GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 9822/1
Permit Holder:	Sanpro Construction Pty Ltd
Duration of Permit:	From 24 October 2022 to 24 October 2029

The permit holder is authorised to clear *native vegetation* subject to the following conditions of this permit.

PART I – CLEARING AUTHORISED

1. Clearing authorised (purpose)

The permit holder is authorised to clear *native vegetation* for the purpose of creating a temporary access track.

2. Land on which clearing is to be done

Lot 9693 on Plan 214205, Duncraig

Hepburn Avenue Road Reserve (PIN 11494313), Duncraig

3. Clearing authorised

The permit holder must not clear more than 0.12 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

4. Period within which clearing is authorised

The permit holder must not clear any *native vegetation* after 24 October 2027

PART II – MANAGEMENT CONDITIONS

5. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

(a) avoid the clearing of *native vegetation*;

(b) minimise the amount of *native vegetation* to be cleared;

(c) retain larger trees in the application area; and

(d) reduce the impact of clearing on any environmental value.

6. Weed and dieback management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds* and *dieback*:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(b) ensure that no known *dieback* or *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and

(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

7. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner in the direction of the adjacent vegetation to allow fauna to move into adjacent *native vegetation* ahead of the clearing activity.

8. Revegetation and rehabilitation (temporary works)

The permit holder must *revegetate* and *rehabilitate* areas cleared for a temporary access track with *local provenance* species within six months of the area no longer being required for the purpose for which it was cleared, unless the *CEO*, in writing, advises the permit holder to the contrary.

PART III - RECORD KEEPING AND REPORTING

9. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	(a) the species composition, structure, and density of the cleared area; (b) the location of larger trees retained in accordance with condition 5(c) using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994/2020 (GDA94/2020), expressing the geographical coordinates in Eastings and Northings; (c) location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994/2020 (GDA94/2020), expressing the geographical coordinates in Eastings and

No.	Relevant matter	Specifications
		Northings; (d) the date that the area was cleared; (e) the size of the area cleared (in hectares); and (f) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 5; (g) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 6; and (h) actions taken in accordance with condition 7.
2.	In relation to *revegetation* and *rehabilitation* pursuant to condition 8	(a) the date that the project concluded; (b) the date(s) on which the planting was undertaken; (c) the boundaries of the area *revegetated* (recorded digitally as a shapefile); (d) a description of the *revegetation* activities undertaken; (e) the species composition and planting density within the *revegetation* area

10. Reporting

The permit holder must provide to the *CEO* the records required under condition 9 of this permit when requested by the *CEO*.

DEFINITIONS

In this permit, the terms in Table 2 have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*.
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
fill	means material used to increase the ground level, or to fill a depression.
dieback	means the effect of *Phytophthora* species on native vegetation.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	*Environmental Protection Act 1986* (WA)

Term	Definition
local provenance	means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
rehabilitate	means actively managing an area containing native vegetation in order to improve the ecological function of that area.
revegetate	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
weeds	means any plant – (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS

Meenu Vitarana
A/MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

30 September 2022

Schedule 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).

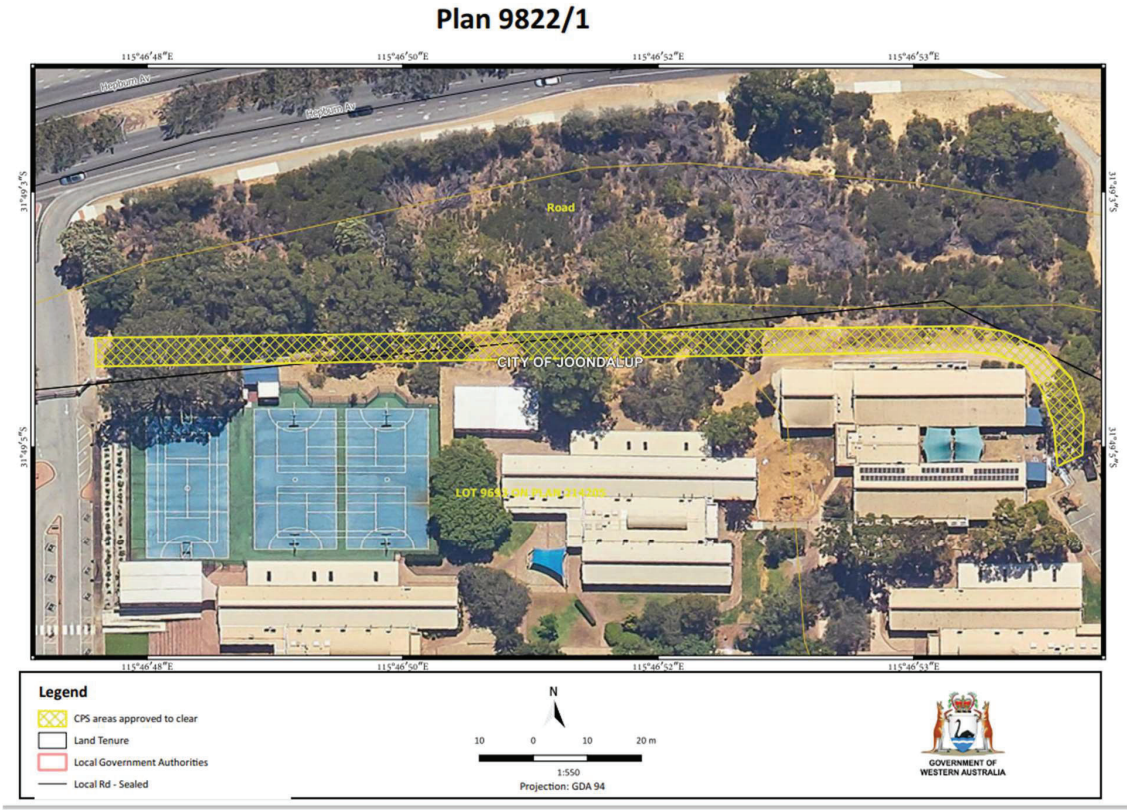


Figure 1: Map of the boundary of the area within which clearing may occur

Government of Western Australia
Department of Water and Environmental Regulation

Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9822/1
Permit type:	Purpose permit
Applicant name:	Sanpro Construction Pty Ltd
Application received:	26 July 2022
Application area:	0.12 hectares (ha) of native vegetation
Purpose of clearing:	Creation of temporary access road
Method of clearing:	Mechanical
Property:	Lot 9693 on Plan 214205, Hepburn Avenue Road Reserve (PIN 11494313)
Location (LGA area/s):	City of Joondalup
Localities (suburb/s):	Duncraig

