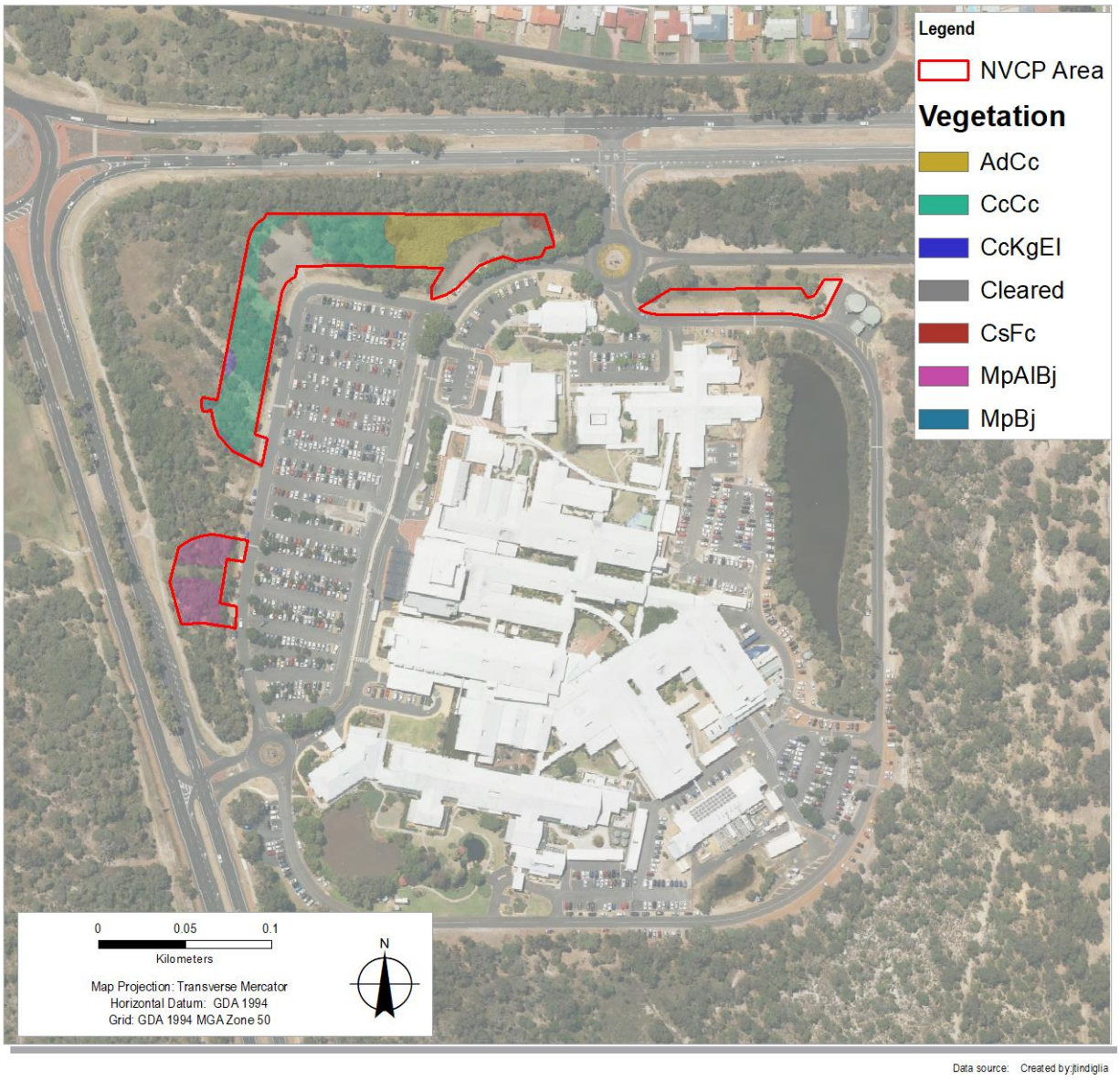

Figure 3.1 Vegetation mapping within the NVCP Area

3.3.3 Significant ecological communities

Desktop searches identified the presence/potential presence of six Threatened or Priority Ecological Communities (TECs/PECs) within 5 km of the NVCP Area (Table 3.3). None of these TECs/PECs occur within the NVCP Area.

Ecoscape's floristic analysis indicates that vegetation type MpAlBj shows some floristic similarity with Floristic Community Type 21c Low-lying *Banksia attenuata* woodlands or shrublands, which is listed as a Priority 3 PEC by DBCA. There is 0.01 ha of MpAlBj in Good condition within the NVCP Area; this vegetation is considered representative of the Low-lying *Banksia attenuata* woodlands or shrublands PEC. It is noted that this vegetation does not meet the patch size and condition thresholds to be considered the representative of the *Banksia*

Woodlands of the Swan Coastal Plain TEC which is listed as Endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Vegetation type MpBj corresponds with the core wetland area identified in the wetland evaluation (GHD 2020). Within the NVCP Area, vegetation representative of MpBj occurs is degraded in condition.

