



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 4799/1
Permit Holder:	Shire of Donnybrook-Balingup
Duration of Permit:	29 June 2012 – 29 June 2019

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

King Spring Road Reserve (PIN: 11597278; 11597765; 11597764; 11597660), THOMSON BROOK 6239
Bendall Road Reserve (PIN: 11530184), ARGYLE 6239
Gemmell Road Reserve (PIN: 11530180; 11771928), ARGYLE 6239
Thomas Road Reserve (PIN: 11543113), UPPER CAPEL 6239
Brookhampton Road Reserve (PIN: 11521751; 11521750, 11521749), KIRUP 6251

3. Area of Clearing

The Permit Holder must not clear more than 0.93 hectares of native vegetation within the combined areas shaded yellow on attached Plan 4799/1a and Plan 4799/1b and Plan 4799/1c and Plan 4799/1d.

4. Application

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

5. Type of clearing authorised

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

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:

- 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.

8. Vegetation management

- (a) Where practicable the Permit Holder shall avoid clearing riparian vegetation.
- (b) Where a watercourse is to be impacted by clearing, the Permit Holder shall maintain the existing surface flow by use of culverts.

9. 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.
- (b) At least once in each 12 month period for the term of this Permit, the Permit Holder must remove or kill any *weeds* growing within areas cleared under this Permit.

10. Fauna management

- (a) Prior to undertaking any clearing within the areas shaded red on attached Plan 4799/1e and Plan 4799/1f, the areas shall be inspected by a *fauna specialist* who shall identify habitat/*habitat tree(s)* suitable to be utilised as habitat by fauna listed in the *Wildlife Conservation (Specially Protected Fauna) Notice*.
- (b) Prior to clearing, any habitat/*habitat tree(s)* identified by condition 10(a) shall be inspected by a *fauna specialist* for the presence of fauna listed in the *Wildlife Conservation (Specially Protected Fauna) Notice*.
- (c) Where fauna are identified in relation to condition 10(b) of this Permit, the Permit Holder shall ensure that:
 - (i) no clearing of the identified habitat/*habitat tree(s)* occurs, unless approved by the CEO; and
 - (ii) where fauna are identified in relation to conditions 10(b) of this Permit, the Permit Holder shall ensure that no taking of identified fauna occurs unless approved by the CEO.

11. Offset - Revegetation

The Permit Holder must, within the area shaded red on attached Plan 4799/1g, implement a *rehabilitation* and *revegetation* project across two hectares within Racecourse Flora Reserve, including but not limited to:

- (a) The commencement of the *rehabilitation* and *revegetation* project within Racecourse Flora Reserve by July 2013 or a date otherwise approved by the CEO;
- (b) Installation of rabbit proof fencing;
- (c) A starting density of 2000 stems per hectare with an overall success rate of 75% of the 2000 stems per hectare five years after establishment;
- (d) A composition of *local provenance* species consistent with the mapped vegetation type five years after establishment;
- (e) A target structure of 20% overstorey, 50% midstorey and 30% understorey five years after establishment;
- (f) Less than 20% *weed* cover five years after the commencement of the *rehabilitation* and *revegetation* project;
- (g) *Weed* and *revegetation* establishment to be monitored annually for a five year period;
- (h) Infill *planting* undertaken within 12 months at an *optimal time* where success rate of 75% has not been achieved; and
- (i) Photo points established at a minimum of 3 sites within the project area, with photographs taken before *planting*, the summer after *planting* and annually, during summer.

PART III - RECORD KEEPING AND REPORTING

12. 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 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;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).

- (b) In relation to fauna management pursuant to condition 10 of this Permit:
 - (i) the location of each habitat tree identified 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 habitat/habitat tree(s);
 - (iii) 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; and
 - (iv) a copy of the fauna specialist's report.

- (c) In relation to the *Offset – Revegetation* of areas pursuant to condition 11 of this Permit:
 - (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, including but not limited to those outlined in condition 11;
 - (iii) the size of the offset area (in hectares); and
 - (iv) results of measurements undertaken against revegetation success rate.

13. 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 12 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit

- (b) Prior to 8 March 2019, the Permit Holder must provide to the CEO a written report of records required under condition 12 of this Permit where these records have not already been provided under condition 13(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;

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

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

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;

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

habitat tree(s) means trees that have a diameter, measured at 1.5m above the ground, of 50cm or greater, 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;

local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres of the area cleared.