1.2. Description of clearing activities

The proposal is to clear 0.12 ha of native vegetation consisting of shrubs and weeds within a patch of remnant native vegetation at the corner of Hepburn Avenue and Mitchell Freeway. The proposed clearing is required to create a temporary access track for the construction of school buildings immediately adjacent to the application area. The access road will facilitate the movement of vehicles and heavy equipment outside the perimeter of the school complex. This would avoid exposing the school children and staff to a potential safety hazard.

The application area is within both a Primary Regional Road reserve under the Metropolitan Region Scheme and Private Community Purpose zone under the *City of Joondalup Local Planning Scheme No. 3.*

1.3. Decision on application

Decision:	Granted
Decision date:	30 September 2022
Decision area:	0.12 ha of native vegetation as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed, and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 21 days and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix A), relevant datasets (see Appendix E.1), the clearing principles set out in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments, information provided by the applicant and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer has considered the following as a result of the assessment:

- A portion of the application area occurs in a patch of native vegetation mapped as the Banksia Dominated Woodlands of the Swan Coastal Plain of the IBRA Region (Banksia Woodlands) listed as a Priority 3 Priority Ecological Community (PEC) by the Department of Biodiversity, Conservation and Attractions (DBCA) and an Endangered Threatened Ecological Community (TEC) by the Commonwealth. However, noting the small size of the patch (approximately 0.6 ha) and it's Degraded to Completely Degraded (Keighery, 1994) condition due to weed infestation, it does not meet the condition thresholds to retain sufficient conservation values to be considered a threatened or priority ecological community (Banksia Conservation Advice, EPBC Act Section 266B). The proposed clearing of 0.12 ha of understory vegetation, therefore, is unlikely to have significant impact on the conservation values of the Banksia Woodlands.
- The extent of native vegetation cover in the local area (10 km radius of the application area) is 12 percent whilst the mapped vegetation type retains 23 percent of its original cover. These figures are above the minimum 10 percent representative threshold recommended for a constrained area of the Perth Metropolitan Regional Scheme. The proposed clearing of 0.12 ha of mid and understory vegetation is unlikely to result in the loss of significant remnant vegetation or sever an ecological linkage in the local extent. The loss of this vegetation can be mitigated through the retention of the larger trees and revegetation of the temporary cleared areas at the point at which they are no longer required.
- The application area may contain suitable habitat for conservation significant fauna including Quenda/ Southern brown bandicoot (*Isoodon obesulus subsp fusciventer*) – Priority 4 and Carnaby's black cockatoos (*Zanda latirostris* previously known as *Calyptorhynchus latirostris*) - Endangered. The proposed clearing will not remove any vegetation that is likely to provide significant habitat for Carnaby's cockatoo. To minimise impacts on any Quenda present, a condition has been placed on the permit requiring the clearing activity to be undertaken in a slow, progressive manner to allow the fauna to disperse into the adjacent remnant vegetation.
- The application area is infested by weeds. Clearing could spread weeds and dieback into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values. The likelihood of introduction and spread of weed and dieback can be reduced by applying weed and dieback management measures.
- The sandy soils within the application area are prone to wind erosion. Given the small extent of clearing and the narrow, linear configuration of the application area, it was determined that the proposed clearing is unlikely to result in appreciable land degradation.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to lead to unacceptable risks to conservation significant fauna, flora, ecological linkage and Banksia Woodlands, nor lead to appreciable land degradation. Measures committed to by the applicant to avoid and minimise the impacts and extent of clearing will further reduce the likelihood of impacts on fauna, land degradation and the introduction and spread of weeds and dieback.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing
- retain large trees in the application area
- take hygiene steps to minimise the risk of the introduction and spread of weeds and dieback
- undertake slow, progressive clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity
- revegetate the cleared areas within six months of the temporary access track no longer being required for the construction project.

