



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 4752/ 1

File Number: 2011/006893-1

Duration of Permit: From 19 December 2011 to 19 December 2013

PERMIT HOLDER

Shire of Serpentine Jarrahdale

LAND ON WHICH CLEARING IS TO BE DONE

CROWN RESERVE 23793 (MARDELLA 6125)

AUTHORISED ACTIVITY

Clearing of up to 0.17 hectares of native vegetation within the area cross hatched yellow on attached Plan 4752/1.

CONDITIONS

1. 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) shall only move soils in *dry* conditions;
- (c) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (d) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

2. Offsets

If part or all of the clearing to be done is or may be at variance with one or more of the clearing principles, then the Permit Holder must implement an *offset* in accordance with conditions 2(a) and (b) of this Permit with respect to that clearing.

(a) Determination of *offsets*:

- (i) in determining the *offset* to be implemented with respect to a particular area of native vegetation proposed to be cleared under this Permit, the Permit Holder must have regard to the *offset* principles contained in condition 2(b) of this Permit;
- (ii) once the Permit Holder has developed an *offset proposal*, the Permit Holder must provide that *offset proposal* to the CEO for the CEO's approval by 30 June 2012, and prior to implementing the *offset*;
- (iii) the Permit Holder shall implement the *offset proposal* approved under condition 2(a)(ii); and
- (iv) each *offset proposal* shall include a *direct offset*, timing for implementation of the *offset proposal* and may additionally include *contributing offsets*.

(b) For the purpose of this condition, the *offset* principles are as follows:

- (i) *direct offsets* should directly counterbalance the loss of the native vegetation;
- (ii) *contributing offsets* should complement and enhance the *direct offset*;
- (iii) *offsets* are implemented only once all avenues to avoid, minimise, rectify or reduce environmental impacts have been exhausted;
- (iv) the environmental values, habitat, species, *ecological community*, physical area, ecosystem, landscape, and hydrology of the *offset* should be the same as, or better than, that of the area of native vegetation being *offset*;
- (v) a ratio greater than 1:1 should be applied to the size of the area of native vegetation that is offset to compensate for the risk that the *offset* may fail;
- (vi) *offsets* must entail a robust and consistent assessment process;

- (vii) in determining an appropriate *offset*, consideration should be given to ecosystem function, rarity and type of *ecological community*, vegetation *condition*, habitat quality and area of native vegetation cleared;
- (viii) the *offset* should either result in no net loss of native vegetation, or lead to a net gain in native vegetation and improve the *condition* of the natural environment;
- (ix) *offsets* must satisfy all statutory requirements;
- (x) *offsets* must be clearly defined, documented and audited;
- (xi) *offsets* must ensure a long-term (10-30 year) benefit; and
- (xii) an *environmental specialist* must be involved in the design, assessment and monitoring of *offsets*.

3. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the species composition, structure and density of the cleared area;
 - (ii) 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;
 - (iii) the date that the area was cleared; and
 - (iv) the size of the area cleared (in hectares).
- (b) In relation to the offset of areas pursuant to condition 2:
 - (i) the location of any area of *offsets* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) a description of the *offset* activities undertaken; and
 - (iii) the size of the *offset* area (in hectares).

4. Reporting

- (a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 3 of this Permit and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.
- (b) Prior to 15 September 2013, the permit holder must provide to the CEO a written report of records required under condition 3 of this Permit where these records have not already been provided under condition 4 (a) of this Permit.