Table 3.3 Significant ecological communities identified in the desktop searches

Ecological community	Status	Conclusion	Source of information
Banksia Woodlands of the Swan Coastal Plain TEC/PEC	EPBC Act: En DBCA: P3	TEC buffer intersects NVCP Area. TEC/PEC not identified within or adjacent to NVCP Area.	EPBC Act Protected Matters search tool DBCA TEC/PEC database Ecoscape (2020a, b)
Dense rich shrublands on clay flats (SCP09) TEC*	EPBC Act: CE BC Act: V	TEC buffer occurs within 5 km of the NVCP Area. TEC not identified within or adjacent to NVCP Area.	DBCA TEC/PEC database Ecoscape (2020a, b)
Herb rich shrublands in clay pans (SCP08) TEC*	EPBC Act: CE BC Act: Vu	TEC buffer intersects NVCP Area. TEC not identified within or adjacent to NVCP Area.	DBCA TEC/PEC database Ecoscape (2020a, b)
Shrublands on calcareous silts of the Swan Coastal Plain (SCP18) TEC	BC Act: Vu	TEC buffer intersects NVCP Area. TEC not identified within or adjacent to NVCP Area.	DBCA TEC/PEC database Ecoscape (2020a, b)
Subtropical and Temperate Coastal Saltmarsh TEC/PEC	EPBC Act: Vu DBCA: P3	TEC may occur within the NVCP Area. TEC/PEC not identified within or adjacent to NVCP Area.	EPBC Act Protected Matters search tool Ecoscape (2020a, b)
Tuart *(Eucalyptus gomphocephala)* Woodlands and Forests of the Swan Coastal Plain TEC/PEC	EPBC Act: CE DBCA: P3	TEC may occur within the NVCP Area. TEC/PEC not identified within or adjacent to NVCP Area.	EPBC Act Protected Matters search tool Ecoscape (2020a, b)

**A component of the EPBC Act listed Clay Pans of the Swan Coastal Plain TEC.*

3.3.4 Flora diversity

Ecoscape recorded 157 vascular flora from 116 genera and 46 families during their surveys. Of these, 73 were introduced (46.5%) including possible garden escapees, and 11 (7%) could not be identified to species level due to insufficient diagnostic reproductive material (Ecoscape 2020a, b).

3.3.5 Significant flora

Desktop searches completed by Ecoscape (2020a, b) identified the presence/potential presence of 33 significant flora species within 5 km of the NVCP Area.

No Commonwealth EPBC Act or Western Australian BC Act-listed Threatened Flora were recorded during the field surveys. Ecoscape (2020b) recorded one DBCA Priority listed species, *Acacia flagelliformis* (Priority 4) during the survey. This record is located approximately 33 m west of the NVCP Area (i.e. outside of the NVCP Area).

A post-survey likelihood of occurrence assessment was conducted by Ecoscape on the significant flora species identified from the desktop searches. This likelihood of occurrence assessment took into account vegetation types conditions, other disturbances, actual habitat availability and survey effort. With the exception of *Acacia flagelliformis* which was recorded during the survey, all other significant flora were considered unlikely or highly unlikely to occur (Ecoscape 2020a, b).

3.4 Fauna

3.4.1 Habitats

The NVCP Area contains two fauna habitats, woodland and wetland (Table 3.4, Figure 3.2). It is likely the habitats present within the NVCP Area are well represented in the local and regional area given the extent of vegetation nearby to the NVCP Area.

Table 3.4 Fauna habitats within the NVCP Area

Habitat	Extent (ha)
Wetland	0.01
Woodland	0.65
Cleared	0.30
No survey data	0.18
Total	**1.14**