1.5. Site map

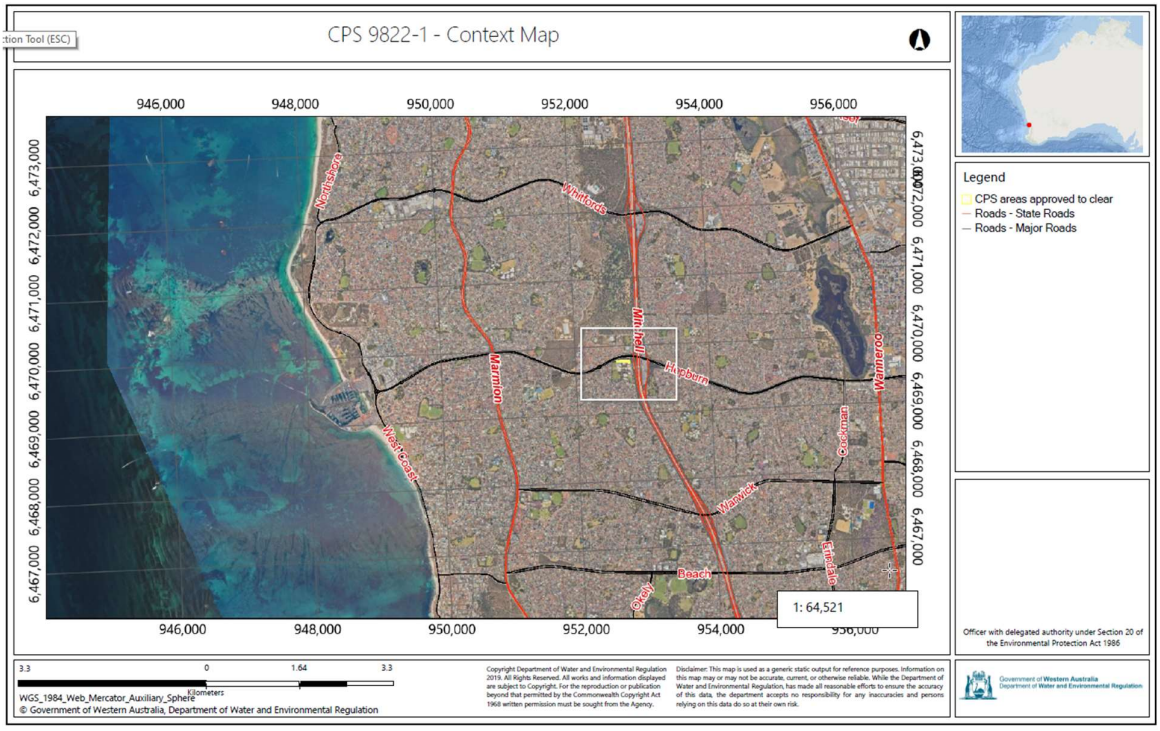


Figure 1. Context map of the application area.

Figure 2. Map of the application area

The area cross-hatched yellow indicates the area authorised to be cleared under the granted clearing permit.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Planning and Development Act 2005* (WA) (P&D Act)
- *Soil and Land Conservation Act 1945* (WA)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant stated that the design and position of the access road was selected to minimise the amount of clearing and avoid the removal of large native trees. There were no alternatives to the proposed location of the access track due to the location of the building within the school and the location of the construction area. The applicant commits to only clear small and medium shrubs and weeds which mostly are non-native species; the larger trees will be retained (see Figure 3). In addition, the applicant commits to hydro-mulch and revegetate the disturbed area at the completion of the project to reduce the likelihood of land degradation as an impact of the clearing.

The Delegated Officer was satisfied that the applicant has undertaken reasonable measures to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix B) identified that the clearing may pose risks to the environmental values of flora and a threatened ecological community (principles (a) and (d)), fauna (principle (b)), remnant native vegetation (principle (e)) and land resources (principle (g)). The detailed consideration and assessment of the clearing impacts against the specific environmental values is provided below in Sections 3.2.1., 3.2.2. and 3.2.2. respectively. Where the assessment found that the clearing presents a risk to environmental values, conditions intended to control and/or ameliorate the impacts have been imposed under sections 51H and 51I of the EP Act. These are also identified below.

3.2.1. Significant remnant vegetation - Flora – Clearing principle (a), (d) and (e)

Assessment:

The proposed clearing area is located within roadside vegetation and comprises of scattered Eucalyptus trees with tall mixed shrubs over non-native grass and weeds. The vegetation is in Completely Degraded to Degraded condition (Keighery, 1994). The vegetation is a part of a fragmented patch of native vegetation in a largely developed urban area.

The application area intersects a small patch of remnant native vegetation mapped as the state listed Banksia Dominated Woodlands of the Swan Coastal Plain Priority Ecological Community (PEC). The PEC is synonymous with the Commonwealth-listed Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community

(TEC). The Banksia woodlands of the Swan Coastal Plain are protected for they are floristically diverse and provide a range of cross-scale ecological functions in the landscape (Threatened Species Scientific Committee 2016).

The patch of native vegetation mapped as the TEC measures approximately 0.6 ha. Photographs provided by the applicant and aerial imagery of the application area indicate that the vegetation within the application area and the mapped TEC is at least in degraded condition according to the rating scales provided by both Keighery (1994) and the Banksia Conservation Advice (EPBC Act Section 266B). Although a few stands of Eucalyptus trees remain, the understory of this patch is dominated by non-native weeds (See Figure 3) that would be unlikely to provide habitats to other flora. As such, the patch of vegetation is unlikely to comprise a high level of biodiversity. Noting the patch size of only 0.6 ha and its Completely Degraded to Degraded condition, this patch does not meet the condition thresholds to retain sufficient conservation values to be considered a 'Matter of National Environmental Significance' set out by the Banksia Conservation Advice (EPBC Act Section 266B). The proposed clearing is therefore unlikely to have impact on the biodiversity and conservational value of the Banksia Woodlands.

Several conservation significant flora species have been recorded from the local area. Two of these, *Jacksonia sericea* (P4) and *Eucalyptus foecunda* (P4), have been found in the same mapped soil and vegetation types to that of the application area. *Jacksonia sericea* had been previously found in disturbed habitat, but it is often threatened by weeds. The infestation of weeds within the application reduces the likelihood that this species would be present within the application area. *Eucalyptus foecunda* is a dense mallee up to 4 m high often associated with woodlands of *Eucalyptus sp* and *Agonis flexuosa*. Observation of the photographs of the vegetation provided by the applicant does not indicate the presence of *Eucalyptus foecunda*. the Degraded condition and the infestation of non-native weeds of the vegetation patch in the application is unlikely to support this species. Given the above, the proposed clearing is unlikely to impact on the habitat or conservation values of conservation significant flora species.

Within the local area, there are also patches of native vegetation mapped as the Banksia Dominated Woodlands TEC and Tuart Woodlands and forests of the Swan Coastal Plain TEC. The total area of these mapped TECs is 2,390 hectares. Some of these mapped TECs are in the vicinity of the application area. Noting the presence of weeds in the application area, clearing is likely to introduce and spread weeds and dieback into the adjacent patches of TEC and remnant native vegetation. The likelihood for weeds and dieback to spread into adjacent areas can be reduced by the application of weed and dieback management conditions.

