



## CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

<b>Purpose Permit number:</b>	CPS 4411/1
<b>Permit Holder:</b>	Shire of Bridgetown-Greenbushes
<b>Duration of Permit:</b>	19 September 2011 – 19 September 2016

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 maintenance and upgrades

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

Kendall Road reserve, Hester  
Krsuls Road reserve, Hester  
Wilkins Road reserve, Bridgetown  
Walter Road reserve, Bridgetown  
James Road reserve, North Greenbushes  
Kangaroo Gully Road reserve, Kangaroo Gully  
Giblett Road reserve, Bridgetown  
Maranup Ford Road reserve, Greenbushes  
Blackwood Park Road reserve  
Wilga Road reserve, Catterick  
Connell Road reserve, Hester  
Nelson Road reserve, Bridgetown  
Winnejup Road reserve, Winnejup

#### 3. Area of Clearing

The Permit Holder shall not clear more than 7.78 hectares of native vegetation within the combined areas cross-hatched yellow on attached Plan 4411/1a, Plan 4411/1b, Plan 4411/1c, Plan 4411/1d, Plan 4411/1e, Plan 4411/1f, Plan 4411/1g, Plan 4411/1h, Plan 4411/1i, Plan 4411/1j and 4411/1k.

#### 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 activities to the extent that the Permit Holder has the power to clear native vegetation for those activities under the *Local Government Act 1995* or any other written law.

#### 6. Compliance with Assessment Sequence and Management Procedures

Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

## PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

### **7. 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:

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

### **8. Dieback and weed control**

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

### **9. Fauna management**

(a) Prior to undertaking any clearing authorised under this Permit, the area(s) shall be inspected by a *fauna specialist* who shall:

- (i) identify *habitat trees* suitable to be utilised by Carnaby's black cockatoo (*Calyptorhynchus latirostris*), Baudins black cockatoo (*Calyptorhynchus baudinii*) and Red-tailed black cockatoo (*Calyptorhynchus banksii naso*); and
- (ii) inspect *habitat trees* identified under condition 9(a)(i) for the presence of Carnaby's black cockatoo (*Calyptorhynchus latirostris*), Baudins black cockatoo (*Calyptorhynchus baudinii*) and Red-tailed black cockatoo (*Calyptorhynchus banksii naso*).

(b) Where *habitat trees* identified under condition 9(a) contain hollows suitable for use by Carnaby's black cockatoo (*Calyptorhynchus latirostris*), Baudin's black cockatoo (*Calyptorhynchus baudinii*) and Red-tailed black cockatoo (*Calyptorhynchus banksii naso*), the Permit Holder shall retain these *habitat trees* in situ, or if this is not possible the Permit Holder shall:

- (i) remove and retain intact hollows;
- (ii) each removed and retained intact hollow shall be attached to a tree located within no more than 10 km from any clearing authorised under this Permit;
- (iii) each removed and retained intact hollow shall be attached to a tree within one month of removing it; and

(c) Within one week prior to undertaking any clearing authorised under this Permit, the Permit Holder shall engage a *fauna clearing person* to remove and relocate fauna identified under condition 9(a)(ii).

## PART III - RECORD KEEPING AND REPORTING

### **10. 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 fauna management pursuant to condition 9 of this Permit:
- (i) the location of each tree that contains hollows, 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;
  - (ii) the species name of fauna reasonably likely to utilise, or that have been observed utilising, the trees that contain hollows;
  - (iii) the location of surrogate trees for relocation with vacant hollows, 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; and
  - (iv) the location and date where relocated fauna was released, 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.

## 11. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
- (i) of records required under condition 10 of this Permit; and
  - (ii) concerning activities done by the Permit Holder under this Permit between 1 July and 30 June of the preceding year.
- (b) Prior to 19 September 2016, the Permit Holder must provide to the CEO a written report of records required under condition 10 of this Permit where these records have not already been provided under condition 11(a) of this Permit.

## DEFINITIONS

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

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

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

**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;

**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*.

**fauna clearing person** means a person who has obtained a licence from the Department, issued pursuant to the *Wildlife Conservation Regulations 1970* authorising them to take fauna;

**fauna specialist** means a person with training and specific work experience in fauna identification or faunal assemblage surveys of Western Australian fauna; and

**habitat tree(s)** means trees that have a diameter, at average adult human chest height, of greater than 50cm, healthy but with dead limbs and broken crowns that are likely to contain hollows and roosts suitable for native fauna, or where these are not present then healthy but with the potential to contain hollows and roosts.