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

offset(s) means an offset required to be implemented under condition 11 of this Permit;

optimal time means the period from May to June for undertaking *planting*;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

regenerate/ed/ion means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing *mulch*;

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;

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*;

Wildlife Conservation (Specially Protected Fauna) Notice means those fauna taxa gazetted as rare fauna pursuant to section 14(4)(a) of the *Wildlife Conservation Act 1950* (as amended).

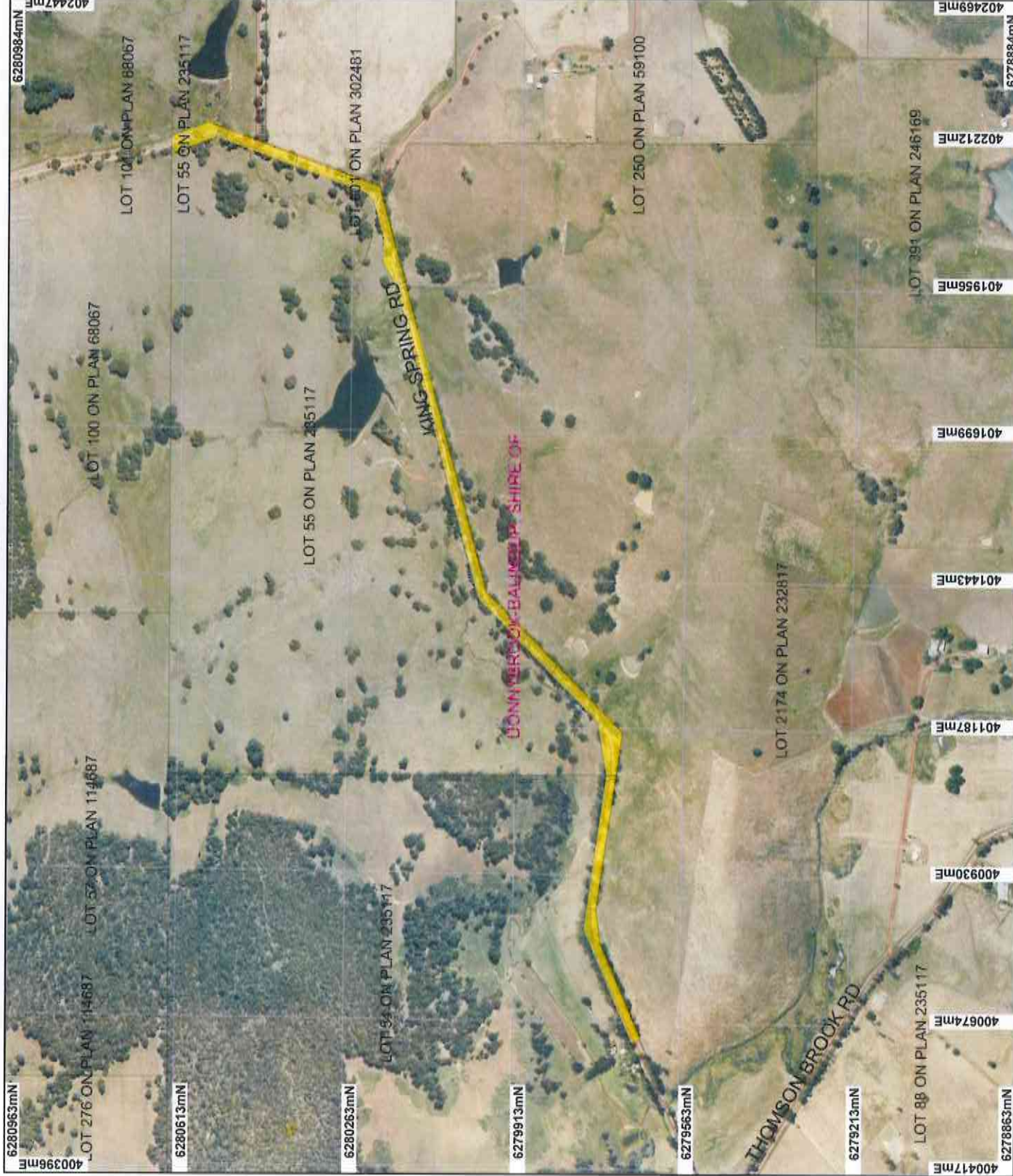


Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

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

7 June 2012

Plan 4799/1a



LEGEND

Clearing Requirements

- Areas Approved as Clear
- Road Centrelines
- Local Government Authorities
- Towns
- A
- B
- C
- Donnybrook 50cm Orthomosaic - Landgate 2004



0 250 m

Scale 1:10000

(Approximate when reproduced at A4)

Geospatial Datum Australia 1994

Note: The data in this map have not been projected. They may result in geometric distortions or measurement inaccuracies.