The extent of native vegetation cover in the local area is 12 percent whilst the mapped vegetation type retains 23 percent of its original cover. Although these figures remain above the minimum 10 percent representative threshold recommended for a constrained area of the Perth Metropolitan Regional Scheme (EPA, 2008), any clearing in the area may contribute to the further loss of remnant native vegetation in the local area. In addition, despite its Degraded condition, the patch of vegetation within which the proposed clearing is located comprises the roadside vegetation along the Mitchell Freeway. The roadside vegetation provides steppingstones for fauna dispersal between the fragmented vegetation in the local area. Noting the small size and narrow shape of clearing area along an edge of a vegetation patch, the proposed clearing of shrubs and weeds is unlikely to sever the linkage between the vegetation patches in the local context. However, given the above, it is important to ensure that the larger stands of trees are retained to maintain the canopy continuity to facilitate fauna movement in the region. Retention of the larger trees will also support the conservation of black cockatoos in the region, discussed in Section 3.2.2 below. Revegetation of the cleared area with local provenance species will further mitigate the loss of remnant vegetation.

Conclusion:
Based on the above assessment, the proposed clearing is unlikely to have significant impacts on the biodiversity and conservation value of the mapped Banksia Woodlands, or impacts on ecological linkage function in the local area context. The proposed clearing, however, may introduce and spread weeds and dieback into the neighbouring remnant vegetation. Potential impacts of the temporary clearing on the adjacent areas of remnant vegetation can be mitigated by the retention of large trees and revegetation of the cleared areas.

Condition:
To address the above impacts, the following conditions are imposed on the permit:

- weeds and dieback management measures
- retention of large trees
- revegetation of the cleared areas within six months of the temporary access track no longer being required.

3.2.2. Fauna – Clearing Principle (b)

Assessment:
There is no record of conservation significant fauna within the application area. However, desktop analysis indicates that 50 conservation significant fauna species have been recorded from within 10 km radius of the proposed clearing area. Given its proximity to the coastline, more than 60 percent of the listed fauna species are migratory and marine species. The recorded migratory birds include *Apus pacifus* (Forktail swift) – OS and *Falco peregrinus* (Peregrine Falcon) – OS that can be found across a range of habitat, from inland open plains to wooded areas. They require abundant prey and secure nest sites, including coastal and inland cliffs or woodland near water (Commonwealth of Australia, 2015). The application area does not have these specific characteristics for the birds' nesting. Given the above, it is considered that whilst the migratory birds may visit and utilise the vegetation in the application area and adjacent remnant vegetation, the fragmented and Degraded vegetation is unlikely to comprise significant habitats for these migratory species. The proposed clearing, therefore, is unlikely to impact the habitat value for these migratory birds.

Several of the records are historical or of fauna species commonly found in wetlands or lake habitats. These fauna species include *Dasyurus geoffroii* (chuditch, western quoll, recorded in 1974), *Notamacropus irma* (Western brush wallaby, recorded from approximately 4 km), *Phascogale tapoatafa wambenger* (south-western brush-tailed phascogale, wambenger; recorded in 1974) and *Oxyura australis* (Blue-billed duck, recorded in 2013 from Lake Goollelal and Lake Joondalup). Given the historical nature of the records, the vegetation condition and its location within a heavily modified urban landscape away from waterbodies, it is unlikely that the species would inhabit the proposed clearing area.

Of all fauna species recorded within the local area, *Isoodon fusciventer* (Quenda/ southern brown bandicoot) and *Zanda latirostris* – previously known as *Calyptorhynchus latirostris* (Carnaby's black cockatoo) are the most likely to occur or utilise the area. These species were also the most recently recorded which are nearest to the application area.

On the Swan Coastal Plain, quenda is often associated with wetlands and feeds in adjacent forest and woodland. In the local area, most of the quenda records are from Lake Goollelal and Lake Joondalup, approximately three km east and northeast of the application area. Quenda also prefers shrub cover with high vegetation density and often avoid grasses (Watson, 2018). Given the distance between the wetlands and the application area, the fragmented vegetation in the local context, the low density of native vegetation and the dominance of weeds in the application area, it is unlikely that the application area would comprise significant habitat for quenda. Clearing is therefore unlikely to have significant impacts on quenda. Any individuals present may be able to disperse into adjacent remnant vegetation. A condition has been imposed on the permit to facilitate the movement of individuals into adjacent native vegetation ahead of the clearing activity.

Black cockatoos, the Carnaby's in particular, had been recorded frequently from the local area. The application area is also within the mapped distribution and foraging area for both Carnaby's and forest red-tailed black cockatoos. Black cockatoo habitat can be considered in terms of breeding habitat, night roosting habitat, and foraging habitat. Black cockatoos will generally forage up to 12 kilometres from an active breeding site. Following breeding, they will flock in search of food, usually within six kilometres of a night roost (DSEWPaC 2012; DPaW 2013) but may range up to 20 kilometres (Commonwealth of Australia 2017). Black cockatoo night roosts are usually located in the tallest trees of an area, and near both a food supply and surface water (Commonwealth of Australia 2017). Flocks will use different night roosts, often for weeks, or until the local food supply is exhausted. Flocks show some fidelity to night roosts with sites used in most years to access high-quality feeding sites. However, not all-night roosts are used in every year (DPaW 2013).

Whilst the application area does not contain confirmed roosting or breeding sites of the Carnaby's black cockatoo, 23 breeding sites comprising of 20 artificial and 3 natural sites are known from within 10 km radius of the application area. Of the known breeding sites, only 13 are active according to the most recent black cockatoo survey (2019). Six of the artificial nests, all of which are inactive, are located within 6 km from the application area. The tuart trees and some banksia in the vegetation patches adjacent to the proposed clearing could provide foraging resources, however, these will not be cleared. In addition, there are larger patches of Tuart and Banksia woodlands in better condition nearby, including the approximately 68 ha of remnant native vegetation protected under the Bush Forever scheme located approximately 500 m north of the application area. The vegetation within the Bush Forever site would provide higher quality foraging habitat for black cockatoos than the vegetation present within the application area. Given the above, the removal of the 0.12 ha of native shrubs and weeds from the area is unlikely to impact on the conservation of Carnaby's cockatoo or impact significant habitat for this species.

Conclusion:
Based on the above assessment, the proposed clearing is unlikely to result in significant impacts on habitat for quenda and Black cockatoos.

Conditions:
To address the above impacts, slow, progressive clearing in the direction of the adjacent vegetation will be required as a condition on the clearing permit. This will facilitate the movement of any fauna present (especially ground dwelling fauna) into adjacent vegetation ahead of the clearing and minimise impact to individuals.

