



## CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

<b>Purpose Permit number:</b>	CPS 8951/1
<b>Permit Holder:</b>	Shire of Waroona
<b>Duration of Permit:</b>	25 December 2020 – 25 December 2025

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

### PART I – CLEARING AUTHORISED

**1. Purpose for which clearing may be done**

Clearing for the purpose of improving road safety.

**2. Land on which clearing is to be done**

Lot 2302 on Deposited Plan 27033, Nanga Brook  
Lot 2190 on Deposited Plan 26033, Nanga Brook  
Nyngan Road reserve (PIN 1536427), Nanga Brook  
Lot 2290 on Deposited Plan 26032, Nanga Brook  
Lot 2189 on Deposited Plan 26034, Nanga Brook  
Dwellingup State Forest (F 14), Nanga Brook and Hoffman

**3. Area of Clearing**

The Permit Holder must not clear more than 2.5 hectares of native vegetation within the area cross-hatched yellow on attached Plan 8951/1a, Plan 8951/1b, Plan 8951/1c and Plan 8951/1d

**4. Application**

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

**5. Type of clearing authorised**

This Permit authorises the Permit Holder to clear native vegetation for the activities described in condition 1 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for those activities under the *Local Government Act 1995* or any other written law.

### PART II – MANAGEMENT CONDITIONS

**6. Avoid, minimise and reduce the impacts and extent of clearing**

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

## 7. Dieback and weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the 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 *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.

## 8. Vegetation management

The Permit Holder shall not clear native vegetation within 10 metres of any *watercourse* within and/or adjacent to the area cross-hatched yellow on attached Plan 8951/1a, Plan 8951/1b, Plan 8951/1c and Plan 8951/1d.

## PART III - RECORD KEEPING AND REPORTING

### 9. Record keeping

The Permit Holder must maintain the following records in relation to the clearing of native vegetation authorised under this Permit:

- (a) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (b) the date(s) that the area was cleared;
- (c) the size of the area cleared (in hectares);
- (d) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 6 of this Permit;
- (e) actions taken to minimise the risk of the introduction and spread of *dieback* and *weeds* in accordance with condition 7 of this Permit; and
- (f) Actions taken to avoid clearing within 10 metres of any *watercourse* in accordance with condition 8 of this Permit.

### 10. Reporting

The Permit Holder must produce the records required under condition 9 of this Permit when required by the *CEO*.

## DEFINITIONS

The following meanings are given to terms used in this Permit:

*CEO* means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

*dieback* means the effect of *Phytophthora* species on native vegetation;

*fill* means material used to increase the ground level, or fill a hollow;

*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;

*watercourse* has the meaning given to it in section 3 of the *Rights in Water and Irrigation Act 1914*;

*weed/s* 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



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Mathew Gannaway  
MANAGER  
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20  
of the Environmental Protection Act 1986*


2 December 2020

# Plan 8951/1a





## Legend



### CPS layers

 CPS areas approved to clear

### Legend

-  Land TenureLGATE - 226
-  Local Government Authorities

### Road Centrelines

-  Local Rd - Sealed
-  0 - 100000

### Image

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Officer delegated under section 20 of the  
Environmental Protection Act 1986




GOVERNMENT OF  
WESTERN AUSTRALIA

# Plan 8951/1b





## Legend



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### Legend

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-  Local Government Authorities

### Road Centrelines

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Environmental Protection Act 1986




GOVERNMENT OF  
WESTERN AUSTRALIA

# Plan 8951/1c





## Legend



### CPS layers

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### Legend

-  Land TenureLGATE - 226
-  Local Government Authorities


### Road Centrelines

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
GOVERNMENT OF  
WESTERN AUSTRALIA

# Plan 8951/1d





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

### CPS layers

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### Legend

 Land TenureL GATE - 226  
 Local Government Authorities

### Road Centrelines

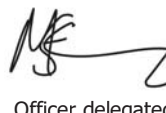
 Local Rd - Sealed  
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Officer delegated under section 20 of the Environmental Protection Act 1986



GOVERNMENT OF WESTERN AUSTRALIA



## Clearing Permit Decision Report

### 1. Application details and outcome

#### 1.1. Permit application details

<b>Permit number:</b>	CPS 8951/1
<b>Permit type:</b>	Purpose permit
<b>Applicant name:</b>	Shire of Waroona
<b>Application received:</b>	23 June 2020
<b>Application area:</b>	2.5 hectares
<b>Purpose of clearing:</b>	Improving road safety
<b>Method of clearing:</b>	Mechanical
<b>Property:</b>	Lot 2302 on Deposited Plan 27033 Lot 2190 on Deposited Plan 26033 Nyngan Road reserve (PIN 1536427) Lot 2290 on Deposited Plan 26032 Lot 2189 on Deposited Plan 26034 Dwellingup State Forest (F 14)
<b>Location (LGA area/s):</b>	Shire of Waroona
<b>Localities (suburb/s):</b>	Nanga Brook and Waroona

#### 1.2. Description of clearing activities

The vegetation applied to be cleared comprises of 2.5 hectares of native vegetation within a footprint of 10.485 hectares along either side of Nanga Brook Road reserve (see Figure 1, Section 1.5). The purpose of the clearing is to improve road safety and the applicants successful application for black spot funding. Clearing will predominantly be undertaken using a mulching machine that is 2.4 metres wide.