[Signature] Date 7/6/12

K. Fullbrook

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

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Plan 4799/1b



LEGEND

Clearing Intentionality

- Areas Approved to Clear
- Road Centrefines
- Local Government Authorities
- Towns

- A
- B
- C

Donnybrook 50cm Orthomosaic - Landgate 2004



Scale 1:7800

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Geographic Datum Australia 1994

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K Faulkner

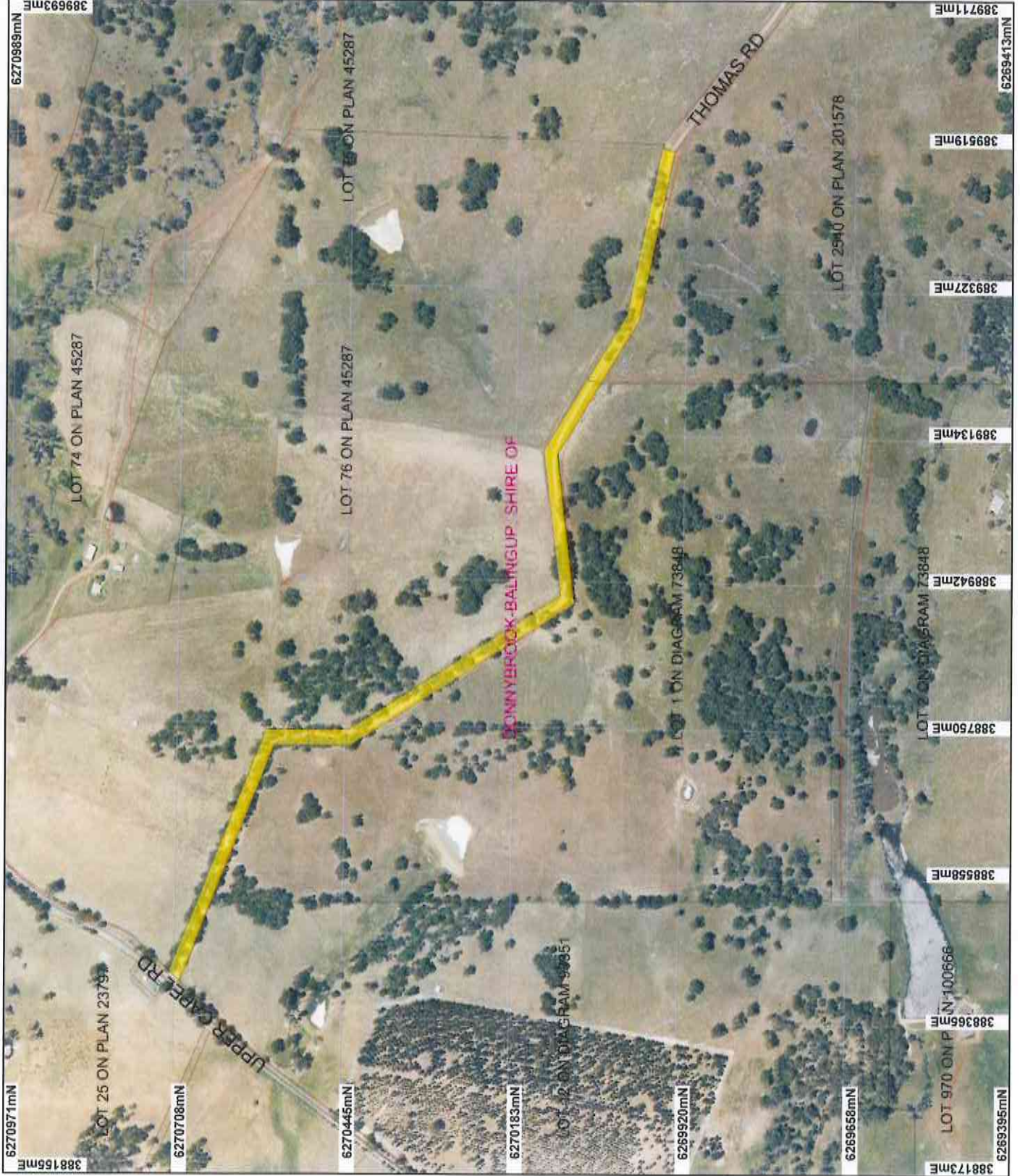
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Plan 4799/1C



LEGEND

City of Balingup

- Areas Approved to Clear
- Road Centrelines
- Local Government Authorities
- Towns