3.2.3. Land and water resources - Clearing Principle (g)

Assessment

The sandy soils within the application area are mapped as having a high land degradation risk due to wind erosion. The strong afternoon wind typical of the area could increase the likelihood of land degradation on cleared areas due to wind erosion. However, noting the small extent and narrow, linear configuration of the clearing which is adjacent to remnant vegetation, the proposed clearing is unlikely to cause appreciable land degradation through wind erosion. The applicant's commitment to hydro-mulch the cleared area at the completion of the project will further mitigate this risk.

Conclusion:
Based on the above assessment, the proposed clearing is unlikely to result in appreciable land degradation.

Conditions:
No conditions required.

3.3. Relevant planning instruments and other matters

The proposed clearing area is within both a Primary Regional Road reserve under the Metropolitan Region Scheme and Private Community Purpose zone under the City of Joondalup Local Planning Scheme No. 3.

Being in a Primary Road Reserve, the applicant must obtain an Approval to Undertake Works within the Road Reserve from Main Roads WA (MRWA) prior to works proceeding. The applicant also advised that MRWA would require hydro-mulching and revegetation of the cleared area after the temporary access track is no longer required. The applicant has received the approval undertake works within the State Road reserve by MRWA on 28 September 2022.

City of Joondalup (the City) advised DWER that a Development Approval (DA) under the *Planning and Development Act 2005* was issued in January 2021 for the school building construction project. In their advice, the City provided support for the school construction project. However, the City strongly recommended the retention of larger trees and revegetation of cleared area with local provenance species at the completion of the project.

There are no Aboriginal sites of significance mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is on the edge of a 0.6 ha isolated patch of remnant native vegetation in the intensive land use zone of Western Australia. The patch of native vegetation is part of the roadside vegetation adjacent to the Mitchell Freeway. It is surrounded by urban development including major state roads, residential dwellings and supporting infrastructures. It is immediately adjacent to a school complex which currently subject to a construction project. It is within the Perth Metropolitan Regional Scheme area and is zoned as 'urban'. Part of the application area is also zoned "Primary Regional Roads" Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 12 per cent of the original native vegetation cover.
Ecological linkage	The proposed clearing area is situated approximately 600 m outside of the axis of the Gnangara Ecological Linkage / the Perth Regional Ecological Linkage. Whilst situated within the roadside vegetation that would provide a linkage to the movement of fauna along the Mitchell Freeway, the application area does not comprise a significant part of the linkage.
Conservation areas	The application area is not within any conservation area. The closest conservation areas include the Bush Forever area approximately 500m to the north and the Yellagonga National Park approximately 3 km to the east.
Vegetation description	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area consists of larger stands of *Eucalyptus gomphocephala* (tuart) over shrubs of banksia, *Accacia* sp and non-native weeds. Representative photos are available in Appendix D. The proposed clearing, however, will only remove the mid story and understory of the vegetation in the area. Despite its Degraded to Completely Degraded condition (Keighery, 1994), the vegetation is consistent with the mapped vegetation type: • Karrakatta Complex – Central and South vegetation complex, which is described as Predominantly open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri) and woodland of *Eucalyptus marginata* (Jarrah) - Banksia species. The mapped vegetation type retains 23 per cent of the original extent (Government of Western Australia, 2019) respectively.
Vegetation condition	Photographs supplied by the applicant indicate the vegetation within the proposed clearing area is in Completely Degraded to Degraded (Keighery, 1994) condition. The full Keighery (1994) condition rating scale is provided in Appendix C. Representative photos are available in Appendix D.
Climate and landform	The application area lies on relatively flat ground at 25 to 30 m above sea level.
Soil description	The soil is mapped as the Karrakatta Sand Yellow Phase characterised by low hilly to gently undulating terrain, yellow sand over limestone at 1-2 m, Banksia spp. woodland with scattered emergent *E. gomphocephala* and *E. marginata* and a dense shrub layer.
Land degradation risk	Due to the sandy soil formation of the land, the application area is prone to wind erosion, particularly when the groundcover vegetation is removed.
Waterbodies	The desktop assessment and aerial imagery indicate that no watercourses present in the proximity of the application area. The nearest water body is the Lake Goollelal, approximately 3 km to the east.
Hydrogeography	The site is located within a Priority 3 Public Drinking Water Source Area.

Characteristic	Details
Flora	A total of 20 conservation significant flora species have been recorded from within 10 km radius of the application area, but none of these occur within the application area. The nearest record is of *Jacksonia sericea* (Priority 4) located approximately 700 m northwest of the application.
Ecological communities	Part of the application area occur on the edge of a patch of vegetation mapped as the Banksia Dominated Woodlands of the Swan Coastal Plain TEC / PEC. A patch of Tuart Woodlands TEC is mapped 400 metres from the application area.
Fauna	Several conservation significant fauna species have been recorded from within 10 km radius of the application area. Many of these are the migratory birds associated with the coastline which is within a 4 km radius of the application area. The closest record is of *Calidris ferruginea* (Curlew Sandpiper - VU), recorded approximately 700 m from the application area.

A.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Swan Coastal Plain	1.501,209.19	587,889.09	29	195,834.88	33.31
Vegetation complex					
Karrakatta Complex – Central and South	53,080.99	12,467.20	23.49	4,282.72	8.07
Local area					
10km radius	23,574.15	2,791.89	11.84	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

A.3. Flora analysis table

With consideration for the site characteristics set out above and relevant datasets (see Appendix E.1) impacts to the following conservation significant flora have been considered.