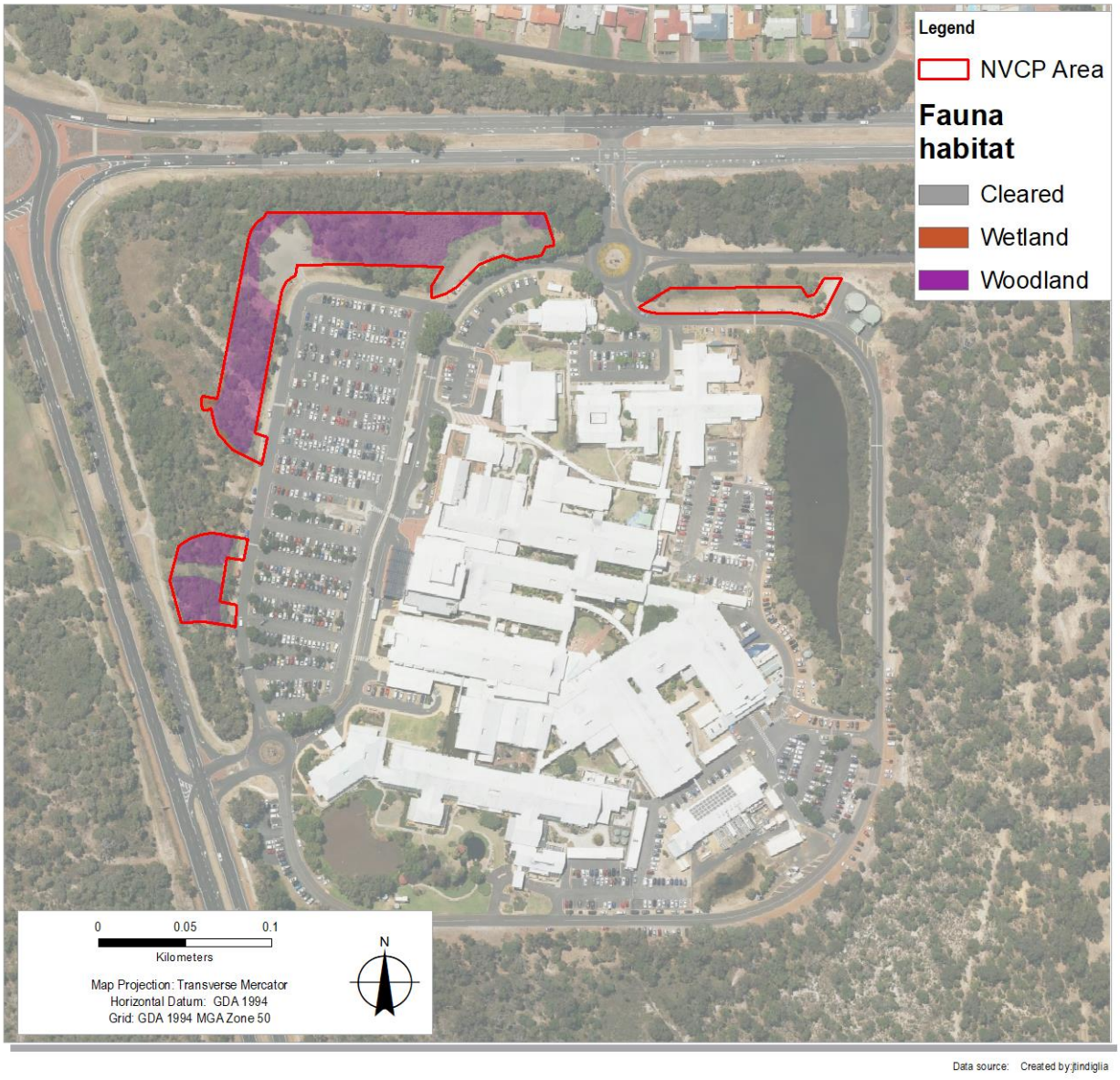

Figure 3.2 Fauna habitat mapped within the NVCP Area

3.4.2 Fauna diversity

The fauna assessment recorded the following observations:

– A single macropod, presumed to be a Western Grey Kangaroo, was present at the site during both day and night. Although not seen, it was frequently heard and scats were observed.
– There was no evidence of Rabbits i.e. no burrows, scats or sightings, although there were frequent 'runways' through the dense understorey that may have been made by this species (or by Rats, Cats or Quenda, although no evidence of the latter species was noted). None were observed grazing on grassed areas.
– No frogs were calling in the drains or wetlands, and no tadpoles observed in standing water.

3.4.3 Significant fauna

Desktop searches completely by Ecoscape reported "ENV Australia (ENV Australia Pty Ltd 2008), during a survey of a larger area, identified Western Ringtail Possum, Southern Brown Bandicoot and Carnaby's Cockatoo as being present (recorded) and the following (identified by the current NatureMap search) as potentially occurring: Chuditch (occasionally), Southern Brush-tailed Phascogale (utilising the area as part of a larger home range), Western Brush Wallaby (rarely), Baudin's Black Cockatoo (probably frequent visitor) and Forest Red-tailed Black Cockatoo (infrequent).

No significant fauna species were observed and no evidence of site use were recorded during the field survey (Ecoscape 2020a, b).

Ecoscape (2020a, b) reported "no Black Cockatoo species were observed during the field survey. No evidence of site use by Black Cockatoo species were recorded, including no feeding debris indicating that any of the three species had been recently present."

Ecoscape (2020a, b) also reported "no Western Ringtail Possum (or any other Possum species) were recorded during a 1-hour spotlight survey of the site during the evening of 15 September. No evidence of site use by any Possum species was observed, including no scratches on tree trunks indicating climbing, no chewed foliage, no scats and no Western Ringtail Possum dreys."

3.4.4 Black cockatoo habitat assessment

Breeding habitat

The NVCP Area is located within the breeding range of Carnaby's Cockatoo and Baudin's Cockatoo, and within the modelled distribution of Forest Red-tailed Black Cockatoo (DSEWPaC 2012).

Twenty-seven (27) potential Black Cockatoo habitat trees occur within the NVCP Area (Figure 3.3). All trees are Marri (*Corymbia calophylla*) and were categorized as Class 5. A Class 5 tree lack hollows or broken branches and as such are not suitable for breeding at this stage. However, they are of sufficient size to potentially develop suitable hollows in the future (Ecoscape 2020a, b).