#### 1.3. Decision on application and key considerations

<b>Decision:</b>	Granted
<b>Decision date:</b>	2 December 2020
<b>Decision area:</b>	2.5 hectares (ha) of native vegetation, as depicted in Section 1.5, below.

#### 1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Water and Environmental Regulation (DWER) on 23 June 2020. DWER advertised the application for public comment and no submissions were received.

In undertaking their assessment, and in accordance with section 51O of the EP Act, the Delegated Officer has given consideration to the Clearing Principles in Schedule 5 of the EP Act (see Appendix B), relevant planning instruments, and any other pertinent matters they deemed relevant to the assessment (see Section 3).

In particular, the Delegated Officer has determined that:

- the clearing is not likely to have a significant impact on priority flora or habitat for forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and Carnaby's cockatoo (*Calyptorhynchus latirostris*).



- the implementation of a vegetation management condition requiring no clearing within 10 metres of a watercourse will mitigate the impact of clearing on 'Drakes Brook' and priority flora identified within the local area.
- the implementation of a weed and dieback management condition is appropriate to mitigate the impact of spreading weeds into adjacent vegetation and Dwelling State Forest.
- the applicant has suitably demonstrated avoidance and minimisation measures (see Section 3.1)

The Delegated Officer also took into consideration the purpose of the clearing is to improve road safety and the applicants successful application for black spot funding.

In determining to grant a clearing permit subject to conditions, the Delegated Officer found that the proposed clearing is not likely to lead to an unacceptable risk to the environment.

1.5. Site map(s)

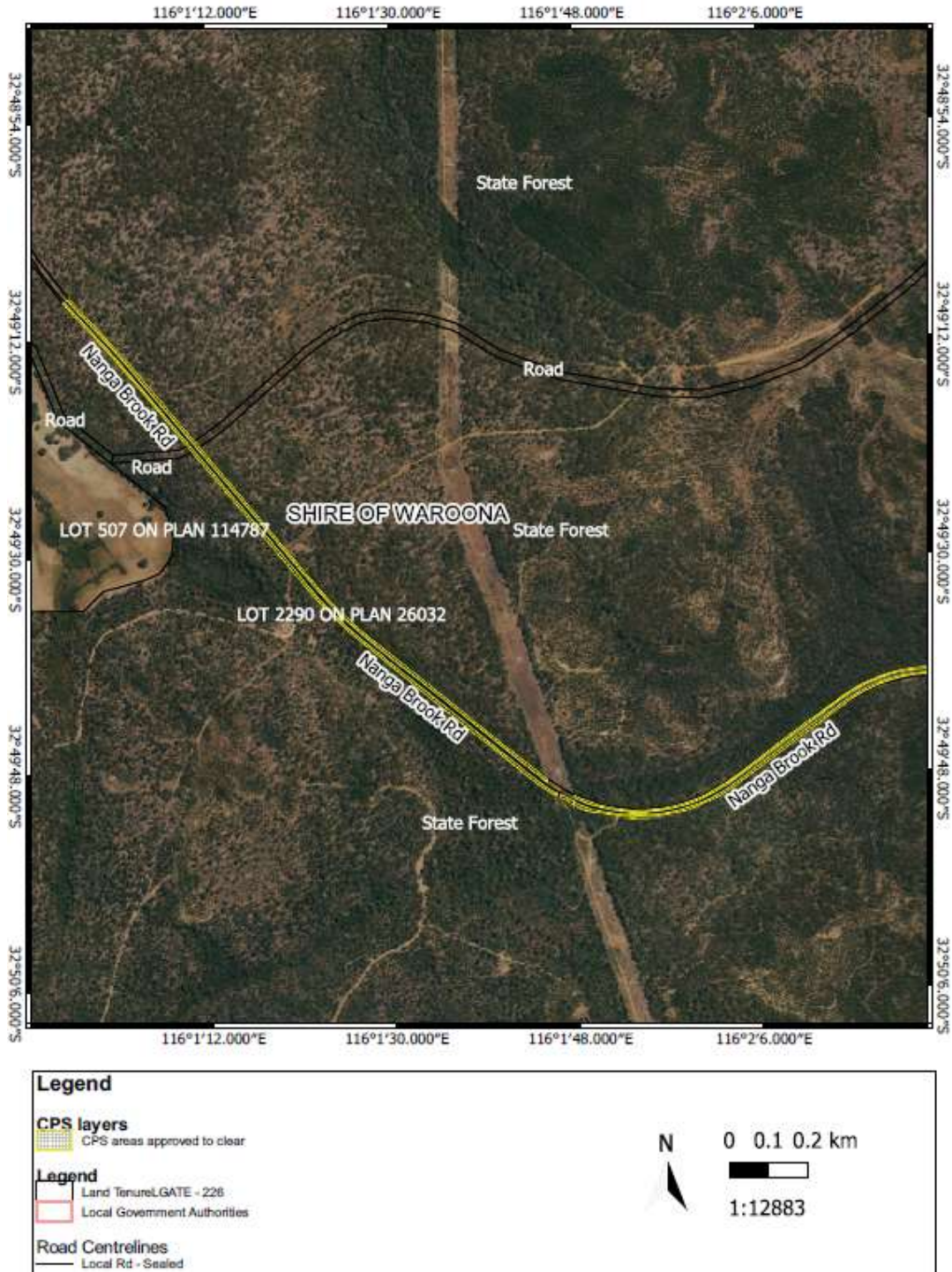
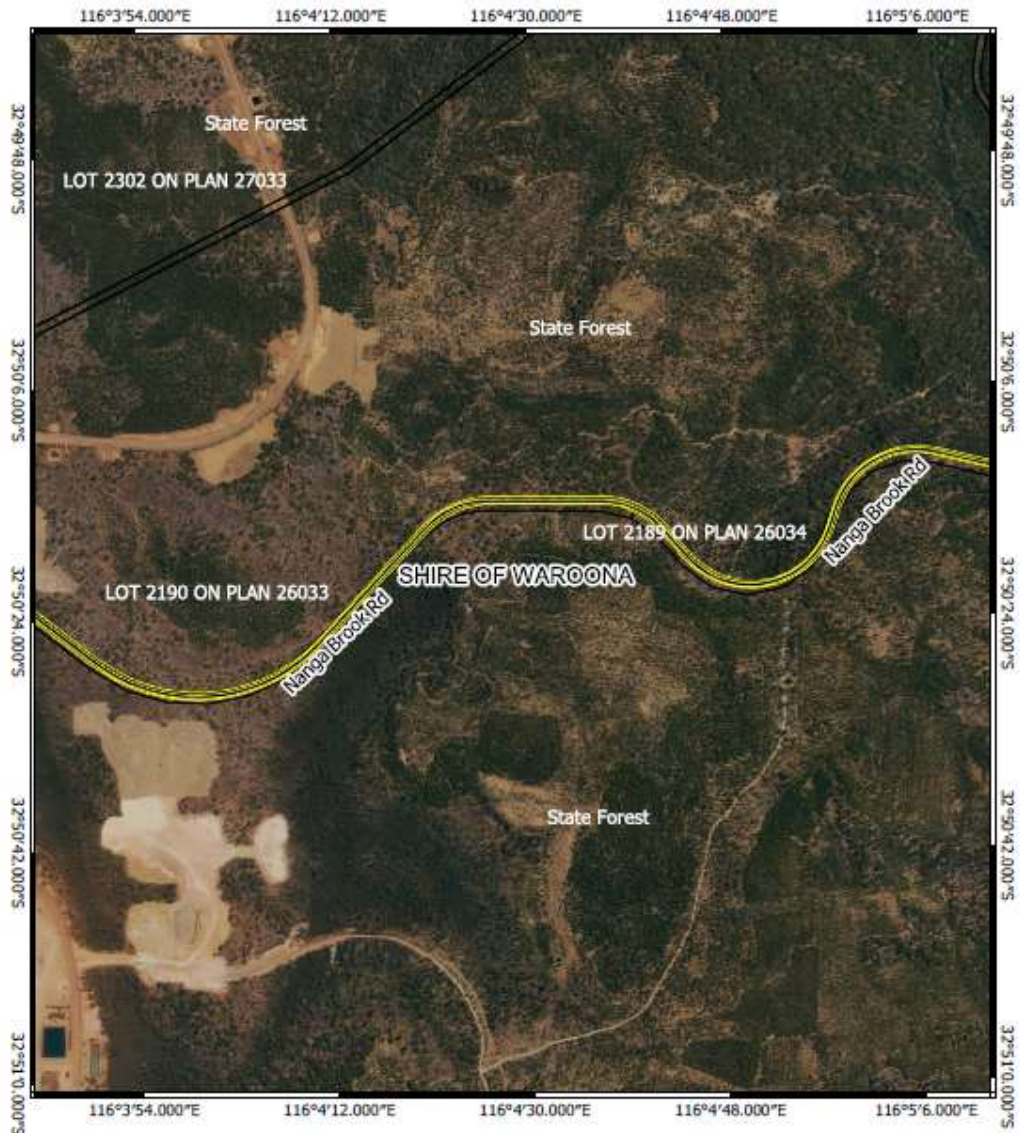