Species name	Conservation status	Suitable habitat features ? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Acacia benthamii	2	N	Y	Y	0.76	6	N/A
Amanita carneiphylla	3	N	N	N	4.39	1	N/A
Amanita preissii	3	N	N	N	2.38	3	N/A
Austrostipa mundula	3	N	N	N	6.70	1	N/A
Baeckea sp. Limestone (N. Gibson & M.N. Lyons 1425)	1	N	N	N	3.37	8	N/A
Caladenia huegelii	T	N	N	N	9.16	1	N/A

Species name	Conservation status	Suitable habitat features ? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Conostylis bracteata	3	N	N	N	3.48	5	N/A
Cyathochaeta teretifolia	3	N	N	N	9.16	5	N/A
Dampiera triloba	3	N	N	N	9.14	3	N/A
Drosera patens	1	N	N	N	9.01	5	N/A
Drosera x sidjamesii	1	N	N	N	9.69	7	N/A
Eucalyptus foecunda subsp. foecunda	4	Y	Y	Y	2.86	1	N/A
Grevillea sp. Ocean Reef	1	N	Y	Y	7.66	4	N/A
Jacksonia sericea	4	Y	Y	Y	2.99	15	N/A
Leucopogon maritimus	1	N	N	N	5.79	1	N/A
Marianthus paralius	T	N	N	N	6.91	1	N/A
Pimelea calcicola	3	N	N	N	3.37	5	N/A
Stylidium paludicola	3	N	N	N	6.91	1	N/A
Styphelia filifolia	3	N	N	N	8.64	2	N/A
Thelymitra variegata	2	N	N	N	7.17	1	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

A.4. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Actitis hypoleucos (Common Sandpiper)	EN	N	N	2.83	8	N/A
Apus pacificus (Fork-tailed swift)	OS	Y	Y	1.71	15	N/A
Calidris ferruginea (Curlew Sandpiper)	VU	N	N	0.68	3	N/A
Calidris subminuta (Long-toed Stint)	CD	N	N	4.04	1	N/A
Zanda (previously known as Calyptorhynchus) baudinii (Baudin's cockatoo)	MI	Y	Y	3.98	2	N/A
Zanda (previously known as Calyptorhynchu) latirostris (Carnaby's cockatoo)	EN	Y	Y	8.85	2	N/A
Calyptorhynchus sp. 'white-tailed black cockatoo' (White-tailed black cockatoo)	MI	Y	Y	3.98	50	N/A
Charadrius leschenaultii (Greater sand plover, large sand plover)	P3	N	N	1.51	43	N/A
Chlidonias leucopterus (White-winged black tern, white-winged tern)	MI	N	N	3.98	4	N/A
*Dasyurus geoffroi*i (chuditch, western quoll)	EN	N	Y	1.50	37	N/A
Hydroprogne caspia (Caspian Tern)	EN	N	N	0.82	881	N/A

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Ixobrychus dubius (Australian little bittern)	MI	N	N	8.27	1	N/A
Ixobrychus flavicollis australis (southwest subpop.) (black bittern (southwest subpop.))	CR	N	N	3.98	3	N/A
Isoodon fusciventer (Quenda, southwestern brown bandicoot)	P4	Y	Y	2.84	180	N/A
*Macronectes giganteu*s (southern giant petrel)	VU	N	N	5.76	1	N/A
Neelaps calonotos (Black-striped snake, black-striped burrowing snake)	MI	N	N	8.11	7	N/A
Notamacropus irma (Western brush wallaby)	MI	N	Y	3.99	6	N/A
Phascogale tapoatafa wambenger (south-western brush-tailed phascogale, wambenger)	P4	N	Y	2.53	1	N/A
Plegadis falcinellus (Glossy ibis)	P4	N	N	3.05	17	N/A
Procellaria aequinoctialis (white-chinned petrel)	MI	N	N	3.98	8	N/A
Synemon gratiosa (Graceful sunmoth)	MI	N	N	9.45	1	N/A
Thalassarche carteri (Indian yellow-nosed albatross)	MI	N	N	3.98	2	N/A
Thalassarche cauta cauta (shy albatross)	MI	N	N	2.94	63	N/A
Thalasseus bergii (Crested tern)	VU	N	N	8.16	1	N/A
Tringa nebularia (Common greenshank, greenshank)	VU	N	N	6.72	1	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

A.5. Ecological community analysis table

Community name	Conservation status (State)	Conservation status (Commonwealth)	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (m)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Acacia shrublands on taller dunes	Priority 3	NA	N	N	Y	6,635	2	N/A
Banksia attenuata woodlands over species rich dense shrublands (floristic community type 20a as originally described in Gibson et al. (1994))	Endangered	Endangered	N	N	Y	5,043	21	N/A
Banksia Dominated Woodlands of the Swan	Priority 3	Endangered	Y	Y	Y	0	637	N/A

Community name	Conservation status (State)	Conservation status (Commonwealth)	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (m)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Coastal Plain IBRA Region								
Callitris preissii (or *Melaleuca lanceolata*) forests and woodlands, Swan Coastal Plain (floristic community type 30a as originally described in Gibson et al. (1994))	Vulnerable	NA	N	N	Y	2,524	3	NA
Northern Spearwood shrublands and woodlands	Priority 3	NA	N	N	N	6,401	2	NA
Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain	Priority 3	Critically Endangered	Y	Y	Y	400	94	NA
T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority								

A.6. Land degradation risk table

Risk categories	*Land Unit 1*
Wind erosion	H2: >70% of map unit has a high to extreme wind erosion risk
Water erosion	L1: <3% of the map unit has a moderate to high hazard
Salinity	L1: <3% of the map unit has a moderate to high hazard
Subsurface Acidification	L1: <3% of the map unit has a moderate to high hazard
Flood risk	L1: <3% of the map unit has a moderate to high hazard
Water logging	L1: <3% of the map unit has a moderate to high hazard
Phosphorus export risk	L2: 3-10% of the map unit has a high to extreme hazard

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: A portion of the application area intercepts the edge of a patch of remnant native vegetation that is mapped as the Banksia Woodlands of the Swan Coastal Plain' (Priority 3) priority ecological community (PEC). Considering the small size of the patch (0.6 ha), its Degraded condition and location on the roadside surrounded by the urban development, it is unlikely that the patch comprises a high level of biodiversity.	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*