DEFINITIONS

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

condition means the rating given to native vegetation using the *Keighery scale* and refers to the degree of change in the structure, density and species present in the particular vegetation in comparison to undisturbed vegetation of the same type;

contributing offset/s has the same meaning as is given to that term in the Environmental Protection Authority's *Position Statement No.9: Environmental Offsets*, January 2006;

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

direct offset/s has the same meaning as is given to that term in the Environmental Protection Authority's *Position Statement No.9: Environmental Offsets*, January 2006;

dry conditions means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches;

ecological community/ies means a naturally occurring biological assemblage that occurs in a particular type of habitat (English and Blythe, 1997; 1999);

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

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

Keighery scale means the vegetation condition scale described in *Bushland Plant Survey: A Guide to Plant Community Survey for the Community (1994)* as developed by B.J. Keighery and published by the Wildflower Society of WA (Inc). Nedlands, Western Australia;

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;

offset/s means an offset required to be implemented under condition 2 of this Permit;

offset proposal means an *offset* determined by the Permit Holder in accordance with condition 2 of this Permit;

weed/s means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the Agriculture and Related Resources Protection Act 1976.

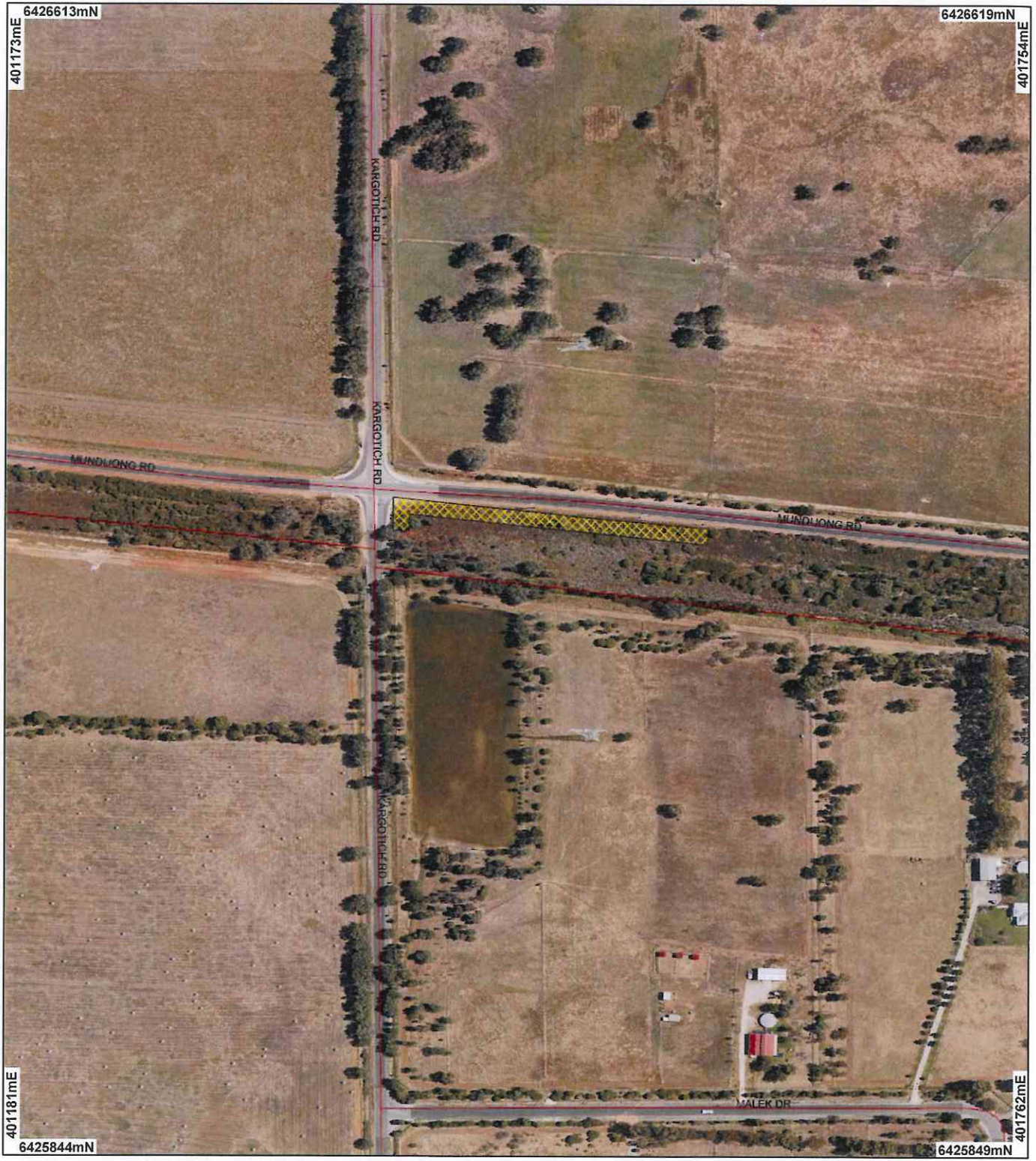


M Warnock
A/ MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

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



15 December 2011

Plan 4752/1



LEGEND

Clearing Instruments

-  Areas Approved to Clear
-  Road Centrelines
- Swan Coastal Plain Central
20cm Orthomosaic - Landgate
2009



Scale 1:3409

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

M Warnock Date 15/12/11

M Warnock

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

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



Department of Environment and Conservation

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1. Application details

1.1. Permit application details

Permit application No.: 4752/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Shire of Serpentine - Jarrahdale

1.3. Property details

Property: CROWN RESERVE 23793 (MARDELLA 6125)
Local Government Area: Shire of Serpentine- Jarrahdale

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.17		Mechanical Removal	Road construction or maintenance (Black Spot funding)

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 15 December 2011

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
