



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 7175/1
Permit Holder:	Shire of Dardanup
Duration of Permit:	From 29 April 2017 to 29 April 2022

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 road widening and upgrades.

2. Land on which clearing is to be done

Depiazzi Road reserve (PINs 1247117, 1355202 and 1355203), Dardanup
Banksia Road reserve (PINs 1159110, 1314673 and 12184210), Crooked Brook

3. Area of Clearing

The Permit Holder must not clear more than 0.632 hectares of native vegetation within the area cross-hatched yellow on attached Plan 7175/1.

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 etc. 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*:

- (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (ii) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

DEFINITIONS

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

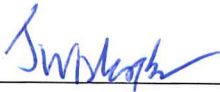
dieback means the effect of *Phytophthora* species on native vegetation;

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;

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 Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



James Widenbar
MANAGER
CLEARING REGULATION
DEPARTMENT OF ENVIRONMENT REGULATION

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

30 March 2017

Plan 7175/1



Legend

-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority



1:15,000

(Approximate when reproduced at A4)

GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

[Signature] Date 30/3/2017

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986



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1. Application details

1.1. Permit application details

Permit application No.: 7175/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Shire of Dardanup

1.3. Property details

Property: Depiazzi Road reserve (PINs 1247117, 1355202 and 1355203), Dardanup
Banksia Road reserve (PINs 1159110, 1314673 and 12184210), Crooked Brook
Local Government Authority: Shire of Dardanup
DER Region: Greater Swan
DPaW District: Wellington
LCDC: Dardanup
Localities: Crooked Brook and Dardanup

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.632		Mechanical Removal	Road construction or upgrades

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 30 March 2017

Reasons for Decision: On 8 July 2016 the applicant applied to clear three hectares of native vegetation within a 14 hectare footprint for the purpose of road widening and upgrades. On 3 October 2016, the applicant advised that the required clearing for the proposed road upgrades had been reassessed, and requested to amend the application to clear two hectares.

During the assessment, the applicant reduced the application area and footprint to 0.632 hectares to avoid and minimise potential environmental impacts from the proposed clearing.

The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*, and it has been concluded that the proposed clearing is at variance to Principle (f), may be at variance to Principle (d), and is not likely to be at variance to any of the remaining clearing Principles.

The Delegated Officer determined that the proposed clearing may facilitate the spread of weeds and dieback into native vegetation adjacent to the application area, and has granted the permit subject to conditions requiring weed and dieback management measures.

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
The application area contains the following mapped Beard vegetation associations (Shepherd et al., 2001): 968: Medium woodland; jarrah (<i>Eucalyptus marginata</i>), marri (<i>Corymbia calophylla</i>) and wandoo (<i>Eucalyptus wandoo</i>); and 1182: Medium woodland; flooded gum (<i>Eucalyptus rudis</i>) and swamp paperbark (<i>Melaleuca raphiophylla</i>).	The applicant proposes to clear 0.632 hectares of native vegetation for the purpose of road widening.	Completely degraded: No longer intact; completely/almost completely without native species (Keighery, 1994); To: Very good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).	The application area consists of a 3.6 kilometre stretch of Depiazzi Road and Banksia Road. Vegetation condition was determined during a site inspection conducted by the Department of Environment Regulation (DER) on 7 September 2016 (DER, 2016).

The following Heddlé vegetation complexes are mapped within the application area (Heddlé et al., 1980):
CPS 7175/1

Cartis complex: Low open forest to open forest of jarrah - marri - *Corymbia haematoxylon* (mountain marri) with definite second storey of *Banksia* spp.;

Dardanup complex: Mosaic of vegetation types characteristic of adjacent vegetation complexes such as Serpentine River, Southern River and Guildford; and

Guildford complex: A mixture of open forest to tall open forest of marri - wandoo - jarrah and woodland of wandoo (with rare occurrences of salmon white gum (*Eucalyptus lane-poolei*). Minor components include flooded gum - swamp paperbark.

The majority of vegetation within the application area is in a degraded to good (Keighery, 1994) condition (DER, 2016).