Figure 1. Map of the application area.



Figure 2. Map of the application area.



**Legend**

**CPS layers**

CPS areas approved to clear

**Legend**

Land Tenure LGATE - 226  
Local Government Authorities

**Road Centrelines**

Local Rd - Sealed



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Figure 3. Map of the application area.

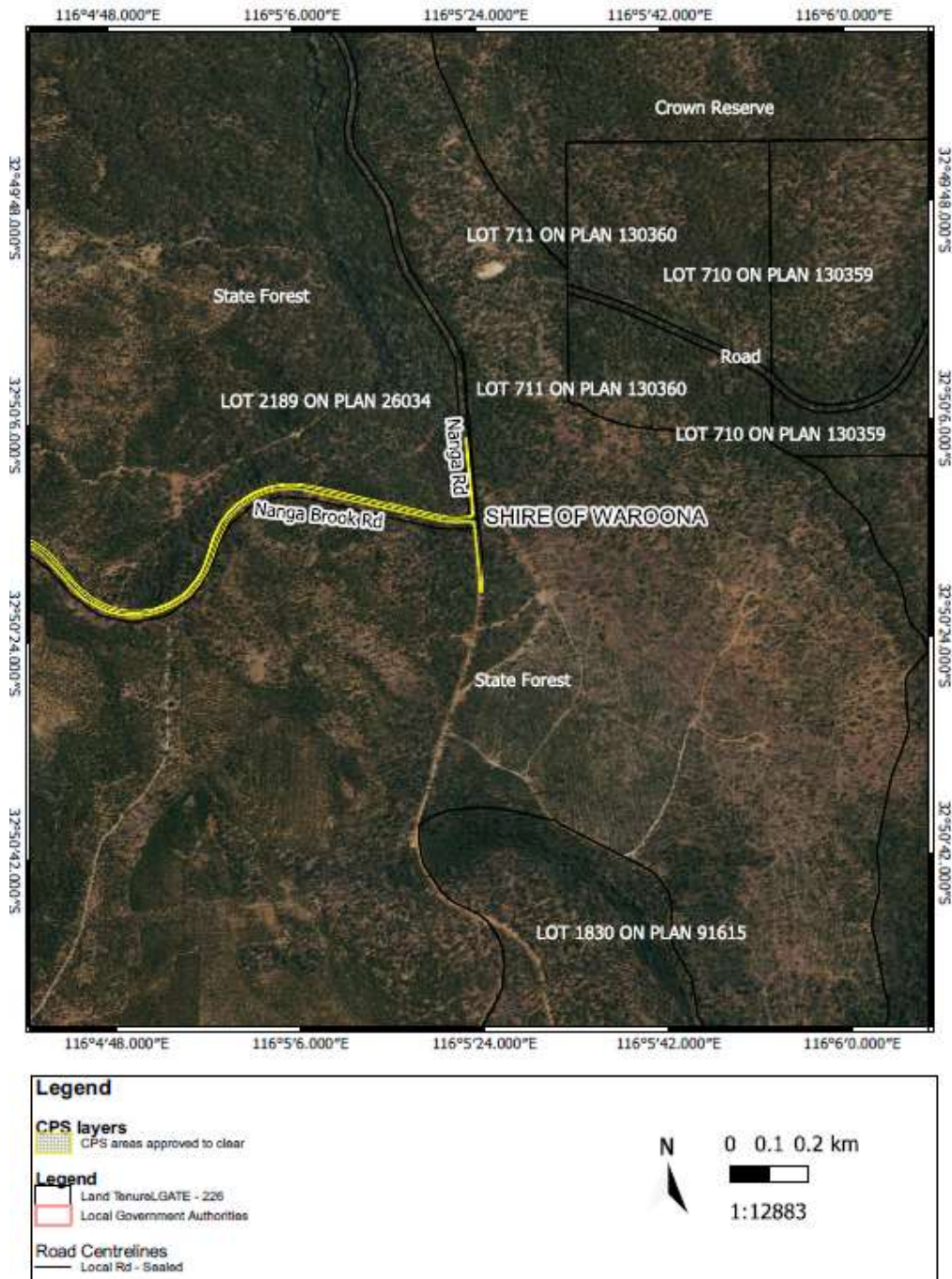


Figure 4. Map of the application area.

The areas cross-hatched yellow within Figures 1-4 indicate 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 1.3), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

1. the precautionary principle;
2. the principle of intergenerational equity; and
3. 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)

The key guidance documents which inform this assessment are:

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

### **3. Detailed assessment of application**

#### **3.1. Avoidance and mitigation measures**

The applicant has advised that the clearing zone from 15.15 to 19.93 SLK results in an area of 4.78 hectares. However, the applicant has reduced the clearing size to 15 mature trees and 2.5 hectares as only some sections of the road required mulching.

The clearing will predominantly be undertaken using a mulching machine 2.4 metres wide to mulch regrowth to a width of 2.4 metres from the edge of the seal on straight sections of the road and a maximum of five metres on curves. In addition, 15 mature trees consisting of *Allocasuarina fraseriana*, *Banksia grandis*, *Corymbia calophylla* and *Eucalyptus marginata* varieties will require removal due to their location falling within one to five metres of the clear zone around curves.

The applicant has advised that no clearing within 10 metres of watercourses will occur.

#### **3.2. Assessment of environmental impacts**

In assessing the application in accordance with section 51O of the EP Act, the Delegated Officer has examined the application and site characteristics (Appendix A) and considered whether the clearing poses a risk to environmental values. The assessment against the Clearing Principles is contained in Appendix B.

This assessment identified that the clearing may pose a risk to the environmental value(s) of biological values and conservation areas and that these required further consideration. The detailed consideration and assessment of the clearing impacts against the specific environmental values is provided below. Where the assessment found that the clearing presents an unacceptable risk to environmental values, conditions aimed at controlling and/or ameliorating the impacts have been imposed under sections 51H and 51I of the EP Act. These are also identified below.

##### **3.2.1. Environmental value: biological values (fauna) – Clearing Principle (b)**

###### Assessment:

According to available databases, there are eight fauna species listed as threatened under the *Biodiversity Conservation Act 2016* (BC Act) and five priority fauna as listed by the Department of Biodiversity, Conservation and Attractions (DBCA) recorded within the local area (DBCA, 2007-). As referred to in Appendix A, suitable habitat for forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and Carnaby's cockatoo (*Calyptorhynchus latirostris*) may be present within the application area.

Carnaby's cockatoo and Baudin's Cockatoo is listed as endangered and forest-tailed cockatoo is listed as vulnerable under the EPBC Act and BC Act. Black cockatoos breed in large hollow-bearing trees, generally within woodlands or forests or in isolated trees (Commonwealth of Australia, 2012). These species nest in hollows in live or dead trees of karri, marri, wandoo, tuart, salmon gum, jarrah, flooded gum, York gum, powder bark, bullich and blackbutt (Commonwealth of Australia, 2012). Photographs provided by the applicant and a site inspection undertaken by DWER (2020) did not identify any large trees within the application area that contain hollows suitable for breeding by black cockatoos (Shire of Waroona, 2020; DWER, 2020). Given that no hollows were identified within any of the large trees proposed to be cleared and the application area predominantly comprise regrowth vegetation, the application area is not likely to comprise of significant breeding habitat for the black cockatoo species.