Beard Vegetation Association 968; Medium woodland; jarrah, marri & wandoo (Shepherd, 2009).	The proposed clearing area consists of 0.17ha of roadside native vegetation for the purpose of modifying the intersection of Mundijong Road and Kargotich Road intersection through the installation of slip lanes to increase commuter safety (a Black Spot funded project).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The condition of the vegetation under application was obtained through aerial photography (Swan Coastal Plain Central 20cm Orthomosaic - Landgate 2009) and a Department of Environment and Conservation site visit (DEC, 2011a).
		To	
		Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	
	The area under application has been mapped within the boundary of a threatened ecological community 'Herb Rich Shrublands in Claypans'. This community consists of a variety of herb species including <i>Centrolepis aristata</i> (Pointed Centrolepis).	To	
		Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	

3. Assessment of application against clearing principles

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

Comments

Proposal is at variance to this Principle

The proposed clearing area consists of 0.17ha of roadside native vegetation ranging from good to excellent (Keighery, 1994) condition. The application is for the purpose of modifying the intersection of Mundijong Road and Kargotich Road through the installation of slip lanes to increase commuter safety (a Black Spot funded project).

The application area is within Bush Forever Site 360 (Government of Western Australia, 2000) and forms part of the 'Herb Rich Shrublands in Claypans' community. This is a threatened ecological community (TEC). The application area also contains a palusplain type wetland and is assigned a Conservation management category.

A flora survey conducted in December 2011, by the applicant, recorded a total of 65 flora taxa within the application area of which 29 species were introduced to the area. Of the identified flora taxa there were no species recorded as threatened. One priority 3 flora species, *Stylidium longitubum* was identified.

A requirement to offset the clearing of 0.17ha of a TEC and control weeds and dieback will assist in mitigating impacts to the surrounding Bush Forever Site, palusplain wetland and TEC.

Given that the application is within Bush Forever Site 360, the vegetation under application is mapped as a TEC and sections of the vegetation under application are in a good to excellent (Keighery, 1994) condition (DEC, 2011), it is considered the application area comprises a high level of biodiversity and is at variance to this principle. Noting the small size of the area under application and that less than 0.05 percent of the known TEC will be impacted upon, it is unlikely that the proposed clearing will significantly impact the biodiversity in the local area.

Methodology References:
DEC (2011)
Keighery (1994)

GIS Databases:
- Bush Forever
- DEC Tenure
-SAC Bio datasets (Accesssed 12/12/2011)

(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 **Proposal is not likely to be at variance to this Principle**

There are 23 fauna species of conservation significance recorded within a 10km radius of the application area (DEC, 2007 -).