Kelly Faulkner  
MANAGER  
NATIVE VEGETATION CONSERVATION BRANCH

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

25 August 2011

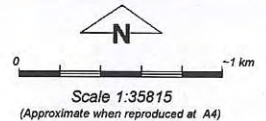


# Plan 4411/1a



## LEGEND

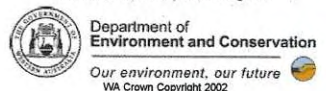
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|-----------------------------|------------------------|
| <b>Clearing Instruments</b> | <b>Bridgetown 50cm</b> |
| ■ Areas Approved to Clear   | Orthomosaic - Landgate |
| — Road Centrelines          | 2004                   |
| □ Cadastre                  |                        |
| ■ Bridgetown Townsite 20cm  |                        |
| Orthomosaic - Landgate      |                        |
| 2006                        |                        |



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

*K Fabikner* Date 25/3/11

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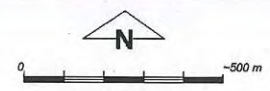


# Plan 4411/1b



## LEGEND

- |                             |                             |
|-----------------------------|-----------------------------|
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| — Road Centrelines          |                             |
| □ Cadastre                  |                             |
| □ Bridgetown Townsite 20cm  |                             |
| Orthomosaic - Landgate 2006 |                             |



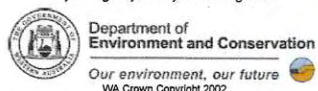
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Geocentric Datum Australia 1994

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*[Signature]*  
K Faulkner Date 25/9/11

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# Plan 4411/1c



## LEGEND

- Clearing instruments
- Areas Approved to Clear
- Road Centrelines
- Cadastre
- Bridgetown Townsite 20cm Orthomosaic - Landgate 2006
- Bridgetown 50cm Orthomosaic - Landgate 2004



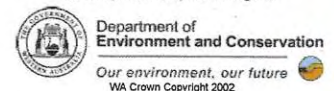
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K Faulkner

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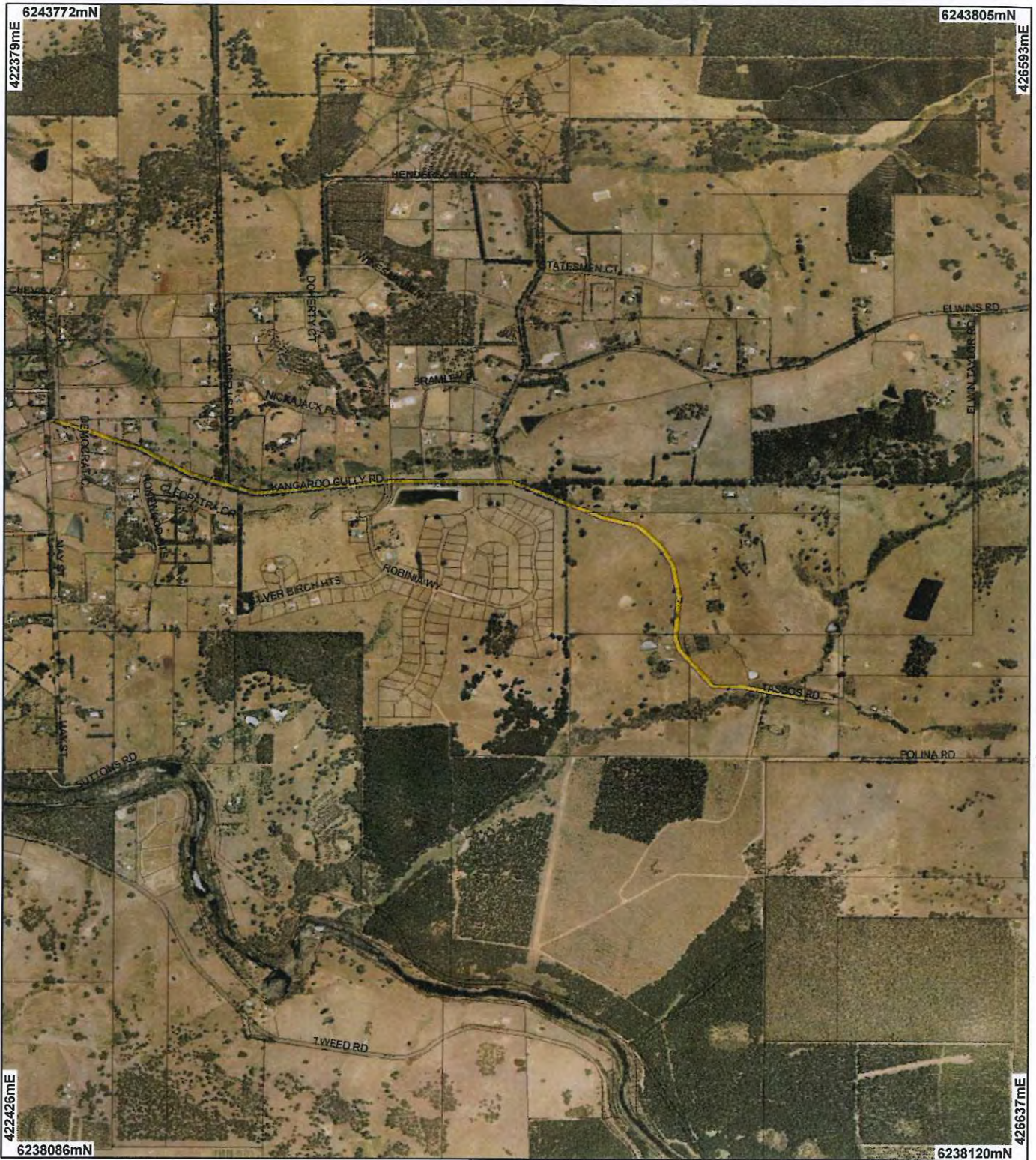