Assessment against the clearing principles	Variance level	Is further consideration required?
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."* Assessment: The area proposed to be cleared does not contain significant habitat for conservation significant fauna. However, it could provide steppingstones for migratory birds in their dispersal between the fragmented vegetation in the local area. The applicant's commitment to retain larger trees would further minimise potential impacts of clearing on habitat values for fauna.	Not likely to be at variance	Yes *Refer to Section 3.2.2, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: Based on the Completely Degraded to Degraded condition of the vegetation and absence of suitable habitat features, the area proposed to be cleared is unlikely to contain habitat for threatened flora species listed under the BC Act.	Not likely to be at variance	No
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."* Assessment: The area proposed to be cleared intersects the edge of a patch of native vegetation mapped as the Banksia Woodlands of the Swan Coastal Plain listed as a Priority 3 Priority Ecological Community (PEC) an Endangered Threated Ecological Community (TEC) by the Commonwealth. However, based on the Conservation advice for Banksia Woodlands TEC, the patch does not have the characteristics of Banksia Woodlands TEC. The small size of the patch and its degraded condition would provide limited buffering capacity to the adjacent occurrence of the mapped TEC.	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*
Environmental value: significant remnant vegetation and conservation areas		
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."* Assessment: The extent of native vegetation in the local area is approximately 12 per cent; whilst the extent of the mapped vegetation type is approximately 23 percent. Whilst these figures are lower than the national objectives and targets for biodiversity conservation in Australia of 30% vegetation cover, they exceed the minimum 10 percent threshold for constrained areas within the Perth Metropolitan Regional Scheme (EPA, 2008).	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*
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."* Assessment: Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.	Not likely to be at variance	No
Environmental value: land and water resources		

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: Given no watercourses or wetlands are recorded within 3 kilometres of the application area, the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.	Not likely to be at variance	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped soils are susceptible to wind erosion. Noting the extent of the application area, the proposed clearing is not likely to have an appreciable impact on land degradation.	Not likely to be at variance	Yes *Refer to Section 3.2.3, above.*
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."* Assessment: The proposed clearing will not intercept any surface or underground water resources, on which basis there will not be any impacts to surface or ground water quality.	Not likely to be at variance	No
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: The small scale of proposed clearing is unlikely to contribute to an increased risk of flooding.	Not likely to be at variance	No

Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

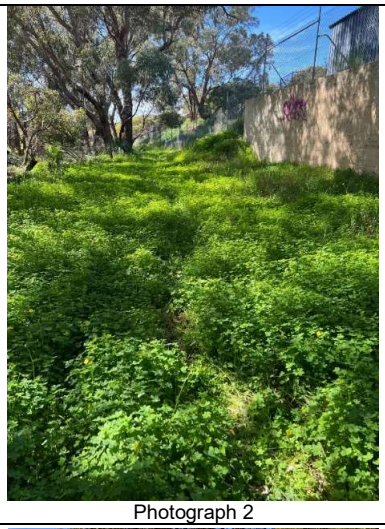
Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.

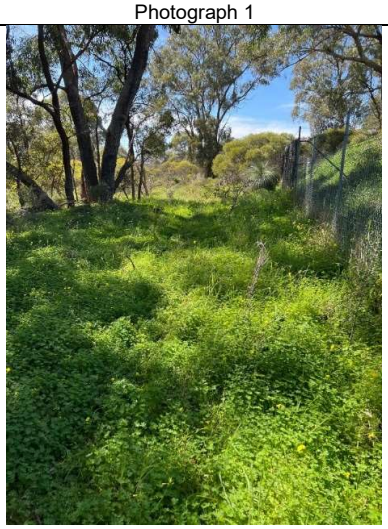
Condition	Description
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Photographs of the vegetation (*Sanpro Constructions Pty Ltd, 2022b*)

Photograph 1

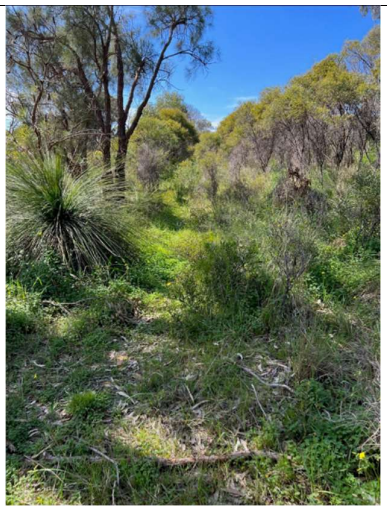


Photograph 2



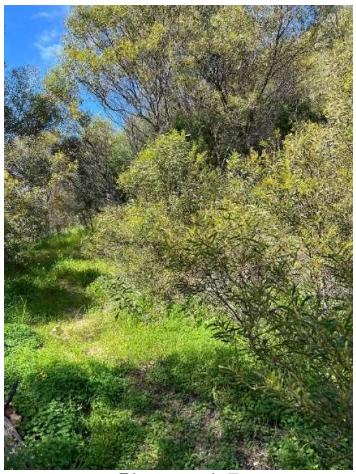
Photograph 3

Photograph 4



Photograph 5

Photograph 6



Photograph 7

Photograph 8

Photograph 9

Photograph 10

Figure 3. Photographs of the vegetation within the proposed clearing area. The larger trees in Photographs 1 to 5, 7 and 8 will be retained. Only the mid-story bushes and weeds will be cleared. Refer to Figure 4 below for the photographs' locations.