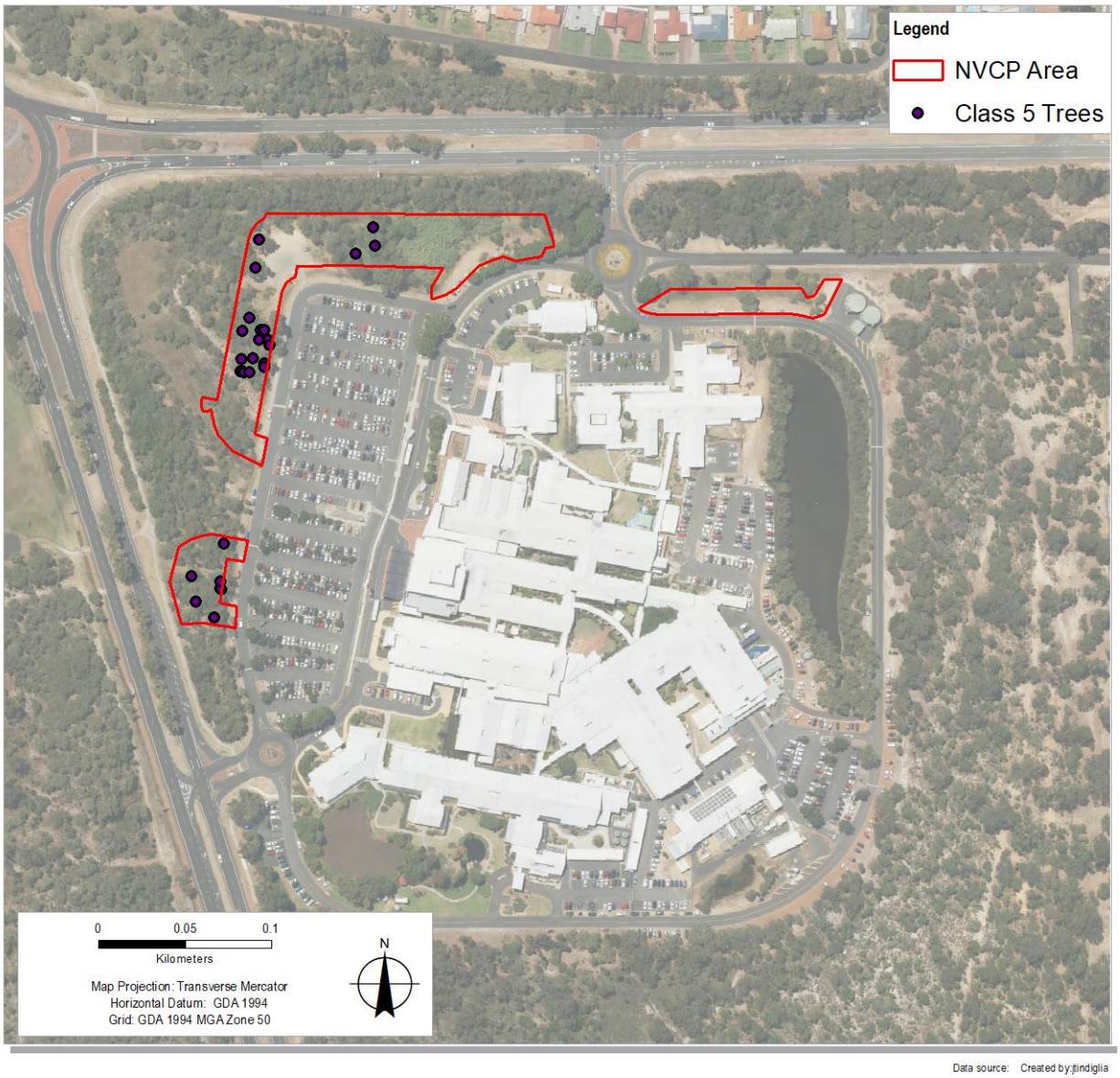

Figure 3.3 Potential black cockatoo habitat trees within the NVCP Area

Foraging habitat

Ecoscape (2020a, b) assessed the foraging habitat for quality using the scoring tool in the Revised draft referral guideline (Commonwealth of Australia 2017). Based on Ecoscape (2020a, b) Carnaby's and Baudin's Cockatoos returned a score of 11 which, according to the Revised draft referral guideline (Commonwealth of Australia 2017), represents Very high quality habitat. Forest Red-tailed Black Cockatoo returned a score of 8 which represents High quality habitat. Foraging habitat likely aligns with the woodland habitat mapped within the NVCP Area.

4. Assessment against the 10 Clearing Principles

Schedule 5 of the EP Act defines Ten Clearing Principles for native vegetation. These principles aim to ensure that all potential impacts resulting from removal of native vegetation can be assessed in an integrated way. Clearing required for construction of this project has been assessed against the Ten Clearing Principles, in accordance with the DWER's *A Guide to the Assessment of Applications to Clear Native Vegetation* (Department of Environment Regulation 2014) to determine whether the application is at variance.

The assessment indicates that the proposed clearing for the project is at variance to Principle (f), maybe at variance to Principle (b) and unlikely or not at variance to the remaining Principles.