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposed clearing is not likely to be at variance to this Principle

The application area comprises 0.632 hectares of native vegetation in completely degraded to very good (Keighery, 1994) condition, which is proposed to be cleared for the purpose of road widening and upgrades to a 3.6 kilometre stretch of Depiazzi Road and Banksia Road. Regarding the vegetation type within the application area, the Department of Parks and Wildlife (Parks and Wildlife) advised that "on the heavier soils the vegetation is mostly a jarrah, marri open forest...[and] on the sandier soils the vegetation becomes a jarrah, *Banksia attenuata*, marri open forest" (Parks and Wildlife, 2016). A site inspection conducted by DER also found *Banksia grandis* to be relatively common within areas, and one portion dominated by *Melaleuca* sp. (DER, 2016).

One seasonally waterlogged wetland is mapped within the application area.

Depiazzi and Banksia Road reserves contain a vegetated corridor within an extensively cleared local area (10 kilometre radius), in which up to 73 per cent of pre-European vegetation has been cleared for agricultural, residential and industrial land uses. Boyanup State Forest and Dardanup Conservation Park are both located within one kilometre of the application area, and represent the largest remnants of native vegetation in the local area.

According to available databases, six rare and 32 priority flora have been recorded within the local area. Of these, one rare and nine priority flora species are known within habitat similar to that within Depiazzi and Banksia Road reserves. The rare flora species has been recorded within two kilometres of the application area, also within a road reserve. The applicant has reduced the area applied to clear from two to 0.632 hectares, and has minimised impacts to vegetation in good to very good (Keighery, 1994) condition with the highest risk of containing rare or priority flora. The remaining risk of impacts to rare or priority flora is low.

A total of six threatened, two priority four, one other specially protected fauna and two migratory bird species protected under international agreement have been recorded within the local area (Parks and Wildlife, 2007-). As discussed in Principle (b), while the application area provides suitable habitat for rare and priority fauna, it is not likely to contain significant fauna habitat compared to surrounding native vegetation.

A total of four threatened ecological communities (TEC) and five priority ecological communities (PECs) have been recorded in the local area. During the assessment of the original application to clear two hectares, Parks and Wildlife advises that the following may occur within the application area (Parks and Wildlife, 2016):

- Southern *Banksia attenuata* woodlands (priority 3 PEC);
- *Banksia* woodlands of the Swan Coastal Plain' (TEC listed as endangered under the *Environment Protection and Biodiversity Conservation Act 1999* [EPBC Act]);
- *Corymbia calophylla* woodlands on heavy soils of the southern Swan Coastal Plain (TEC endorsed by the Western Australian Minister for Environment); and
- *Corymbia calophylla* - *Xanthorrhoea preissii* woodlands and shrublands, Swan Coastal Plain (TEC endorsed by the Western Australian Minister for Environment and listed as endangered under the EPBC Act).

Parks and Wildlife advised that potential impacts to conservation significant flora, fauna and communities would be negated by restricting clearing to vegetation in degraded to completely degraded (Keighery, 1994) condition (Parks and Wildlife, 2016). The application area has been reduced from two hectares within a 14 hectare footprint to 0.632 hectares during the assessment of the application. The reduced area has minimised impacts to vegetation in good to very good (Keighery, 1994) condition, and Parks and Wildlife advised that this has reduced the risk of potential environmental impacts (Parks and Wildlife, 2017).

Mechanical clearing increases the risk of spreading weeds and dieback into native vegetation adjacent to the application area. Weeds can decrease the biodiversity value of an area as they out-compete native vegetation for available resources, contribute to land degradation and increase the frequency and intensity of fires (Department of Environment and Conservation, 2011). Potential impacts to biodiversity outside the application area as a result of the proposed clearing may be minimised by the implementation of weed and dieback management practices.