Black cockatoos have a preference for foraging habitat that includes jarrah and marri woodlands and forest heathland and woodland dominated by proteaceous plant species such as *Banksia* sp., *Hakea* sp. and *Grevillea* sp. (Commonwealth of Australia, 2012). Some foraging habitat may be present within the application area with some *Banksia* sp. and juvenile eucalypts species present throughout the application area. The application area has been previously cleared and includes areas dominated by *Bossiaea Aquifolium* and is surrounded by extensive vegetation including the Dwellingup State Forest and Nanga Brook reserve. The clearing of 2.5 hectares of native vegetation along 10 kilometres of Nanga Brook Road reserve is not expected to impact upon significant foraging habitat for black cockatoos.

Suitable habitat for the remaining conservation significant fauna recorded within the local area is not likely to be impacted by the proposed clearing.

Outcome: Based on the above assessment, the Delegated Officer has determined that the proposed clearing is not going to significantly impact on this environmental value.

Conditions: No fauna management conditions required.

### **3.2.2. Environmental value: biological values (flora) – Clearing Principles (a) to (d)**

#### Assessment:

According to available databases, 14 priority and one threatened flora species have been recorded within the application area. Of these, suitable habitat for four priority flora species may be present within the application area.

*Amanita kalamundae* (Priority 3) has been recorded amongst Jarrah, Marri / Eucalypt woodland on loamy sandy soils. Given the vegetation and soils types present within the application area (Appendix A) suitable habitat may be present for this species. This species is known from approximately 17 records across a range of 380 kilometres, a number of these known records occur within conservation estate (Western Australian Herbarium 1998-).

*Actinotus repens* (Priority 3) has been recorded growing in association with drainage lines and watercourse and has been found on the edge of tracks and side of road (Western Australian Herbarium 1998-). Given this, suitable habitat for this species may be located within the application area. This species is known from approximately 49 records across a range of 246 kilometres, approximately 27 of these known records occur within conservation estate (Western Australian Herbarium 1998-).

*Amanita fibrilloses* (Priority 3) has been recorded growing in jarrah marri woodland on sandy loam soil (Western Australian Herbarium 1998-). Given the vegetation and soil types identified within the application area suitable habitat for this species may be located within the application area. This species is known from approximately 27 records across a range of 246 kilometres, approximately 15 of these known records occur within conservation estate (Western Australian Herbarium 1998-).

*Stylidium ireneae* (Priority 4) has been recorded within the application area and is known to occur in sandy loam soils in valleys near creek lines, woodland, often with Agonis (Western Australian Herbarium 1998-). Although this species has been recorded within the application area, these records state that one population is located along a 'gully watershed line that flows southwards into Drakes Brook' and the other record is identified as occurring near the edge of a creek line. This species is known from approximately 26 records across a range of 23.5 kilometres, approximately 20 of these records occur within conservation estate including the nearby Dwellingup State Forest.

Whilst suitable habitat may be present within the application area, if present, the proposed clearing is not likely to have a significant impact on the conservation status of the abovementioned priority flora species. This is due to the linear nature of the application area that includes vegetation in completely degraded and degraded condition (Keighery, 1994) that has been previously cleared and that there are numerous known records of the abovementioned priority flora including within conservation state. The applicant has advised that no clearing will occur within 10 metres of watercourses which will also mitigate impacts to *Stylidium ireneae* and *Actinotus repens* if present.

Outcome: Based on the above assessment, the Delegated Officer has determined that the proposed clearing is not going to significantly impact on this environmental value.

Conditions: To address the above impacts, a vegetation management condition will be placed on the permit to mitigate impacts to riparian vegetation associated with Drakes Brook.

### **3.2.3. Environmental value: significant remnant vegetation and conservation areas – Clearing Principles (e) and (h)**

#### Assessment:

The cadastral boundary for Nanga Brook and Nanga road reserve does not correlate accurately with the existing roads and therefore the application area is located within small sections of Dwellingup State Forest. The proposed clearing will directly impact this conservation area through clearing of native vegetation.

Given the narrow, linear nature of the application area that has been previously cleared for the existing roads and the extent of the remaining Dwellingup State forest, impacts of the proposed clearing are not likely to be significant.

No ecological linkages will be severed by the proposed clearing.

There is a risk of weeds and dieback spreading into remnants of native vegetation adjacent to the proposed clearing and the applicant will be required to adhere to weed and dieback management measures (as conditioned on the clearing permit) to minimise this risk.

Outcome: Based on the above assessment, the Delegated Officer has determined that the proposed clearing is not going to significantly impact this environmental value.

Conditions: To address the above impacts, it is considered that the impacts of the proposed clearing of Dwelling State Forest can be managed by requiring the application to take steps to minimise the risk of the introduction and spread of weeds and dieback.

### **3.3. Relevant planning instruments and other matters**

Three Aboriginal Sites of Significance have been recorded 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.

The DBCA (DBCA, 2020) has advised that they understand the cadastral boundary for Nanga Brook – Nanga road do not overlap as they should. This will result in the clearing of vegetation on a small section of State Forest outside of the road reserve. DBCA are familiar with the area and are aware that following the Waroona Fire of 2015 many tree deaths have occurred making this section of the road hazardous. The fire has also stimulated the regrowth of vegetation which has reduced visibility at the intersection. DBCA Hills District supports the application for a clearing permit to undertake the work (DBCA, 2020).