Due to the small size of clearing (0.17ha) and adjacent vegetation remaining it is considered that the proposed clearing is unlikely to impact upon significant fauna habitat and is therefore not likely to be at variance to this principle.

Methodology References:
DEC (2007-)

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

Comments **Proposal is not likely to be at variance to this Principle**

Within a 10km radius of the area under application, one declared rare flora (DRF) species *Verticordia plumosa* var. *pleiobotrya* A.S George was recorded on the roadside within the same road reserve as the application area. This species occurs on the same soil and vegetation type as the mapped 'Herb Rich Shrublands in Claypans' TEC.

A DEC site visit in September did not observe this species nor any species of DRF (DEC, 2011a).

A recent flora survey conducted by the applicant in December 2011 did not identify any DRF species within the application area. *Verticordia plumosa* var. *pleiobotrya* A.S George flowers in summer from October to December with pink flowers.

Given the above, the application is not likely to be at variance to this principle.

Methodology References:
DEC (2011)

GIS Databases:
- Bush Forever
-SAC Bio datasets (Accesssed 12/12/2011)

(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 **Proposal is at variance to this Principle**

The vegetation under application is mapped within a Threatened Ecological Community (TEC) referred to as Floristic Community Type (FCT) SCP08 - 'Herb Rich Shrublands in Claypans'. The vegetation in the application area contains flora species typical of this TEC, including *Centrolepis aristata*, and contains clay soils (DEC, 2011a).

This TEC is known to cover a total area of 251.9ha with 139.3ha (55.29 per cent) secured in conservation estate. Following the proposed clearing of 0.17ha of this TEC, 139.1ha protected within conservation reserves (55.26 per cent). This is a reduction in known total area by 0.07 per cent and a reduction in area that is secured in conservation estate by 0.03 per cent.

The TEC that occurs within the application area occurs on the northeast edge of the remnant and totals approximately 5ha. All is within the Bush Forever site 360. The proposed clearing is likely to contribute to fragmentation and edge effects of this TEC.

A requirement to provide an offset and control weeds and dieback will assist in mitigating impacts to the surrounding TEC.

Given the above, the application is at variance to this principle.

Methodology References:
DEC (2011)

GIS Databases:
- Bush Forever
-SAC Bio datasets (Accessed 12/12/2011)

(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 Proposal is at variance to this Principle

The local area (10km radius) has been extensively cleared and approximately 25 per cent of its pre-European vegetation remains. The mapped Beard vegetation type under application is 7 per cent (see table below), which is below the threshold level of 30 per cent recommended in the National Objectives Targets for Biodiversity Conservation below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The vegetation under applicant is considered significant as a remnant as it contains a TEC of which 251.9ha remain, priority flora and is a Bush Forever Site.

Given the above, the proposed clearing is at variance to Principle (e). A requirement to offset the proposed clearing will assist in mitigating impacts to this significant remnant in an area that has been extensively cleared.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion				
Swan Coastal Plain	1,501,209	587,889	39	33
Shire	296,716	99,673	34	55
Shire of Serpentine-Jarrahdale				
Beard Vegetation Association in Bioregion				
968*	136,188	9,850	7	15

*Shepherd (2009)

Methodology References:
-Commonwealth of Australia (2001)
- Shepherd (2009)

GIS Databases
-NLWA, Current Extent of Native Vegetation
-Pre-European 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 Proposal is at variance to this Principle

The application area is mapped as a palusplain type wetland and is assigned a Conservation management category. Analysis of DEC's Geomorphic Wetlands Swan Coastal Plain dataset (DEC, 2010) indicates that 3.7 per cent (9,051ha) of Conservation management category palusplain wetlands remain on the Swan Coastal

Plain, by area. This indicates that the palusplain wetland in the application area is important for its representative value.