Given the reduction in the application area to 0.632 hectares of mostly degraded to good (Keighery, 1994) vegetation along a 3.6 kilometre stretch of Depiazzi and Banksia Road reserves, the proposed clearing is not likely to contain a high level of biological diversity.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
Department of Environment and Conservation (2011)
DER (2016)
Keighery (1994)
Parks and Wildlife (2007-)
Parks and Wildlife (2016)
Parks and Wildlife (2017)

GIS Databases:
- Aerial imagery
- Remnant vegetation
- SAC bio datasets (accessed February 2017)

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments Proposed clearing is not likely to be at variance to this Principle

The application area is part of a vegetated corridor within Depiazzi and Banksia Road reserves that ranges from completely degraded to very good (Keighery, 1994) condition within an extensively cleared area. This vegetated corridor provides nearly continuous vegetation that Parks and Wildlife advised “provides a linkage to a larger area of habitat to the immediate south and a small habitat remnant in private property at the northern end of the [application] area” (Parks and Wildlife, 2016).

State Forest and conservation estate located 450 to 600 metres east and south of the application area provides the highest quality fauna habitat in the local area (10 kilometre radius). Outside of these areas, fauna habitat is restricted to fragmented patches and corridors surrounded by areas cleared for agricultural and residential land uses. The application area provides an ecological linkage that is mapped in the South West Regional Ecological Linkage Technical Report as a remnant in close proximity to a regionally significant ecological linkage, and ranked as ‘1c’ (Molloy et al., 2009). The ranking system ranges from 1a to 3c, whereby 1c is the third-highest ranking for native vegetation in supporting an ecological linkage (Molloy et al., 2009).

Six threatened, two priority four, one other specially protected fauna and two migratory bird species protected under international agreement have been recorded within the local area (Parks and Wildlife, 2007-). Of these, arboreal and terrestrial species such as the chuditch (western quoll; *Dasyurus geoffroi*), western ringtail possum (WRP; *Pseudocheirus occidentalis*) and southern brush-tailed phascogale (*Phascogale tapoatafa* subsp. *tapoatafa*), all listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950*, and quenda (southern brown bandicoot; *Isoodon obesulus* subsp. *fusciventer*) (priority 4) are likely to utilise the ecological linkage for movement between other remnants of native vegetation.

The application area is mapped as ‘Category C’ habitat for the WRP by Parks and Wildlife (Shedley and Williams, 2014). WRP habitat categories are based on measures of WRP density and habitat quality, whereby Category A is considered to be have a ‘very high’ suitability for WRP and Category E is considered to have a ‘very low’ suitability for WRP (Shedley and Williams, 2014). Category C habitat is important for maintaining habitat connectivity and allowing for species movement between remnants of native vegetation in the local area. Parks and Wildlife advised that restricting clearing to vegetation in degraded to completely degraded (Keighery, 1994) condition would minimise impact to WRP habitat (Parks and Wildlife, 2016).

Given the application area is 0.632 hectares in size, spread along a 3.6 kilometre stretch of road, and the applicant has taken measures to avoid the majority of vegetation in good to very good (Keighery, 1994) condition within the road reserves, the proposed clearing is not likely to sever or significantly impact the linkage values of the vegetated corridor.

Depiazzi and Banksia Road reserves contain potential foraging habitat for Carnaby’s cockatoo, Baudin’s cockatoo and the forest red-tailed black cockatoo (DER, 2016). While trees of a size suitable to bear hollows were observed within the road reserves during a site inspection, no hollows suitable for nesting by black cockatoos were observed (DER, 2016). The application area containing 0.632 hectares of native vegetation in mostly degraded to good (Keighery, 1994) condition is not likely to comprise significant foraging or roosting black cockatoo habitat.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
DER (2016)
Keighery (1994)
Molloy et al. (2009)
Parks and Wildlife (2007-)
Parks and Wildlife (2016)
Shedley and Williams (2014)

GIS Databases:
- Aerial imagery
- Parks and Wildlife tenure

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments **Proposed clearing is not likely to be at variance to this Principle**

A total of six rare flora species have been recorded in the local area (10 kilometre radius). Of these, Parks and Wildlife advised that vegetation in good (Keighery, 1994) or better condition within Banksia Road reserve provides suitable habitat for one species of rare flora, which has been recorded in a road reserve within two kilometres of the application area (Parks and Wildlife, 2016). Conservation advice produced by the Threatened Species Scientific Committee (TSSC) for this rare flora species states that it is listed as critically endangered under both the WC Act and the EPBC Act as a result of its restricted area of occupancy, low population size and restricted distribution that make it susceptible to ongoing threats (TSSC, 2009).