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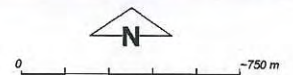


# Plan 4411/1d



## LEGEND

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|---------------------------------|-------------------------------|
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| Areas Approved to Clear         | <b>Orthomosaic - Landgate</b> |
| Road Centrelines                | <b>2004</b>                   |
| Cadastre                        |                               |
| <b>Bridgetown Townsite 20cm</b> |                               |
| <b>Orthomosaic - Landgate</b>   |                               |
| <b>2006</b>                     |                               |



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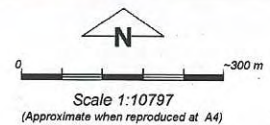


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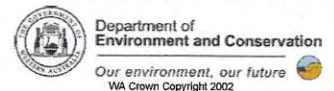
- Clearing instruments**
- Areas Approved to Clear
  - Road Centrelines
  - Cadastre
- Bridgetown 50cm Orthomosaic - Landgate 2004**
- Bridgetown Townsite 20cm Orthomosaic - Landgate 2006**



Geocentric Datum Australia 1994  
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*[Signature]* Date 25/3/11  
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\* Project Data. This data has not been quality assured. Please contact map author for details.

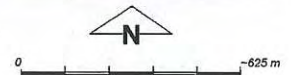


# Plan 4411/1f



## LEGEND

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|-----------------------------|------------------------|
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| ■ Road Centrelines          | 2004                   |
| □ Cadastre                  |                        |
| □ Bridgetown Townsite 20cm  |                        |
| □ Orthomosaic - Landgate    |                        |
| 2006                        |                        |