Table 4.1 Assessment against the 10 Clearing Principles

Principle	Assessment
(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.	The project requires the clearing of 0.66 ha of native vegetation within a NVCP Area of 1.14 ha. The areas of native vegetation are predominately in Degraded and Completely Degraded condition (Ecoscape 2020a, b). Desktop searches identified the presence/potential presence of six Threatened or Priority Ecological Communities (TECs/PECs) within 5 km of the NVCP Area. None of these TECs/PECs occur within the NVCP Area. Ecoscape's floristic analysis indicates that vegetation type MpAlBj shows some floristic similarity with Floristic Community Type 21c Low-lying Banksia attenuata woodlands or shrublands, which is listed as a Priority 3 PEC by DBCA. There is 0.01 ha of MpAlBj in Good condition within the NVCP Area; this vegetation is considered representative of the Low-lying Banksia attenuata woodlands or shrublands PEC. It is noted that this vegetation does not meet the patch size and condition thresholds to be considered the representative of the Banksia Woodlands of the Swan Coastal Plain TEC which is listed as Endangered under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Vegetation type MpBj corresponds with the core wetland area identified in the wetland evaluation (GHD 2020). Within the NVCP Area, vegetation representative of MpBj occurs is degraded in condition. Desktop searches completed by Ecoscape (2020a, b) identified the presence/potential presence of 33 significant flora species within 5 km of the NVCP Area. No Commonwealth EPBC Act or Western Australian BC Act-listed Threatened Flora were recorded during the field surveys. Ecoscape (2020b) recorded one DBCA Priority listed species, *Acacia flagelliformis* (Priority 4) during the survey. This record is located approximately 33 m west of the NVCP Area (i.e. outside of the NVCP Area). The NVCP Area contains two fauna habitats, woodland and wetland. It is likely the habitats present within the NVCP Area are well represented in the local and regional area given the extent of vegetation nearby to the NVCP Area. No significant fauna species were observed and no evidence of site use were recorded during the field survey (Ecoscape 2020a, b). The NVCP Area is approximately 1.9 km from mapped south west regional ecological linkage. The NVCP Area is separated from nearby bushland and wetlands by a major road (four lane Bussell Highway) to the west and Bunbury Hospital carpark and road infrastructure to the south. The NVCP Area contains native vegetation and likely to result as a fragmented ecological linkage. Ecoscape (2020a, b) considered the survey area (and therefore the NVCP Area) may be locally significant due to its connection with other wetlands in the local area including within Hay Park to the west. The NVCP Area is unlikely to comprise greater biological diversity than the surrounding areas, especially given the NVCP Area is located near bushland and wetlands within Hay Park to the west. Clearing for the project is not likely to be at variance to this Principle.
(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	The NVCP Area contains two fauna habitats, woodland and wetland It is likely the habitats present within the NVCP Area are well represented in the local and regional area given the extent of vegetation nearby to the NVCP Area. Desktop searches completely by Ecoscape reported "ENV Australia (ENV Australia Pty Ltd 2008), during a survey of a larger area, identified Western Ringtail Possum, Southern Brown Bandicoot and Carnaby's Cockatoo as being present (recorded) and the following (identified by the current NatureMap search) as potentially occurring: Chuditch (occasionally), Southern Brush-tailed Phascogale (utilising the area as part of a larger home range), Western Brush Wallaby (rarely), Baudin's Black Cockatoo (probably frequent visitor) and Forest Red-tailed Black Cockatoo (infrequent). No significant fauna species were observed and no evidence of site use were recorded during the field survey (Ecoscape 2020a, b). Ecoscape (2020a, b) reported "no Black Cockatoo species were observed during the field survey. No evidence of site use by Black Cockatoo species were recorded, including no feeding debris indicating that any of the three species had been recently present." Ecoscape (2020a, b) also reported "no Western Ringtail Possum (or any other Possum species) were recorded during a 1-hour spotlight survey of the site during the evening of 15 September. No evidence of site use by any Possum species was observed, including no scratches on tree trunks indicating climbing, no chewed foliage, no scats and no Western Ringtail Possum dreys."

Principle	Assessment
	The NVCP Area is located within the breeding range of Carnaby's Cockatoo and Baudin's Cockatoo, and within the modelled distribution of Forest Red-tailed Black Cockatoo (DSEWPaC 2012). Twenty-seven (27) potential Black Cockatoo habitat trees occur within the NVCP Area (Figure 2). All trees are Marri (Corymbia calophylla) and were categorized as Class 5. A Class 5 tree lack hollows or broken branches and as such are not suitable for breeding at this stage. However, they are of sufficient size to potentially develop suitable hollows in the future (Ecoscape 2020a, b). Ecoscape (2020a, b) assessed the foraging habitat for quality using the scoring tool in the Revised draft referral guideline (Commonwealth of Australia 2017). Based on Ecoscape (2020a, b) Carnaby's and Baudin's Cockatoos returned a score of 11 which, according to the Revised draft referral guideline (Commonwealth of Australia 2017), represents Very high quality habitat. Forest Red-tailed Black Cockatoo returned a score of 8 which represents High quality habitat. Foraging habitat likely aligns with the woodland habitat mapped within the NVCP Area. The NVCP Area may provide some habitat value for fauna, including for significant species. The proposed clearing may be at variance with this Principle.
(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	Desktop searches identified the presence/potential presence of 19 Threatened flora species within 5 km of the NVCP Area. None of these records occur in the NVCP Area. No Threatened Flora were recorded during the field surveys. A post-survey likelihood of occurrence assessment was conducted by Ecoscape on the significant flora species identified from the desktop searches. This likelihood of occurrence assessment took into account vegetation types conditions, other disturbances, actual habitat availability and survey effort. All Threatened Flora were considered unlikely to occur. The proposed clearing is not likely to be at variance to this Principle.
(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.	Desktop searches identified the presence/potential presence of six Threatened Ecological Communities (TECs) within 5 km of the NVCP Area. No TECs occur within the NVCP Area. Based on the above, the proposed clearing is not at variance to this Principle.
(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.	Regional vegetation complex mapping has been completed by Heddle *at al.* (1980) with updates from Webb *et al*. (2016) based on major landform boundaries on the Swan Coastal Plain (SCP) and forested region of south-west Western Australia. The mapping indicates one vegetation complex is present within the project footprint: Yoongarillup Complex: Consists of Woodland to tall woodland of *Eucalyptus gomphocephala* (Tuart) with *Agonis flexuosa* in the second storey. Less consistently an open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri). South of Bunbury is characterized by *Eucalyptus rudis* (Flooded Gum)-Melaleuca species open forests. GoWA (2021b) has assessed the vegetation complexes mapped by Heddle *et al.* (1980) and Webb *et al*. (2016) against presumed pre-European extents within the SCP bioregion and LGA. The current extent of the Yoongarillup complex within the NVCP Area is above 30% of its pre-European extent within the SCP bioregion but below 30% within the City of Bunbury. The clearing of up to 0.1 ha within the DE would result in <0.01% loss of this complex within the SCP bioregion. he project is not likely to be at variance to this principle.
(f) Native vegetation should not be cleared	The NVCP Area is located within a palusplain wetland (UFI 15,492), which is mapped as large Multiple Use wetland in the Geomorphic Wetlands Swan Coastal Plain dataset (Hill et al. 1995). A wetland evaluation completed by GHD in 2020, concluded that while the wetland area located within