The Shire of Waroona (2020) has advised that they have lodged a successful application under the State Black Spot program to improve a section of Nanga Brook Road from 15.15 to 19.35 SLK. This section of the road has experienced a relatively high number of crashes involving vehicles leaving the carriageway and hitting roadside objects. The successful Black Spot application proposes the following works:

- Remove existing roadside obstacles such as trees and large boulders that were left on the verge after reconstruction some years ago;
- Reshape batters where possible to provide a less severe verge environment;
- Install delineation in the form of chevron markers on the outside of curves
- Install curve advance warning signage with recommended speeds on both sides of the road.



## Appendix A – Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix B.

### 1. Site characteristics

Site characteristic	Details																
Local context	The proposed clearing area of 2.5 hectares of native vegetation is part of a 10.485 footprint along approximately 10 kms of Nanga Brook Road reserve. The proposed clearing area intersects and is located adjacent to Dwellingup State Forest. Spatial data indicates the local area (10 km radius of the proposed clearing area) retains approximately 64% of the original native vegetation cover.																
Vegetation description	<p>Photographs supplied by the applicant and DWER site inspection indicate the vegetation within the proposed clearing area consists predominantly of juvenile <i>Corymbia calophylla</i> (marri) and <i>Eucalyptus Marginata</i> (jarrah) with <i>Bossiaea aquifolium</i> dominant within the understorey. Numerous native species were scattered throughout the application area including <i>Allocasuarina fraseriana</i>, <i>Banksia grandis</i>, <i>Banksia sessilis</i>, <i>Macrozamia</i> sp., <i>Acacia</i> sp. and <i>Hibbertia</i> sp. (DWER, 2020).</p> <p>The application area has been previously cleared and therefore the application area is predominantly regrowth. Very little weed cover was noted throughout the application area.</p> <p>Representative photos are available in Appendix D.</p> <p>The Shire of Waroona (2020) has advised that 15 mature native trees are proposed to be cleared which comprise of <i>Allocasuarina fraseriana</i>, <i>Banksia grandis</i>, <i>Corymbia calophylla</i> and <i>Eucalyptus marginata</i>.</p> <p>The remainder of the clearing will involve machine mulching of verges which would be at a width of 2.4 metres from the edge of the seal on straight sections of the road and a maximum of five metres on curves to ensure the run off onto the shoulders are free of hazards as much as practical.</p> <p>The Shire of Waroona (2020) advised that the application area has a variety of native vegetation. The breakdown below is a percentage based on a visual inspection:</p> <table border="0"> <tbody> <tr> <td><i>Bossiaea aquifolium</i></td> <td>90%</td> </tr> <tr> <td><i>Allocasuarina fraseriana</i></td> <td>1%</td> </tr> <tr> <td><i>Banksia sessilis</i></td> <td>3%</td> </tr> <tr> <td><i>Banksia grandis</i></td> <td>1%</td> </tr> <tr> <td><i>Macrozamia riedlei</i></td> <td>1%</td> </tr> <tr> <td><i>Corymbia calophylla</i></td> <td>1%</td> </tr> <tr> <td><i>Acacia</i> sp.</td> <td>2%</td> </tr> <tr> <td><i>Eucalyptus Marginata</i></td> <td>1%</td> </tr> </tbody> </table> <p>This is consistent with the mapped vegetation type(s):</p> <ul style="list-style-type: none"> <li>Yarragil 1 (Yg1) which is described as open forest of <i>Eucalyptus marginata</i> subsp. <i>marginata</i> -<i>Corymbia calophylla</i> on slopes with mixtures of <i>Eucalyptus patens</i> and <i>Eucalyptus megacarpa</i> on the valley floors in humid and subhumid zones;</li> <li>Yarragil 2 (Yg2) which is described as open forest of <i>Eucalyptus marginata</i> subsp. <i>thalassica</i> -<i>Corymbia calophylla</i> on slopes, woodland of <i>Eucalyptus patens</i> - <i>Eucalyptus rudis</i> with <i>Hakea prostrata</i> and <i>Melaleuca viminea</i> on valley floors in subhumid and semiarid zones; and</li> </ul>	<i>Bossiaea aquifolium</i>	90%	<i>Allocasuarina fraseriana</i>	1%	<i>Banksia sessilis</i>	3%	<i>Banksia grandis</i>	1%	<i>Macrozamia riedlei</i>	1%	<i>Corymbia calophylla</i>	1%	<i>Acacia</i> sp.	2%	<i>Eucalyptus Marginata</i>	1%
<i>Bossiaea aquifolium</i>	90%																
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<i>Banksia sessilis</i>	3%																
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<i>Corymbia calophylla</i>	1%																
<i>Acacia</i> sp.	2%																
<i>Eucalyptus Marginata</i>	1%																