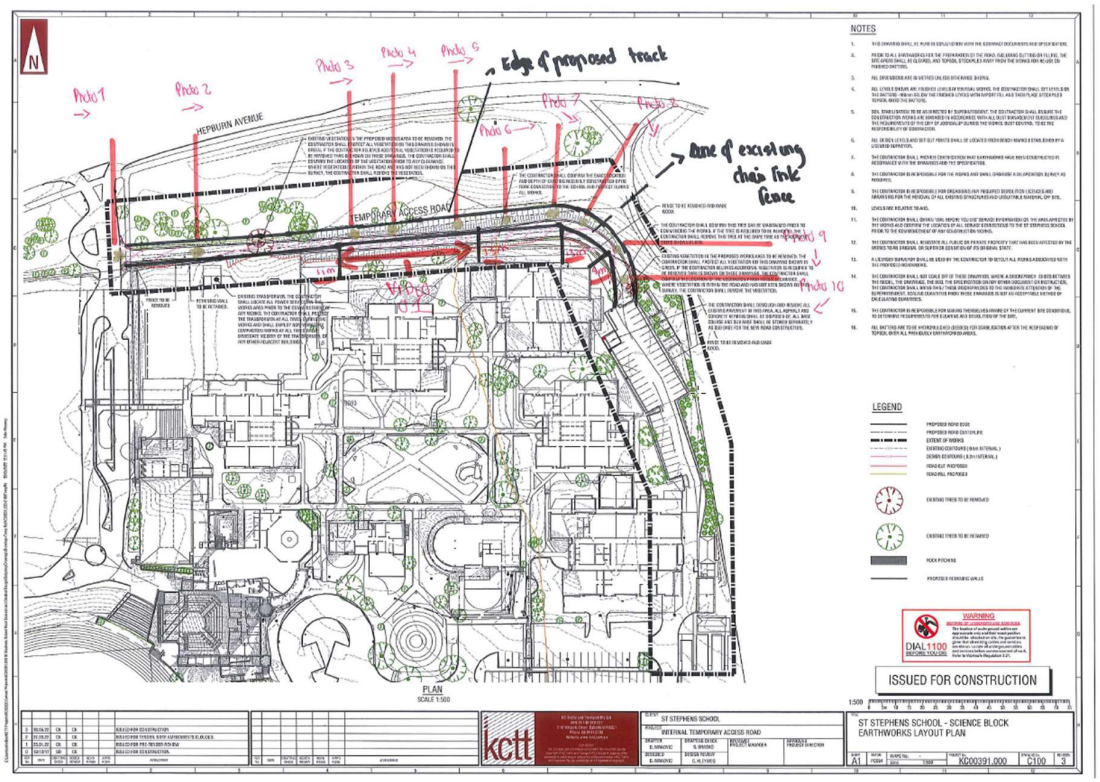


Figure 4. The site plan of the school building project and locations of the corresponding photographs in Figure 3.

Appendix E. Sources of information

E.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)

- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

E.2. References

Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.

Commonwealth of Australia (2015). *Draft referral guideline for 14 birds listed as migratory species under EPBC Act.* September 2015. Canberra

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 (2020). Wildlife Conservation Plan for Seabirds. Department of Agriculture, Water and Environment, Canberra. Available from https://www.dcceew.gov.au/environment/biodiversity/publications/wildlife-conservation-plan-seabirds-2022

Department of Environment Regulation (DER) (2013). *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf.

Department of Primary Industries and Regional Development (DPIRD) (2019). *NRInfo Digital Mapping. Department of Primary Industries and Regional Development.* Government of Western Australia. URL: https://maps.agric.wa.gov.au/nrm-info/ (accessed in August 2022).

Department of Parks and Wildlife (DPAW) (2013) Carnaby's Cockatoo (Calyptorhynchus latirostris) Recovery Plan. Western Australian Department of Parks and Wildlife (Now the Department of Biodiversity, Conservation and Attractions). Perth. Western Australia.

Department of Water and Environmental Regulation (DWER) (2019). *Procedure: Native vegetation clearing permits*. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.PDF.

Environmental Protection Authority (EPA) (2008). *Environmental Guidance for Planning and Development. Guidance Statement No. 33.* Environmental Protection Authority, Western Australia.

Government of Western Australia (2019) *2018 South West Vegetation Complex Statistics. Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions, Perth, https://catalogue.data.wa.gov.au/dataset/dbca

Government of Western Australia. (2019) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019.* WA Department of Biodiversity, Conservation and Attractions. https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics

Heddle, E. M., Loneragan, O. W., and Havel, J. J. (1980) *Vegetation Complexes of the Darling System, Western Australia*. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

City of Joondalup (2022) *Advice for clearing permit application CPS 9822/1*, received on 5 September 2022 (DWER Ref: DWERDT654132).

Molloy, S., Wood, J., Hall, S., Wallrodt, S. and Whisson, G. (2009) *South West Regional Ecological Linkages Technical Report*, Western Australian Local Government Association and Department of Environment and Conservation, Perth.

Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68) *Atlas of Australian Soils*, Sheets 1 to 10, with explanatory data. CSIRO and Melbourne University Press: Melbourne.

Schoknecht, N., Tille, P. and Purdie, B. (2004) *Soil-landscape mapping in South-Western Australia – Overview of Methodology and output*s Resource Management Technical Report No. 280. Department of Agriculture.

Shah, B. (2006) *Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia*. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.

Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) *Native Vegetation in Western Australia, Extent, Type and Status*. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

Sanpro Construction Pty Ltd (2022a) *Clearing permit application CPS 9822/1*, received 26 July 2022 (DWER Ref: DWERDT636026).

Sanpro Construction Pty Ltd (2022b) *Supporting information for clearing permit application CPS 9822/1,* received 30 August 2022 (DWER Ref DWERDT655764; DWERDT655766).

Threatened Species Scientific Committee (2016) *Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain Ecological community*. Canberra: Department of the Environment and Energy

Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Valentine, L.E. and Stock, W. (2008) *Food Resources of Carnaby's Black Cockatoo (Calyptorhynchus latirostris) in the Gnangara Sustainability Strategy Study Area*. Edith Cowan University and Department of Environment and Conservation. December 2008.

Watson, Nicholas (2018). *Habitat preferences and the effect of habitat reduction on the quenda (Isoodon fusciventer) in an urban development.* School of Veterinary and Life Sciences, Murdoch University, Western Australia.

Western Australian Planning Commission (2014). *Metropolitan Region Scheme Text. Working Document.* Available online from https://www.wa.gov.au/government/publications/metropolitan-region-scheme-text-and-maps

Western Australian Herbarium (1998-). *FloraBase - the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions, Western Australia. https://florabase.dpaw.wa.gov.au/ (Accessed in August 2022)

Western Australian Planning Commission (2014). *Metropolitan Region Scheme Text*. Department of Planning, Perth, Western Australia