Principle	Assessment
if it is growing in, or in association with, an environment associated with a watercourse or wetland.	Lot 3000 Bussell Highway, Bunbury has had significant modification to hydrological function due to land use and site drainage, the core wetland area exhibits wetland characteristics. Based on this assessment it was considered that the central core of the wetland is representative of a Resource Enhancement wetland (GHD 2020). The NVCP Area contains 0.13 ha of native vegetation that grows in association with the core wetland area (represented by MpBj and MpAlBj). Based on the above, the proposed clearing is at variance to this principle.
(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	The NVCP Area is located within the Perth Coastal Zone of the Swan Province (Schoknecht et al. 2004). Soil landscape mapping indicates the NVCP Area occurs within the Spearwood Dune system on a flat to gently undulating sandplain with deep yellow-brown or dark brown siliceous sands that are seasonally inundated (Spearwood S4c Phase; Government of Western Australia (GoWA) 2021). As part of a wetland evaluation completed by GHD in 2020, six soil augers were sampled to the west of the existing carpark area, within and adjacent to the NVCP Area. The soil assessment identified the presence of surficial organic soils underlain by sands at one location (HA1). Sands were present at the remaining locations (HA2, HA3, HA5, HA6) and sand fill within a perimeter bund (HA4) (GHD 2020). A review of acid sulfate soils (ASS) risk mapping indicates that the NVCP Area is located within an area that has a moderate to low risk of ASS occurring within 3 m of natural soil surface (GoWA 2021). Given the small extent of clearing and existing condition of the vegetation, the clearing is unlikely to cause appreciable land degradation. The proposed clearing is not likely to be at variance to this Principle.
(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.	No conservations areas occur within or intersect the NVCP Area (GoWA, 2021). The proposed clearing is not expected to impact on the values of any conservation areas. The proposed clearing is not at variance to this Principle.
(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	The NVCP Area is located in the Bunbury Groundwater Area proclaimed under the RIWI Act (GoWA 2021). The NVCP Area is located within the Bunbury Water Reserve Public Drinking Water Source Area, which is listed as Priority 3 under the *Country Areas Water Supply Act 1947*. There are no wetlands of national or international importance (Ramsar) within the NVCP Area. The NVCP Area is located within a palusplain wetland (UFI 15,492), which is mapped as large Multiple Use wetland in the Geomorphic Wetlands Swan Coastal Plain dataset (Hill et al. 1995). A wetland evaluation completed by GHD in 2020, concluded that while the wetland area located within Lot 3000 Bussell Highway, Bunbury has had significant modification to hydrological function due to land use and site drainage, the core wetland area exhibits wetland characteristics. Based on this assessment it was considered that the central core of the wetland is representative of a Resource Enhancement wetland (GHD 2020). The project requires the clearing of 0.66 ha of native vegetation within a NVCP Area of 1.14 ha. The areas of native vegetation are predominately in Degraded and Completely Degraded condition (Ecoscape 2020a, b). The project includes the installation of drainage infrastructure and is unlikely to cause deterioration in the quality of surface or underground water. Given the relatively small area of native vegetation clearing, is not likely to impact on groundwater quality. Based on the above, the proposed clearing is not likely to be at variance to this principle.

Principle	Assessment
(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.	The NVCP Area is located within a palusplain wetland (UFI 15,492), which is mapped as large Multiple Use wetland in the Geomorphic Wetlands Swan Coastal Plain dataset (Hill et al. 1995). A wetland evaluation completed by GHD in 2020, concluded that while the wetland area located within Lot 3000 Bussell Highway, Bunbury has had significant modification to hydrological function due to land use and site drainage, the core wetland area exhibits wetland characteristics. Based on this assessment it was considered that the central core of the wetland is representative of a Resource Enhancement wetland (GHD 2020). Flooding and waterlogging occurs within the existing wetland. The proposed clearing is unlikely to exacerbate the incidence or intensity of flooding in the wetland. The project includes stormwater management including drainage. The proposed clearing is not likely to be at variance to this principle.