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(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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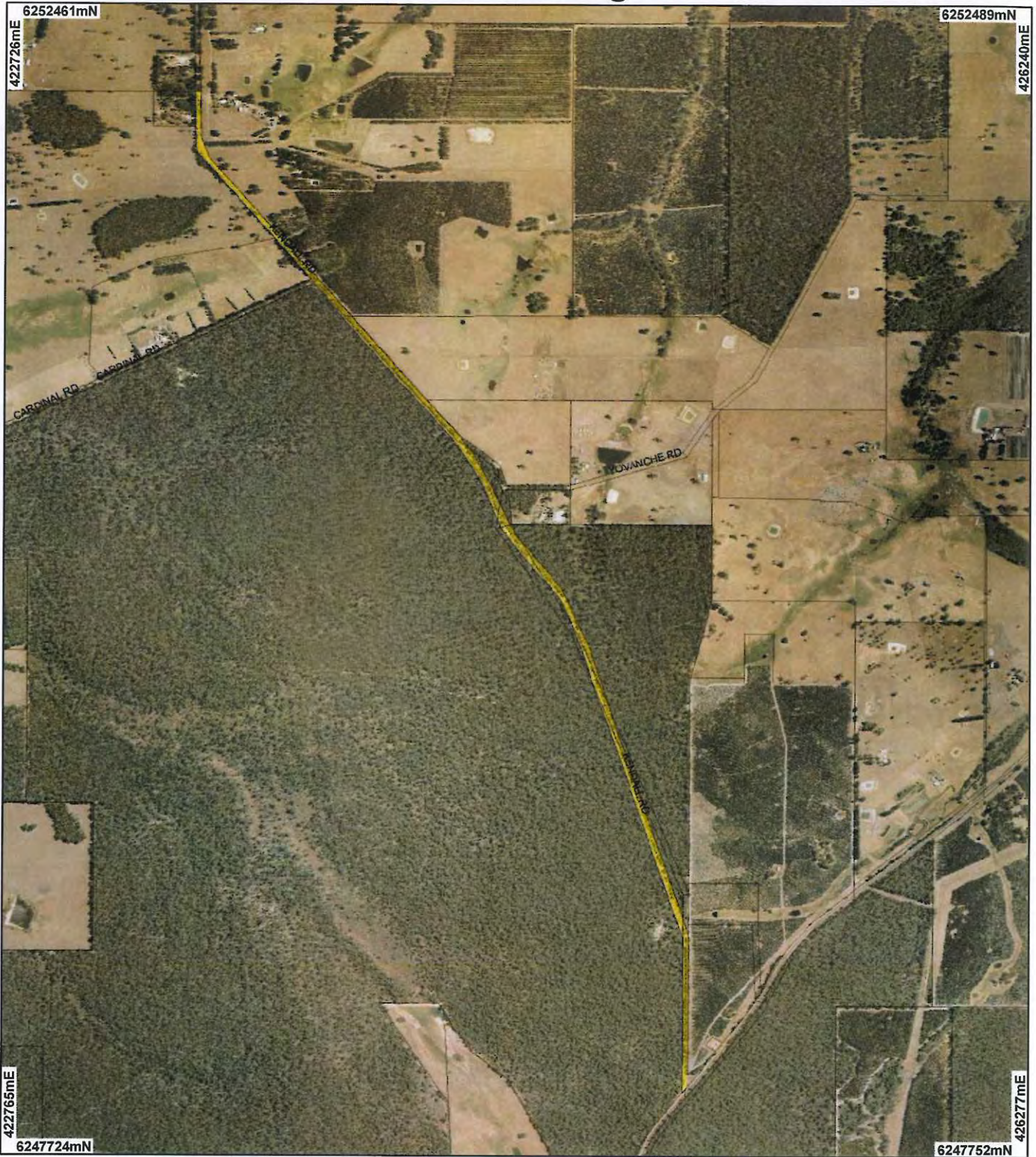


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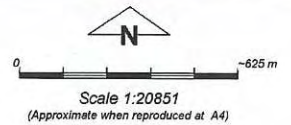


# Plan 4411/1g



## LEGEND

- Clearing Instruments**
- Areas Approved to Clear
  - Road Centrelines
  - Cadastre
- bridgetown 50cm  
Orthomosaic - Landgate  
2004**
- Bridgetown Townsite 20cm  
Orthomosaic - Landgate  
2006**



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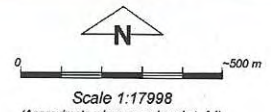


# Plan 4411/1h



## LEGEND

- Clearing Instruments**
- Areas Approved to Clear
  - Road Centrelines
  - Cadastre
- Bridgetown 50cm Orthomosaic - Landgate 2004**
- Bridgetown Townsite 20cm Orthomosaic - Landgate 2006**



Geocentric Datum Australia 1994

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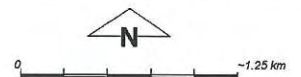


# Plan 4411/i



## LEGEND

- Clearing Instruments**
- Areas Approved to Clear
  - Road Centrelines
  - Cadastre
- Bridgetown 50cm Orthomosaic - Landgate 2004**
- Bridgetown Townsite 20cm Orthomosaic - Landgate 2006**



Scale 1:42178  
(Approximate when reproduced at A4)

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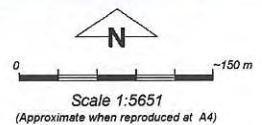


# Plan 4411/1j



## LEGEND

- Clearing Instruments
- Areas Approved to Clear
- Road Centrelines
- Cadastral
- Bridgetown Townsite 20cm Orthomosaic - Landgate 2006
- Bridgetown 50cm Orthomosaic - Landgate 2004



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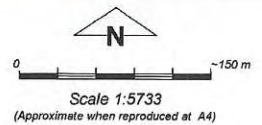


# Plan 4411/1k



## LEGEND

- |                                 |                               |
|---------------------------------|-------------------------------|
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| Areas Approved to Clear         | <b>Orthomosaic - Landgate</b> |
| Road Centrelines                | <b>2004</b>                   |
| Cadastre                        |                               |
| <b>Bridgetown Townsite 20cm</b> |                               |
| <b>Orthomosaic - Landgate</b>   |                               |
| <b>2006</b>                     |                               |