- A
- B
- C

Donnybrook 50cm Orthomosaic - Landgate 2004



Scale 1:7500
 (Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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Plan 4799/1d



LEGEND

- | | |
|--|------------------------------|
| Cadastre for labelling Clearing Instruments | |
| | Areas Approved to Clear |
| | Road Centrelines |
| | Local Government Authorities |
| Towns | |
| | A |
| | B |
| | C |
| Donnybrook 50cm Orthomosaic - Landgate 2004 | |



Scale 1:6500
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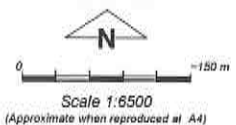
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Plan 4799/1e



LEGEND

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|---|---|
| <ul style="list-style-type: none"> □ Cadastre for labelling Clearing Instruments □ Areas Subject to Conditions □ Areas Approved to Clear ⊗ Road Centrelines □ Local Government Authorities | <ul style="list-style-type: none"> Towns ● A ● B ● C Cadastre_1 Donnybrook 50cm Orthomosaic - Landgate 2004 |
|---|---|



Geocentric Datum Australia 1994

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K Parkner

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Plan 4799/1f



LEGEND

Clearing Restrictions

- Areas Subject to Conditions
- Areas Approved to Clear
- Road Centrelines
- Local Government Authorities
- Towns

- A
- B
- C

Cadastral_1
 Donnybrook 50cm Orthomosaic - Landgate
 2004



Scale 1:7500
 Approximate when reproduced at A4

Geographic Datum Australia 1994
 Note: the data in this map have not been
 checked. This may result in geometric
 distortions of measurement inaccuracies

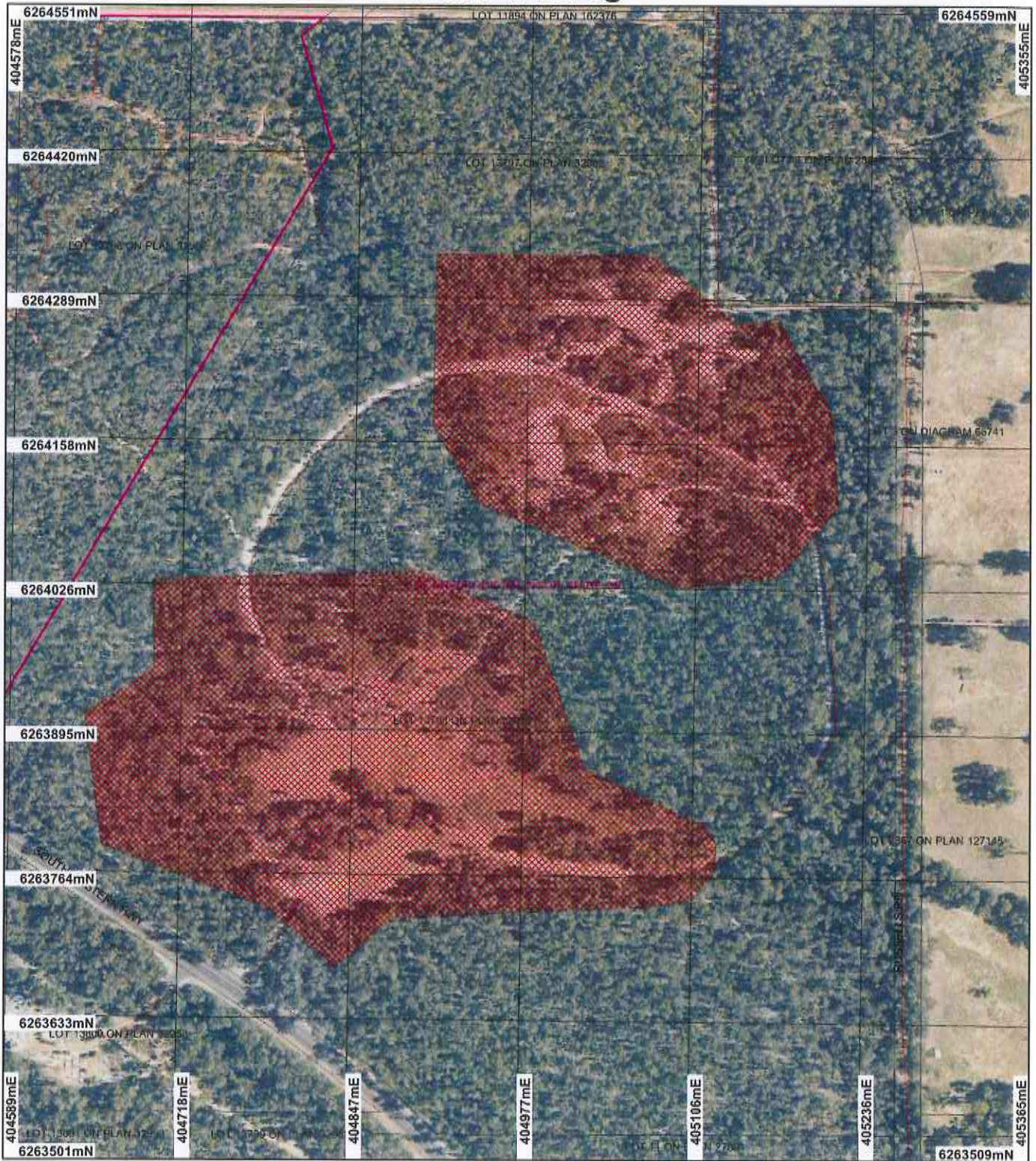
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 Date 7/6/2