5. References

Commonwealth of Australia 2017, Revised draft referral guideline for three threatened black cockatoo species: Carnaby's Cockatoo, Baudin's Cockatoo and the Forest Red-tailed Black Cockatoo, Commonwealth of Australia, Canberra. Available from: https://www.environment.gov.au/system/files/consultations/1a21997c-5542-4cd6-ace9-561865bbff29/files/draft-revised-referral-guideline-black-cockatoos.pdf.

Department of Agriculture, Water and the Environment (DAWE) 2020, *Environmental Protection and Biodiversity Conservation Act 1999 Protected Matters Search Tool Results*, retrieved December 2020, from http://www.environment.gov.au/epbc/pmst/index.html.

Department of Biodiversity, Conservation and Attractions (DBCA) 2020–, *NatureMap: Mapping Western Australia's Biodiversity*, retrieved December 2020, from http://naturemap.dpaw.wa.gov.au/default.aspx/.

Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) 2012, EPBC Act referral guidelines for three threatened black cockatoo species, Canberra, Australia, Department of Sustainability, Environment, Water, Population and Communities.

Department of Environment Regulation (DER) 2014, A guide to the assessment of applications to clear native vegetation, under Part V Division 2 of the Environmental Protection Act 1986, December 2014.

Ecoscape 2020a, South West Health Campus Environmental Survey Update: North, unpublished report prepared for Silver Thomas Hanley Architecture, December 2020.

Ecoscape 2020b, South West Health Campus Environmental Survey Update: West, unpublished report prepared for Silver Thomas Hanley Architecture, December 2020.

ENV Australia Pty Ltd 2008, Edith Cowan University, South West Campus, Bunbury Fauna Assessment

Environmental Protection Authority (EPA) 2016, Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment, Perth, Environmental Protection Authority.

Environmental Protection Authority (EPA) 2020, Technical Guidance – Fauna Surveys for Environmental Impact Assessment, Perth, Environmental Protection Authority.

GHD 2020, South West Health Campus, Wetland evaluation desktop and site assessment, unpublished letter prepared for the Department of Finance, December 2020.

Government of Western Australia (GoWA) 2021a, *Data WA*, retrieved March 2021, from https://data.wa.gov.au/.

Government of Western Australia (GoWA) 2021b, *2018 South West Vegetation Complex Statistics,* Current as of March 2019, Department of Biodiversity, Conservation and Attractions, retrieved March 2021, from https://data.wa.gov.au/.

Heddle, EM, Loneragan, OW and Havel JJ 1980, *Vegetation Complexes of the Darling System, Western Australia*, in Atlas of Natural Resources, Darling System Western Australia, Department of Conservation and Environment.

Hill, AL, Semeniuk, CA, Seneniuk, V and del Marco, A, 1996, Wetlands of the Swan Coastal Plain, Volume 2: Wetland Mapping, Classification and Evaluation – Wetland Atlas, prepared for the Water and Rivers Commission and the Department of Environmental Protection, Perth, Western Australia.

Schoknecht N, Tille P and Purdie B 1994, Soil-landscape mapping in south western Australia, Overview of Methodology and Outputs, Resource Management Technical Report 280, Department of Agriculture Western Australia.

Webb A, Kinloch J, Keighery G & Pitt G, 2016, The extension of vegetation complex mapping to landform boundaries within the Swan Coastal Plain landform and forested region of south-west Western Australia.

Attachments

Attachment 1

Certificates of Title and Letter of Authority

WESTERN AUSTRALIA

REGISTER NUMBER	
3000/DP43553	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
N/A	**N/A**

VOLUME **LR3136** FOLIO **212**

RECORD OF QUALIFIED CERTIFICATE OF CROWN LAND TITLE

UNDER THE TRANSFER OF LAND ACT 1893
AND THE LAND ADMINISTRATION ACT 1997
NO DUPLICATE CREATED

The undermentioned land is Crown land in the name of the STATE OF WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 3000 ON DEPOSITED PLAN 43553

STATUS ORDER AND PRIMARY INTEREST HOLDER:
(FIRST SCHEDULE)

STATUS ORDER/INTEREST: RESERVE UNDER MANAGEMENT ORDER

PRIMARY INTEREST HOLDER: MINISTER FOR HEALTH OF CARE OF DEPARTMENT OF HEALTH, 189 ROYAL STREET, EAST PERTH

(XE M426708) REGISTERED 9/10/2013

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. J350879 RESERVE 44281 FOR THE PURPOSE OF HEALTH (HOSPITAL AND ALLIED PURPOSES). REGISTERED 6/7/2005.
   - M426708 MANAGEMENT ORDER. CONTAINS CONDITIONS TO BE OBSERVED. WITH POWER TO LEASE FOR ANY TERM. REGISTERED 9/10/2013.
   - O048303 THE CORRECT ADDRESS OF THE PRIMARY INTEREST HOLDER IS NOW OF CARE OF CHIEF EXECUTIVE OFFICER WA COUNTRY HEALTH SERVICE PO BOX 6680 EAST PERTH BUSINESS CENTRE WA 6982 REGISTERED 10/12/2018.
2. I210213 LEASE TO SOUTH WEST HEALTH BOARD OF 189 ROYAL STREET, EAST PERTH EXPIRES: SEE LEASE. AS TO PORTION ONLY. REGISTERED 20/8/2002.
3. I210214 LEASE TO ST JOHN OF GOD HEALTH CARE INC OF GROUND FLOOR 12 KINGS PARK RD WEST PERTH WA 6005 EXPIRES: SEE LEASE. AS TO PORTION ONLY. REGISTERED 20/8/2002.
   - O189980 EXTENSION OF LEASE I210214. REGISTERED 9/7/2019.
4. O048303 LEASE TO ST JOHN OF GOD HEALTH CARE INC OF GROUND FLOOR 12 KINGS PARK RD, WEST PERTH WA 6005 EXPIRES: SEE LEASE. AS TO PORTION ONLY REGISTERED 10/12/2018.
   - O189979 EXTENSION OF LEASE O048303. REGISTERED 9/7/2019.

Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.
(2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.

END OF PAGE 1 - CONTINUED OVER

(3) The interests etc. shown hereon may have a different priority than shown.

----------END OF CERTIFICATE OF CROWN LAND TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	DP43553
PREVIOUS TITLE:	LR3106-491
PROPERTY STREET ADDRESS:	LOT 3000 BUSSELL HWY, COLLEGE GROVE.
LOCAL GOVERNMENT AUTHORITY:	CITY OF BUNBURY
RESPONSIBLE AGENCY:	DEPARTMENT OF HEALTH

NOTE 1: M426707 CORRESPONDENCE FILE 00702-1996-04RO

WESTERN AUSTRALIA

REGISTER NUMBER	
555/DP76310	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
N/A	**16/12/2019**

VOLUME **LR3171** FOLIO **256**

RECORD OF QUALIFIED CERTIFICATE OF CROWN LAND TITLE

UNDER THE TRANSFER OF LAND ACT 1893
AND THE LAND ADMINISTRATION ACT 1997
NO DUPLICATE CREATED

The undermentioned land is Crown land in the name of the STATE OF WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.

BGRoberts
REGISTRAR OF TITLES

REGISTRAR OF TITLES WESTERN AUSTRALIA

LAND DESCRIPTION:

LOT 555 ON DEPOSITED PLAN 76310

STATUS ORDER AND PRIMARY INTEREST HOLDER:
(FIRST SCHEDULE)

STATUS ORDER/INTEREST: RESERVE UNDER MANAGEMENT ORDER

PRIMARY INTEREST HOLDER: MINISTER FOR HEALTH OF CARE OF DEPARTMENT OF HEALTH, 189 ROYAL STREET, EAST PERTH

(XE M426708) REGISTERED 9/10/2013

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. O281392 RESERVE 44281 FOR THE PURPOSE OF HEALTH (HOSPITAL AND ALLIED PURPOSES). REGISTERED 15/11/2019.
   - M426708 MANAGEMENT ORDER. CONTAINS CONDITIONS TO BE OBSERVED. WITH POWER TO LEASE FOR ANY TERM. REGISTERED 9/10/2013.
   - O048303 THE CORRECT ADDRESS OF THE PRIMARY INTEREST HOLDER IS NOW OF CARE OF CHIEF EXECUTIVE OFFICER WA COUNTRY HEALTH SERVICE PO BOX 6680 EAST PERTH BUSINESS CENTRE WA 6982 REGISTERED 10/12/2018.
2. O281395 EASEMENT TO ELECTRICITY NETWORKS CORPORATION FOR ELECTRICITY NETWORK PURPOSES. SEE DEPOSITED PLAN 76310. REGISTERED 15/11/2019.
3. O281396 EASEMENT TO ATCO GAS AUSTRALIA PTY LTD FOR GAS PIPELINE PURPOSES. SEE DEPOSITED PLAN 76310. REGISTERED 15/11/2019.

Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required. Lot as described in the land description may be a lot or location.
(2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.
(3) The interests etc. shown hereon may have a different priority than shown.

----------END OF CERTIFICATE OF CROWN LAND TITLE----------

STATEMENTS:

END OF PAGE 1 - CONTINUED OVER

SKETCH OF LAND:	DP76310
PREVIOUS TITLE:	LR3171-256
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY:	CITY OF BUNBURY
RESPONSIBLE AGENCY:	DEPARTMENT OF HEALTH

NOTE 1: O281392 CORRESPONDENCE FILE 00702-1996-01RO

Government of **Western Australia**
Department of **Health**

Our Ref: *F-AA-69311-91*
Contact: Megan Hathaway 9222 4360, Megan.Hathaway@health.wa.gov.au

Kelsey Hunt
Senior Environmental Scientist
GHD
999 Hay Street
PERTH WA 6000

Via email: Kelsey.Hunt@ghd.com

Dear Ms Hunt

LETTER OF AUTHORITY – CLEARING PERMIT
SOUTH WEST HEALTH CAMPUS
LOTS 555 AND 3000 BUSSELL HIGHWAY, BUNBURY, RESERVE 44281

In accordance with Section 15 of the *Health Services Act 2016*, I hereby state that I am the applicant as delegate of the Minister for Health that has authority to clear on the above land and give land access permission.

Yours sincerely

Dr D J Russell-Weisz
DIRECTOR GENERAL

26 May 2021

189 Royal Street East Perth Western Australia 6004
Telephone (08) 9222 4222 TTY 133 677
PO Box 8172 Perth Business Centre Western Australia 6849
ABN 28 684 750 332
www.health.wa.gov.au

ghd.com

The Power of Commitment