Site characteristic	Details
	<ul style="list-style-type: none"> <li>Dwellingup (D1) which is described as open forest of <i>Eucalyptus marginata</i> subsp. <i>marginata</i> -<i>Corymbia calophylla</i> on lateritic uplands in mainly humid and subhumid zones (Mattiske and Havel, 1998).</li> </ul>
Vegetation condition	<p>Photographs supplied by the applicant and the DWER site inspection indicate the vegetation within the proposed clearing area is in completely degraded to good (Keighery, 1994) condition.</p> <p>The full Keighery condition rating scale is provided in Appendix C.</p> <p>Representative photos are available in Appendix D.</p>
Soil description	<p>The application area is mapped as the following land subsystems:</p> <ul style="list-style-type: none"> <li>Dwellingup Subsystem is described as divides, lower to upper slopes and hillcrests. Duplex sandy gravels and loamy gravels with minor areas of shallow gravels, deep sandy gravels, yellow deep sands and yellow and pale deep sands, often gravelly.</li> <li>Yarragil Subsystem is described as shallow, narrow, upper valleys of the deeply dissected Murray, Bindoon and Helena units. Alluvial, clay and loam soils, moderately well drained, often gravelly, with some sands and loams. Salt prone. Woodland of <i>Eucalyptus wandoo</i>, <i>E. accedens</i>.</li> <li>Yarragil DpYGh Phase is described as very gentle to moderately inclined (&lt;20%) concave valley sideslopes. Moderately well drained yellow duplex soils and yellow and brown massive earths (Department of Primary Industry and Regional Development, 2019).</li> </ul>
Waterbodies	<p>The desktop assessment and aerial imagery indicated that one major river 'Drakes Brook' intersects the application area.</p> <p>A watercourse 'Samson Brook' is located 115 metres from the application area. .</p>
Conservation areas	<p>Dwellingup State Forest is located adjacent to the northern and southern boundary of the application area and Nanga Brook Road reserve.</p> <p>Lane Poole Reserve is located approximately 270 metres east of the application area.</p>
Climate and landform	<p>Rainfall: 1200 millimetres</p> <p>Evapotranspiration: 800 and 900 millimetres</p> <p>Geology: Granite and Gneiss</p> <p>Groundwater Salinity (Total Dissolved Solids): 500-1000 milligrams per litre total dissolved solids</p>

## 2. Flora, fauna and ecosystem analysis

With consideration for the site characteristics set out above, relevant datasets (see Appendix E), the following conservation significant flora and fauna species, and ecological communities may be impacted by the clearing.

Species / Ecological Community	Conservation status	Distance of closest record to application area (kilometres)	Suitable soil type? (flora, ecological community)	Suitable vegetation type? (flora, ecological community)	Suitable habitat features (fauna)	Are surveys adequate to identify? (Y, N, N/A)
<b>Flora</b>						
<i>Actinotus repens</i>	P3	1.3	Y	Y		N/A
<i>Amanita fibrilloses</i>	P3	3.6	Y	Y		N/A
<i>Amanita kalamundae</i>	P3	2.9	Y	Y		N/A
<i>Calothamnus graniticus</i> subsp. <i>leptophyllus</i>	P4	4.2	N	N		N/A
<i>Chamaescilla gibsonii</i>	P3	8.1	N	N		N/A
<i>Diuris drummondii</i>	T	9.4	N	N		N/A
<i>Eucalyptus graniticola</i> x	P4	4.5	N	Y		N/A
<i>Grevillea manglesii</i> subsp. <i>ornithopoda</i>	P2	5.1	N	N		N/A
<i>Hibbertia acrotoma</i>	P1	6.2	N	Y		N/A
<i>Melaleuca viminalis</i>	P2	9.2	N	Y		N/A
<i>Millotia tenuifolia</i> var. <i>laevis</i>	P2	4.1	N	Y		N/A
<i>Parsonsia diaphanophleba</i>	P4	3.7	N	Y		N/A
<i>Pimelea rara</i>	P4	2.9	N	Y		N/A
<i>Stylidium aceratum</i>	P3	3.5	N	N		N/A
<i>Stylidium ireneae</i>	P4	0 (within application area)	N	N		N/A
<b>Fauna</b>						
Noisy Scrub-bird ( <i>Atrichornis clamosus</i> )	Threatened	1.4			N	N/A
Woylie ( <i>Bettongia penicillata</i> subsp. <i>ogilbyi</i> )	Threatened	10			N	N/A
Australasian Bittern ( <i>Botaurus poiciloptilus</i> )	Threatened	5.8			N	N/A

Species / Ecological Community	Conservation status	Distance of closest record to application area (kilometres)	Suitable soil type? (flora, ecological community)	Suitable vegetation type? (flora, ecological community)	Suitable habitat features (fauna)	Are surveys adequate to identify? (Y, N, N/A)
Forest Red-tailed Black Cockatoo ( <i>Calyptorhynchus banksii</i> subsp. <i>naso</i> )	Threatened	0.35			Y	N/A
Baudin's Cockatoo ( <i>Calyptorhynchus baudinii</i> )	Threatened	2.5			Y	N/A
Carnaby's Cockatoo ( <i>Calyptorhynchus latirostris</i> )	Threatened	0.7			Y	N/A
Chuditch ( <i>Dasyurus geoffroii</i> )	Threatened	1.4			N	N/A
Numbat ( <i>Myrmecobius fasciatus</i> )	Threatened	8.2			N	N/A
Quokka ( <i>Setonix brachyurus</i> )	Threatened	8.5			N	N/A
Quenda ( <i>Isodon fusciventer</i> )	Priority 4	5			N	N/A
Western Brush Wallaby ( <i>Notamacropus irma</i> )	Priority 4	0.3			N	N/A
<b>Ecological Communities</b>						
Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region	Threatened (EPBC Act) Priority 3	7.4	N	N	N	N/A