Parks and Wildlife advised that impacts to rare flora would be negated by restricting clearing to vegetation in a degraded to completely degraded (Keighery, 1994) condition (Parks and Wildlife, 2016). During the assessment, the application area was reduced from two hectares within a 14 hectare footprint to 0.632 hectares of vegetation, the majority of which is in degraded to good condition (DER, 2016).

A total of 0.206 hectares of the application area is located within Banksia Road reserve, containing vegetation in degraded to good (Keighery, 1994) condition (DER, 2016). The application area within Banksia Road reserve ranges from one to four metres in width, retaining a corridor of native vegetation approximately 10 to 15 metres in width.

Given the limited area and condition of vegetation proposed to be cleared, the risk of impacts to rare flora is considered to be low, and the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
Keighery (1994)
Parks and Wildlife (2016)
TSSC (2009)

GIS Databases:
- SAC bio datasets (accessed February 2017)

(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.

Comments **Proposed clearing may be at variance to this Principle**

The application area contains two broad vegetation types, including a jarrah-marri open forest over heavy soils, and an open forest dominated by jarrah, marri, *Banksia grandis* and *Banksia attenuata* over sandy soils (DER, 2016; Parks and Wildlife, 2016).

Four threatened ecological communities (TEC) have been recorded within the local area (10 kilometre radius). Of these, three TECs may occur within vegetation in good (Keighery, 1994) or better condition within Depiazzi and Banksia Road reserves, of which a portion may occur within the application area.

The priority 3 ecological community 'southern *Banksia attenuata* woodlands' has been recorded in adjacent vegetation east of the northern third of Depiazzi Road reserve. This community is synonymous with the '*Banksia* woodlands of the Swan Coastal Plain' TEC listed as endangered under the EPBC Act (TSSC, 2016). The *Banksia* woodlands of the Swan Coastal Plain typically occurs over sandy soils from Jurien Bay to Dunsborough, and extend to the Whicher and Darling escarpments (TSSC, 2016). Conservation advice for this TEC states that the principal structural features of the community are a distinctive upper sclerophyllous layer of low trees, typically dominated or codominated by one or more listed *Banksia* species, including *Banksia attenuata* (TSSC, 2016). The community may also have an emergent tree layer of jarrah and marri (TSSC, 2016). Given the presence of *Banksia attenuata* with jarrah and marri, this community may be present over sandy soils within the application area (TSSC, 2016).

Parks and Wildlife has advised that areas of jarrah-marri open forest over heavy soils may represent one of the following TECs (Parks and Wildlife, 2016):

- *Corymbia calophylla* woodlands on heavy soils of the southern Swan Coastal Plain; or
- *Corymbia calophylla* - *Xanthorrhoea preissii* woodlands and shrublands, Swan Coastal Plain.

Parks and Wildlife advised that potential impacts to TECs would be negated by limiting clearing to areas in degraded and completely degraded (Keighery, 1994) condition (Parks and Wildlife, 2016). During the assessment, the application area was reduced from two hectares within a 14 hectare footprint to 0.632 hectares of vegetation, the majority of which is in degraded to good condition (DER, 2016). The reduction in application area has significantly reduced potential impacts to areas with the highest risk of comprising a TEC.

Given the above, the proposed clearing may be at variance to this Principle. Noting the application area is one to four metres wide, avoiding a corridor of native vegetation approximately 10 to 15 metres in width within Banksia Road reserve and patches of native vegetation 10 to 40 metres in width within Depiazzi Road reserve, the scale of clearing proposed within the existing vegetated corridor is not likely to impact the conservation of any occurrence of a TEC if they are present within the application area.

Methodology References:
DER (2016)
Parks and Wildlife (2016)
TSSC (2016)

GIS Databases:
- SAC bio datasets (accessed February 2017)

(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.

Comments Proposed clearing is not likely be at variance to this Principle

The application area is located within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, which has approximately 39 per cent of its pre-European extent remaining (Government of Western Australia, 2016). The local area (10 kilometre radius) has been extensively cleared, with 27 per cent native vegetation remaining.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). Both of the mapped Beard vegetation associations and two of the three mapped Heddle vegetation complexes occur at below the 30 per cent threshold (Government of Western Australia, 2016; Parks and Wildlife, 2015).