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## 1. Application details

### 1.1. Permit application details

Permit application No.: 4411/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Shire of Bridgetown - Greenbushes

### 1.3. Property details

Property:  
ROAD RESERVE ( CATTERICK 6255)  
ROAD RESERVE ( HESTER 6255)  
ROAD RESERVE ( BRIDGETOWN 6255)  
ROAD RESERVE ( NORTH GREENBUSHES 6254)  
ROAD RESERVE ( KANGAROO GULLY 6255)  
ROAD RESERVE ( GREENBUSHES 6254)  
ROAD RESERVE ( MARANUP 6256)  
ROAD RESERVE ( HESTER BROOK 6255)  
ROAD RESERVE ( WINNEJUP 6255)  
Local Government Area: Shire of Bridgetown - Greenbushes

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 25 August 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 3 Medium forest; jarrah-marri (Shepherd, 2009).	The Shire of Bridgetown-Greenbushes proposes to clear 7.78ha within 13 road reserves throughout the Shire. The road reserves under application are Kendall, Krsuls, Wilkins, Walter, James, Kangaroo Gully, Giblet, Marunup Ford, Blackwood Park, Wilga, Connell, Nelson and Winnejup. The clearing is needed to ensure roads meet the minimum requirement of a 6 metre seal, with the total width including the table drains and backslopes of 11 metres.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	Vegetation condition was confirmed during a DEC site inspection (DEC, 2011) undertaken on 3 August 2011
Beard vegetation association 992 Medium forest; jarrah & wandoo (Eucalyptus wandoo) (Shepherd, 2009).		To	
Mattiske vegetation complex Dwellingup (D1) Open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla on lateritic uplands in mainly humid and subhumid zones. (Mattiske and Havel, 1998).	It is considered that the road reserve that will be impacted mostly by the proposed clearing will be Winnejup Road. Winnejup Road is a narrow road that comprises an approximate 4 metre seal, with an approximate width of 5 to 7 metres including the table drain and backslopes.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	
Mattiske vegetation complex Catterick (CC1) Open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla mixed with Eucalyptus patens on slopes, Eucalyptus rudis and Banksia littoralis on			



valley floors in the humid zone (Mattiske and Havel, 1998).

Mattiske vegetation complex Newgalup 1 (NWg1)  
Woodland of *Corymbia calophylla*-*Eucalyptus marginata* subsp. *marginata* on slopes, open heath on shallow soils near granites, open forest of *Eucalyptus rudis*-*Eucalyptus wandoo* on the valley floors in the subhumid zone (Mattiske and Havel, 1998).

Mattiske vegetation complex Dalmore (DMg)  
Mosaic of woodland of *Eucalyptus wandoo* with some *Corymbia calophylla* on deeper soils and open heath of *Myrtaceae*-*Proteaceae* spp. and lithic complex on shallow soils near granite outcrops in subhumid to arid zones (Mattiske and Havel, 1998).

Mattiske vegetation complex Newgalup (NW1)  
Woodland of *Corymbia calophylla* and *Eucalyptus marginata* subsp. *marginata* with some *Eucalyptus wandoo* on upper slopes in the subhumid zone (Mattiske and Havel, 1998).

Mattiske vegetation complex Dalmore 1 (DM1)  
Woodland of *Corymbia calophylla*-*Eucalyptus marginata* subsp. *marginata* with occasional *Eucalyptus wandoo* on uplands in the subhumid zone (Mattiske and Havel, 1998).

Mattiske vegetation complex Balingup (BL)  
Open forest of *Eucalyptus marginata* subsp. *marginata*-*Corymbia calophylla* on slopes and woodland of *Eucalyptus rudis* on the valley floor in the humid zone (Mattiske and Havel, 1998).

Mattiske vegetation complex Balingup (BLf)  
Woodland of *Eucalyptus rudis* on valley floors and woodland of *Eucalyptus patens*-*Corymbia calophylla* on footslopes with some *Eucalyptus marginata* subsp. *marginata* on lower slopes in the humid zone (Mattiske and Havel, 1998).

Mattiske vegetation complex Bridgetown (BT)

The vegetation within Winnejump road reserve (approximately 6km road stretch) at the western end comprises of areas of *Corymbia calophylla* and *Eucalyptus wandoo* over weed species and bracken amongst some native sedges, its considered to be in a degraded (Keighery, 1994) condition (DEC, 2011). The vegetation at the eastern end of Winnejump road reserve (approximately 4.5km road stretch) comprises of Marri, Jarrah and *Banksia grandis* woodland over bracken fern, *Xanthorrhoea preissi*, *Acacia* and *Hakea* species, the vegetation ranges from degraded to very good (Keighery, 1994) condition (DEC 2011). It is proposed that up to three metres of vegetation will be cleared each side of the eastern end of Winnejump road reserve.