### 3. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	% remaining	Current extent in all DBCA managed land (ha)	% current extent in all DBCA managed land (proportion of pre-European extent)
IBRA bioregion					
Jarrah Forest	4,506,660.25	2,399,838.15	53.25	1,673,614.25	37.14
Vegetation complex					
Yg1	80,202.95	64,927.06	80.95	59,063.57	73.64
Yg2	50,259.16	46,475.31	92.47	43,941.16	87.43

	Pre-European extent (ha)	Current extent (ha)	% remaining	Current extent in all DBCA managed land (ha)	% current extent in all DBCA managed land (proportion of pre-European extent)
D1	208,490.90	181,038.81	86.83	208,490.90	181,038.81

## Appendix B – Assessment against the Clearing Principles

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p><u>Principle (a):</u> “Native vegetation should not be cleared if it comprises a high level of biodiversity.”</p> <p><u>Assessment:</u> The application area may comprise suitable habitat for priority flora species <i>Amanita kalamundae</i> (Priority 3), <i>Actinotus repens</i> (Priority 3), <i>Amanita fibrillopes</i> (Priority 3), <i>Stylidium ireneae</i> (Priority 4) and fauna species Forest Red-tailed Black Cockatoo, Baudin’s Cockatoo and Carnaby’s Cockatoo. However, impacts are not likely to be significant.</p> <p>The vegetation present is not likely to be representative of any threatened or priority ecological communities.</p> <p>The proposed clearing is not likely to comprise a high biodiversity.</p>	Not likely to be at variance	Yes Refer to Section 3.2.1 and 3.2.2 above.
<p><u>Principle (b):</u> “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.”</p> <p><u>Assessment:</u> The application area comprises foraging habitat for the Forest Red-tailed Black Cockatoo, Baudin’s Cockatoo and Carnaby’s Cockatoo. However, impacts are not likely to be significant.</p>	Not likely to be at variance	Yes Refer to Section 3.2.1 above.
<p><u>Principle (c):</u> “Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</p> <p><u>Assessment:</u> The proposed clearing area is unlikely to contain habitat for flora species listed under the BC Act.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> “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.”</p> <p><u>Assessment:</u> The proposed clearing area does not contain species that can indicate a threatened ecological community as listed by the Western Australia Minister for Environment.</p>	Not likely to be at variance	No
<b>Environmental values: significant remnant vegetation and conservation areas</b>		
<p><u>Principle (e):</u> “Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</p> <p><u>Assessment:</u> The extent of the mapped vegetation type and native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia. Vegetation in the proposed clearing</p>	Not likely to be at variance	No

Assessment against the Clearing Principles	Variance level	Is further consideration required?
area is not considered to be part of a significant ecological linkage in the local area.		
<p><u>Principle (h)</u>: <i>“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.”</i></p> <p><u>Assessment</u>: The application area is located within and adjacent to ‘Dwellingup Forest’. Given the presence of this conservation area the proposed clearing may impact this conservation area through direct clearing and the spread of weeds and dieback.</p>	May be at variance	Yes Refer to Section 3.2.3 above.
<b>Environmental values: land and water resources</b>		
<p><u>Principle (f)</u>: <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment</u>: The watercourse ‘Drakes Brook’ intersects the application area. The vegetation proposed to be cleared is considered to be growing in association with a watercourse.</p> <p>Given the application area is long and linear and has been previously been impacted the proposed clearing is not likely to have a significant impact on the environmental values of this watercourse.</p> <p>The applicant has advised that no clearing within 10 metres of the watercourse will occur.</p>	At variance	No
<p><u>Principle (g)</u>: <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment</u>: Given the linear, narrow nature of the proposed clearing area, the proposed clearing is not likely to cause appreciable land degradation.</p> <p>The applicant has advised that no clearing will occur within 10 metres of a watercourse. Therefore, the proposed clearing is not likely to cause water erosion.</p>	Not likely to be at variance	No
<p><u>Principle (i)</u>: <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.”</i></p> <p><u>Assessment</u>: Given the linear nature of the application area and the small area proposed to be cleared surrounding the watercourse, impacts to Drakes Brook are likely to be minimal and short term. Furthermore, road construction includes culverts and drainage which will help manage surface flow. Therefore, the proposed clearing is not likely to cause deterioration in the quality of surface water. The applicant has also advised that no clearing within 10 metres of the watercourse will occur.</p> <p>Given the low salinity level and extent of native vegetation in the local area, the proposed clearing is not likely to increase groundwater salinity or cause deterioration in the quality of groundwater.</p>	Not likely to be at variance	No
<p><u>Principle (j)</u>: <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p>	Not likely to be at variance	No

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<p><u>Assessment:</u> Given the linear nature of the proposed clearing area, of which a large portion has been previously impacted, the proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.</p>		

### 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.

#### 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.
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**

Representative photos of the vegetation within the application area (DWER, 2020).



Fig 1. Northern side of road reserve little clearing of native vegetation required



Fig 2. Southern of road reserve



Figure 3. Large dead tree no large hollows identified suitable for breeding by black cockatoos.



Figure 4. *Bossiaea aquifolium* dominate





Figure 5. vegetation within application area



Fig 6. Vegetation within application area

## Appendix E – References and databases

### 1. GIS datasets

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

- Aboriginal Heritage Places (DPLH-001)
- 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)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Regional Parks (DBCA-026)
- Soil and Landscape Mapping – Best Available

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)

## 2. References

- Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.
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- Department of Biodiversity, Conservation and Attractions (2007-) NatureMap. <https://naturemap.dpaw.wa.gov.au/>. Accessed October 2020
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