The application area contains roadside vegetation that is in a completely degraded to very good (Keighery, 1994) condition. Vegetation that is in a completely degraded to degraded (Keighery, 1994) condition is not considered representative of the pre-European vegetation types mapped within the application area (DER, 2016). The majority of vegetation within the application area is in degraded to good (Keighery, 1994) condition.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion* - Swan Coastal Plain	1,501,222	578,432	39	38
Shire* - Shire of Dardanup	52,831	25,307	48	82
Beard vegetation association in bioregion*				
968	136,188	8,967	7	22
1182	12,309	1,400	11	6
Heddle vegetation complex **				
Cartis Complex	7,540.84	5,111.12	68	53
Dardanup Complex	9,504.02	630.38	7	2
Guildford Complex	92,496.58	4,963.04	5	0.3

As discussed in Principle (b), the vegetation within Depiazzi and Banksia Road reserves provides an ecological linkage in a north to south direction. Given the application area is 0.632 hectares in size spread along a 3.6 kilometre stretch of road and avoids the majority of vegetation in good to very good (Keighery, 1994) condition within the road reserves, the proposed clearing is not likely to impact this ecological linkage.

While the vegetation within Depiazzi and Banksia Road reserves is a significant remnant within an extensively cleared area, the application area comprising 0.632 hectares of mostly degraded to good (Keighery, 1994) condition vegetation is not likely to be a significant remnant.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
Commonwealth of Australia (2001)
DER (2016)

*Government of Western Australia (2016)
**Parks and Wildlife (2015)

GIS Databases:
- Remnant vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposed clearing is at variance to this Principle

One dampland multiple use category wetland is mapped within the application area. Approximately 0.045 hectares of the application area is located within the wetland, which has a total mapped area of 20 hectares.

The wetland has been extensively cleared for agriculture, which may have influenced its hydrological regime. The accuracy of the mapped extent of the wetland could not be confirmed during the site inspection (DER, 2016).

Given the occurrence of a mapped wetland within the application area, the proposed clearing is at variance to this Principle.

Noting the level of existing disturbance within the wetland, the size and shape of the application area, and the proportion of degraded to completely degraded (Keighery, 1994) condition of vegetation within the mapped extent of the wetlands, the proposed clearing is unlikely to significantly impact on the wetland.

Methodology References:
DER (2016)
Keighery (1994)

GIS Database:
- Hydrography, linear

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments Proposed clearing is not likely to be at variance to this Principle

The application area is mapped as containing 'cartis footslope phase' soils, which is described as very low relief foot slopes with rapidly drained deep bleached grey sands and occasionally deep yellow brown sands with minor occurrence of gravels (DAFWA, 2016). A portion of two wetlands are mapped within the application area, however both have been degraded by broad-scale historic clearing. Groundwater salinity within the application area is brackish to saline.

The application area occurs on a minor, gradual downwards slope in an east to east direction. The soil type mapped within the application area may be susceptible to erosion following the removal of vegetation (DAFWA, 2016). However, given that the proposed clearing is linear in shape and limited to 0.632 hectares, the risk of land degradation as a result of erosion is low.

Given the linear shape, size of the application area, soil types present and condition (Keighery, 1994) of vegetation within the application area and surrounds, the proposed clearing is not likely to cause appreciable land degradation via salinity, waterlogging or eutrophication.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
DAFWA (2016)
Keighery (1994)

GIS Databases:
- Topographic contours, statewide

(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.

Comments Proposed clearing is not likely to be at variance to this Principle

The nearest conservation areas are the Boyanup State Forest, located 450 metres east of the application area, and Dardanup Conservation Park, located 600 metres south of the application area.

Banksia Road and Depiazzi Road reserves share semi-continuous vegetation with the State Forest and Conservation Park, and may therefore provide an ecological linkage between conservation areas and other remnants of native vegetation. As discussed in principle (b), the proposed clearing is not likely to impact the linkage values of the road reserves.