The vegetation within the remaining roads under application comprises mainly of regrowth (over 10 years old) as the roads haven't been maintained since their initial construction. Most of the clearing will take place within the table drain and backslopes. The vegetation is considered to range from completely degraded to very good (Keighery, 1994) condition (DEC, 2011).



Mixture of open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla with some Eucalyptus patens on slopes to low open forest of Eucalyptus rudis-Melaleuca raphiophylla on the valley floors in the humid zone (Mattiske and Havel, 1998).

Mattiske vegetation complex Hester (HR) Tall open forest to open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla on lateritic uplands in perhumid and humid zones (Mattiske and Havel, 1998).

### 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 may be at variance to this Principle**

The Shire of Bridgetown - Greenbushes propose to clear up to 7.78 hectares of native vegetation within 13 road reserves, for the purpose of road widening and maintenance. The proposed clearing is needed to ensure roads meet a minimum requirement of a 6 metre seal, with a total width including the table drains and backslopes of up to 11 metres.

The 13 road reserves under application are Kendall, Krsuls, Wilkins, Walter, James, Kangaroo Gully, Giblett, Maranup Ford, Blackwood Park, Wilga, Connell, Nelson and Winnejup. The Shire considers the road reserve that will require the most clearing is Winnejup Road. Winnejup Road is a narrow road, with a current seal of 4 metres. The Shire proposes to clear at the eastern end of Winnejup Road approximately of 3 metres of native vegetation each side of the road with a possibility of only disturbing one side after the bridge if the roads centre alignment can be maintained. The vegetation along the road ranges from degraded to good (Keighery, 1994) condition (DEC, 2011.)

Sections of Kangaroo Gully, Maranup Ford, Connell, Winnejup, Kendall and Wilga road reserves under application are considered as having high conservation values (RCC, 2004) The remaining roads under application are considered to have medium to low conservation values or haven't been given a conservation value (RCC, 2004).

The three black cockatoo species, Calyptorhynchus banksii (Forest red-tailed black cockatoo) and Calyptorhynchus baudinii (Baudin's black cockatoo) ranked as Vulnerable under the EPBC Act 1999 and Calyptorhynchus latirostris (Carnaby's black cockatoo) ranked as Endangered under the EPBC Act and all listed under the Wildlife Conservation Act 1950, have been recorded within the local area. A recent site inspection of the vegetation area under application observed foraging habitat along with trees with significant hollows suitable for nesting for black cockatoo species.

Winnejup Road reserve is mapped as comprising Beard vegetation (Shepherd, 2009) association 992, Mattiske vegetation complexes (Molloy et al, 2007) Newgalup 1 (NWg1), Newgalup 1 (NW1), Newgalup 1 (NWf1) and Dalmore (DMg) with approximately 26%, 15%, 19%, 19% and 7% respectively of their pre-European vegetation extents remaining. The Winnejup Road reserve comprises an approximate footprint of 5.1ha with approximately 3ha vegetated, not all of this vegetation is to be cleared.

The Beard and Mattiske vegetation types identified within the Winnejup Road application area are similar to that identified by DEC (2011) on a recent site inspection with an exception to the eastern end of Winnejup Road. The vegetation in this section (~1.34ha) comprises Jarrah-Marri-Banksia grandis woodland over Bracken fern, Xanthorrhoea preissii, Acacia and Hakea species in completely degraded to very good (Keighery, 1994) condition (DEC, 2011).

The Shire of Bridgetown-Greenbushes are proposing to clear vegetation that may comprise a high level of biodiversity due to the occurrence of significant habitat for black cockatoo species therefore the application may be at variance to this principle.

**Methodology** DEC (2011)  
DEC (2007)  
Keighery (1994)



Shepherd (2009)  
Molloy et al (2007)  
RCC (2004)

GIS Layers  
- Pre European Vegetation  
- SAC Biodatasets (accessed July 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 at variance to this Principle**

Within the local area (10km radius) 25 fauna species listed as rare or likely to become extinct have been recorded. These included the *Calyptorhynchus banksii* (Forest red-tailed black cockatoo), *Calyptorhynchus baudinii* (Baudin's black cockatoo) and *Calyptorhynchus latirostris* (Carnaby's black cockatoo). The areas under application contained foraging vegetation and tree hollows suitable for black cockatoo species.