Given the vegetation under application is associated with a wetland the proposed clearing is at variance to Principle (f).

A requirement to provide an offset and control weeds and dieback will assist in mitigating impacts to the surrounding palusplain wetland.

Methodology References:
- Commonwealth of Australia (2001)
- Shepherd (2009)

GIS Databases
- NLWA, Current Extent of Native Vegetation
- Pre-European Vegetation

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

Comments **Proposal is not likely to be at variance to this Principle**
The area under application is mapped as Wd6; sandy, acidic yellow mottled soils (Northcote et al 1960-68) however a DEC site visit confirmed the presence of clay pan soils consistent with the mapped TEC Herb Rich Shrublands in Claypans (DEC, 2011a).

Given the small area proposed (0.17ha) to be cleared, the vegetation remaining in the local area and adjacent to the proposed clearing, it is not considered likely for the proposed clearing to cause appreciable land degradation. Therefore the application is not likely to be at variance to this principle.

Methodology References:
DEC (2011)
Northcote et al (1960-68)

(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 **Proposal is at variance to this Principle**
The application area is within Bush Forever Site 360, referred to as Mundijong and Watkins Roads Bushland, Mundijong/ Peel Estate and covers a total area of 42 hectares (Government of Western Australia, 2000)

The proposed clearing is situated in the middle section of Bush Forever 360 and is likely to contribute towards fragmentation (reduction of 0.4 per cent of the Bush Forever site) and edge effects of the Bush Forever site. Weed and dieback management practices will assist in mitigating the risk of weed and dieback spreading to the surrounding vegetated areas.

Given that the application proposes to clear vegetation within a Bush Forever site and is likely to impact upon surrounding vegetation within and around the Bush Forever site, the application is at variance to this principle.

Methodology References;
Government of Western Australia (2000)

GIS Databases
- Bush Forever
- DEC 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 **Proposal is not likely to be at variance to this Principle**
The application area is mapped as a palusplain type wetland and is assigned a Conservation management category.

Given the small area (0.17ha) proposed to be cleared, it is not considered likely for the proposed clearing to cause deterioration in surface or underground water, therefore the application is not likely to be at variance to this principle.

Methodology GIS databases
-Hydrography, linear
-Geomorphic Wetlands (classification), Swan Coastal Plain

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

Comments **Proposal is not likely to be at variance to this Principle**
Given small area (0.17) proposed to be cleared, it is not likely the application will be at variance to this principle.

Methodology GIS databases
-Hydrography, linear
-Geomorphic Wetlands (classification), Swan Coastal Plain

Planning instruments, Native Title, Previous EPA decisions or other matters.

Comments
The proposed clearing is funded through the Black Spot Program. The Black Spot Program is designed to reduce the risk of accidents on Australian roads by targeting projects in those road locations where crashes are occurring.

The area under application is a Crown Reserve and is subject to the Peel- Harvey Catchment Statement of Planning Policy (Government of Western Australia, 2000).

No public submissions have been received.

The majority of the application area is zoned as Public Open Space.

Methodology References;
Government of Western Australia (2000)

GIS databases
-Town Planning Scheme Zones

4. References

DEC (2010) Geomorphic Wetlands in the Swan Coastal Plain dataset, Department of Environment and Conservation, WA.
DEC (2011) Threatened Ecological Communities Database version 4-1-3, Reference 24-1211EC, Species and Communities Branch, Department of Environment and Conservation, WA.
DEC (2011a) Site Inspection Report for Clearing Permit Application CPS 4752/1 Crown Reserve 23793, Mardella. Site inspection undertaken 21/09/2011. Department of Environment and Conservation, Western Australia (DEC REF A459494).
Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.
Hill, A.L., Semenuik, C. A, Semenuik, V. Del Marco, A. (1996) Wetlands of the Swan Coastal Plain. Volume 2b, Wetland mapping, classification and evaluation. Wetland Atlas. WRC and DEP. Perth WA.
Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

5. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)