The local area has a moderate level of weed cover (DER 2016). Given the existing presence of weeds and the distance to the Boyanup State Forest and Dardanup Conservation Park, the proposed clearing is not likely to

impact the environmental values of any conservation area.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
DER (2016)
Keighery (1994)

GIS Databases:
- Imagery
- Parks and Wildlife tenure

(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.

Comments Proposed clearing is not likely to be at variance to this Principle

As discussed in Principle (f), the edge of one dampland wetland is mapped within the application area. The majority of this wetland has been previously cleared.

Given that the hydrology of this wetland is likely to have been highly modified by historic clearing in the area, and considering the scale of the proposed clearing, it is not likely to cause any further deterioration in the quality of surface water.

Groundwater salinity within the application area is mapped as 1,000 to 7,000 milligrams per litre total dissolved solids. The clearing of 0.632 hectares is not likely to cause further deterioration in the quality of groundwater on a local or regional scale.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology GIS Databases:
- Geomorphic wetlands (classification), Swan Coastal Plain
- Groundwater salinity, statewide
- Hydrography, linear
- Imagery

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments Proposed clearing is not likely to be at variance to this Principle

The mapped soil type within the application area contains well-drained soils that are not likely to be susceptible to flooding following the removal of vegetation (DAFWA, 2016). One wetland is mapped within the application area, both of which have been highly disturbed by historic land clearing and road infrastructure.

The proposed clearing occurs on well-drained soils, is linear in shape and restricted to 0.632 hectares. Therefore, it is not likely to cause or exacerbate the incidence or intensity of flooding.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
DAFWA (2016)

GIS Databases:
- Geomorphic wetlands (classification), Swan Coastal Plain
- Imagery

Planning instruments and other relevant matters.

- Comments** The applicant proposes to clear 0.632 hectares of native vegetation within Depiazzi and Banksia Road reserves, Dardanup and Crooked Brook, for the purpose of road widening and upgrades.
- The original application applied to clear up to three hectares of native vegetation. On 3 October 2016, the applicant advised that the required clearing for the proposed road upgrades had been reassessed, and requested to amend the application to clear two hectares.
- A DER Delegated Officer wrote to the applicant on 23 December 2016, advising that a preliminary assessment of the application identified potential impacts to rare flora, TECs, a PEC, an ecological linkage and a significant remnant within an extensively cleared area (Ref: A1375518).
- On 3 March 2017, the applicant reduced the application area to 0.632 hectares (Ref: A1400219).
- The clearing permit application was advertised in *The West Australian* on 1 August 2016 for a 21 day public submission period. No submissions were received.
- There are no Aboriginal Sites of Significance mapped within the application area.
- Methodology** GIS Databases:
Aboriginal Sites of Significance

4. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Department of Agriculture and Food Western Australia (DAFWA) (2016) NRMIInfo (Natural Resource Management) Portal. Department of Agriculture and Food Western Australia. URL: <http://maps.agric.wa.gov.au/nrmiinfo/>. Accessed September 2016.
- Department of Environment and Conservation (2011) Invasive Plant Prioritisation, Department of Environment and Conservation, Perth.
- Department of Environment Regulation (DER) (2016) CPS 7175/1 site inspection report. Department of Environment Regulation (DER REF: A1171025).
- Department of Parks and Wildlife (Parks and Wildlife) (2007-) Naturemap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife, Perth. URL: <http://naturemap.dpaw.wa.gov.au/default.aspx> (Accessed June 2016).
- Department of Parks and Wildlife (Parks and Wildlife) (2015) 2015 South West Forest and Swan Coastal Plain Vegetation Complex Statistics: a report prepared for the Department of Environment Regulation. Current as of March 2015. Department of Parks and Wildlife, Perth, Western Australia.
- Department of Parks and Wildlife (Parks and Wildlife) (2016) Advice received from the Department of Parks and Wildlife on 13 March 2017 (DER REF: A1400240).
- Department of Parks and Wildlife (Parks and Wildlife) (2017) Advice received from the Department of Parks and Wildlife on 20 September 2016 (DER REF: A1167174).
- Government of Western Australia (2016) 2016 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2016. WA Department of Parks and Wildlife, Perth.
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