The development of nesting hollows is a dynamic process and so the existing nesting hollows are important as well as the maintenance of healthy trees to allow for the development of future hollows. Clearing and subsequent land degradation has eliminated most of the breeding habitat for black cockatoos. These birds require old trees with large hollows in which to nest, which may take many decades for trees planted now to become suitable. Competition for nesting hollows by increasing numbers of galahs, western corellas and non native honey bees is significant (Burbridge 2004).

All three species of black cockatoo species recorded in the area require large hollows for nesting purposes. A recent site visit conducted by DEC (2011) identified trees that are suitable for black cockatoo species to nest, with several trees containing large hollows. The Shire has indicated where possible to avoid the removal of trees that contain hollows, however with some areas this may be unavoidable.

Given the above this principle is at variance. To mitigate the potential loss of habitat trees and tree hollows for black cockatoo species, artificial nesting boxes should be constructed and relocated in a similar vegetation habitat area.

**Methodology** DEC (2011)  
DEC (2007)  
Burbridge (2004)

**(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**

A record of rare flora, *Caladenia harringtoniae* has been mapped approximately 500 metres west of Maranup Ford road. The Maranup Ford road already has a 6 metre seal and a width of 11 metres including the table drain and backslopes. The vegetation proposed to be cleared within Maranup Ford road reserve will be contained mainly within the table drain.

It is considered (DEC, 2011a) that *Caladenia harringtoniae* is usually found in broad floors of creeklines that have loamy/clay soils with relatively open understory including wetland dependent species.

The vegetation that exists within the table drain and backslope of Maranup Ford road comprises mainly of an open too dense understory consisting mainly of Bracken fern with vegetation pockets of *Acacia* species, *Zamia* palms, *Patersonia occidentalis* and other native sedges. The vegetation within the table drain and backslopes was considered to be mostly in a degraded (Keighery, 1994) condition (DEC, 2011).

Given the above it is unlikely that *Caladenia harringtoniae* will be impacted upon the proposed clearing, therefore this principle is not likely to be at variance.

**Methodology** DEC (2011a)  
DEC (2011)  
Keighery (1994)

GIS Layers  
- SAC Biodatasets (accessed July 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 not likely to be at variance to this Principle**

There are no known recorded threatened ecological communities (TEC's) with a 10km radius of the road



reserves under application.

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

**Methodology** GIS Layers  
SAC Biodatasets (accessed July 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 not likely to be at variance to this Principle**

The road reserves under application within the Shire of Bridgetown-Greenbushes are within the Jarrah Forest IBRA bioregion and have been mapped as having two Beard vegetation associations. The area under application is also comprised of 10 Mattiske vegetation complexes.

Winnejup Road reserve comprises Beard vegetation association (Shepherd, 2009) 992, and Mattiske vegetation complexes (Molloy, 2007) Newgalup 1 (NWg1), Newgalup 1 (NW1), Newgalup 1 (NWF1) and Dalmore (DMg) with 26%, 15%, 19%, 19% and 7% respectively of their pre-European vegetation remaining. The Winnejup Road reserve comprises an approximate footprint of 5.1ha with approximately 3ha vegetated.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30% of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The mapped Mattiske vegetation complexes NWg1 and NWF1 are considered to represent approximately 80% of the vegetation within the Winnejup Road reserve.

Mattiske vegetation complex NWg1 was mapped mainly within the western section of Winnejup Road reserve. This section of the road reserves vegetation was similar to that of the mapped Mattiske vegetation complex. The vegetation was considered to be in a degraded (Keighery, 1994) condition (DEC, 2011) with a small section of *Melaleuca raphiophylla*, *Eucalyptus rudis* and *Corymbia calophylla* within a watercourse. The vegetation in this area would be less than 0.5ha and is considered to be in a good (Keighery, 1994) condition (DEC, 2011).

Mattiske vegetation complex NWF1 was mapped mainly comprising the western section of Winnejup Road reserve. A recent site inspection by DEC (2011) considered the vegetation within this area appears to comprise more of a Jarrah-Marri-Banksia grandis woodland and therefore not likely to be considered a good representation of mapped complex NWF1. This section of Winnejup Road reserve under application is considered as having high conservation values (RCC, 2004).

The vegetation under application within the Winnejup road reserve is considered to comprise significant foraging and nesting habitat for black cockatoo species. The vegetation complexes recorded along Winnejup road reserve also fall below the national objective target of 30%, therefore it is significant as a remnant. However, it is considered the area (10km radius) surrounding Winnejup Road has not been extensively cleared with approximately 50% of its pre-European vegetation remaining.

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

**Methodology** Commonwealth of Australia (2001)  
DEC (2011)  
Keighery (1994)  
Molloy et al (2007)  
RCC (2004)  
Shepherd (2009)

GIS Layers  
- Pre European Vegetation  
- SAC Biodatasets (accessed July 2011)

**(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 road reserves under application intersect with a number of watercourses. These watercourses contain riparian vegetation ranging from a degraded to good (Keighery, 1994) condition (DEC, 2011).

The proposed clearing involves widening of some bridges and the Shire has been instructed by main roads that a 10 metre buffer needs to be maintained around timber structures such as bridges, and as such riparian vegetation will need to be removed to allow for the widening and buffer.



Given the above this principle is at variance.

**Methodology** DEC (2011)  
Keighery (1994)

**(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 soil types Qb31 which Northcote et al (1960 - 1968) describes as Hilly to steep hilly terrain of rather broken relief, chief soils are hard neutral red soils and acidic red soils hard neutral, and also acidic, yellow mottled soils; and JZ1 is described as Dissected plateau having a strongly undulating relief, and with some moderately incised valleys. The unit comprises much of the western part of the Darling Range south of the Swan River. It is characterized by lateritic gravels and block laterite, the chief soils are ironstone gravels with sandy and earthy matrices.

The Blackwood River and other minor perennial watercourses intersect some of the road reserves under application, although many of these areas have already been previously impacted through the initial road construction.

It is considered that the further clearing may result in some soil erosion, however, this is considered to be short term during the construction works.

**Methodology** Northcote (1960-1968)

GIS Layers  
- Hydrogeology, statewide  
- Soils, 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** **Proposal is not likely to be at variance to this Principle**

Connell and Krsuls Roads are adjacent to the Hester State Forrest. Maranup Ford Road is within the Greenbushes State forest and Kendell Road travels through the Hester Conservation Reserve.

The proposed clearing within the four roads that have been recorded in a close proximity conservation area, will only be within the table drains and backslopes of the road reserves. Therefore it is considered the proposed clearing will not have any significant impacts to the known conservation areas recorded within close proximity to the proposed clearing.

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

**Methodology** GIS Layers  
- 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 proposed clearing within the various road reserves may cause some short term localised surface water sedimentation that may impact upon the numerous intersecting watercourses. However these effects are likely to minimal.

The Shire have advised where roads intersect with watercourses appropriate infrastructure will be constructed such as culverts and drains.

The clearing as proposed is not likely to be at variance to this clearing principle.

**Methodology** GIS Layers  
- Hydrogeology, statewide  
- Rivers

**(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**

The Blackwood River and other minor perennial watercourses and drains cross the areas under application. Given that a large amount of the road reserves under application will be restricted to native vegetation being



removed in the table drains and backslopes, it is unlikely the proposed clearing will increase the incidence or intensity of flooding.

The Shire have advised where roads intersect with watercourses appropriate infrastructure will be constructed such as culverts and drains.

The clearing as proposed is not likely to be at variance to this clearing principle.

**Methodology** GIS Layers  
- Hydrogeology, statewide  
- Rivers

#### **Planning instrument, Native Title, Previous EPA decision or other matter.**

##### **Comments**

The Shire of Bridgetown-Greenbushes has received regional road funding for the upgrade to Winnejup Road.

##### **Methodology**

#### **4. References**

- Burbidge, A. (2004) Threatened Animals of Western Australia, Department of Conservation and Land Management, Perth, Western Australia.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- DEC (2007 - ) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>. Accessed July 2011
- DEC (2011) Site Inspection Report for Clearing Permit Application CPS 4411/1, Kendall, Krsulus, Wilkins, Walter, James, Kangaroo Gully, Giblet, Marunup Ford, Blackwood Park, Wilga, Connell, Nelson and Winnejup roas reserves. Site inspection undertaken 3/8/2011. Department of Environment and Conservation, Western Australia (TRIM Ref. DOCA423645).
- DEC (2011a) Regional Advice Submission. DEC Ref DOC:A423690
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.
- Molloy, S., O'Connor, T., Wood, J and Wallrodt, S (2007) Addendum for the South West Biodiversity Project Area, Western Australian Local Government Association, West Perth.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Roadside Conservation Committee (2004). A Survey of Roadside Conservation Values in the Shire of Bridgetown-Greenbushes and Roadside Management Guidelines
- 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)