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Plan 4799/1g



LEGEND

- Clearing Instruments
 - Areas Subject to Conditions
 - Road Centrelines
 - Cadastral for Labelling
 - Local Government Authorities
- Donnybrook 50cm
Orthomosaic - Landgate
2004



0 125 m

Scale 1:4612
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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1. Application details

1.1. Permit application details

Permit application No.: 4799/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Shire of Donnybrook-Balingup

1.3. Property details

Property: ROAD RESERVE (KING SPRING ROAD, THOMSON BROOK 6239)
ROAD RESERVE (BENDALL ROAD, ARGYLE 6239)
ROAD RESERVE (GEMMELL ROAD, ARGYLE 6239)
ROAD RESERVE (THOMAS ROAD, UPPER CAPEL 6239)
ROAD RESERVE (BROOKHAMPTON ROAD, KIRUP 6251)
Local Government Area: Shire of Donnybrook-Balingup

1.4. Application

Clearing Area (ha) 0.93 Method of Clearing Mechanical Removal For the purpose of: Road construction or maintenance

1.5. Decision on application

Decision on Permit Application: GRANT
Decision Date: 7 June 2012

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
<p>Beard vegetation association: 1184 - Medium woodland - fringing; jarrah, marri, Eucalyptus rudis and Agonis flexuosa (Hopkins et al, 2001).</p> <p>Hedde vegetation complex: Lowdon Complex - Open forest of Corymbia calophylla - Eucalyptus marginata subsp. marginata - Agonis flexuosa with some Eucalyptus wandoo and occasional Corymbia haematoxylon on slopes, and woodland of Eucalyptus rudis - Melaleuca raphiophylla on valley floor in the humid zone (Hedde et al, 1980).</p> <p>Mattiske vegetation complex: BL (Balingup) - 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).</p>	<p>The vegetation along King Spring Road ranges from 'completely degraded' to 'good' (Keighery, 1994) condition with the majority being in a 'degraded' (Keighery, 1994) condition (DEC, 2012).</p> <p>The vegetation consists of Corymbia calophylla with understorey species in areas comprising Xanthorrhoea preissii, Pteridium esculentum, Acacia pulchella and weed species including Watsonia sp. and black wattle from mid way along the applied clearing area heading east-north-east (DEC, 2012). Eucalyptus rudis was recorded along some of the creeklines which intersect and run parallel to the applied clearing area (DEC, 2012).</p>	<p>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)</p> <p>To</p> <p>Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)</p>	<p>Vegetation condition and type confirmed through site visit undertaken by DEC 20 February 2012 and through aerial imagery (Donnybrook 50cm Orthomosaic - Landgate 2004).</p>
<p>Beard vegetation association: 1182 - Medium woodland; Eucalyptus rudis and Melaleuca raphiophylla (Hopkins et al, 2001).</p> <p>Hedde vegetation complex: Preston complex (Hedde et al, 1980)</p> <p>Mattiske vegetation complex: RO (Rosa) - Woodland to open forest of Corymbia calophylla - Eucalyptus marginata subsp. marginata - Xylomelum occidentale on slopes and tall shrubland of Agonis linearifolia in valley floors in the humid zone (Mattiske and Havel, 1998).</p>	<p>The vegetation under application is restricted to the northern sides of Gemmell and Bendall Road reserves (Shire of Donnybrook-Balingup, 2012). The vegetation along the northern side of Gemmell Road is in a 'degraded' (Keighery, 1994) condition, comprising Corymbia calophylla and one Agonis flexuosa with no native understorey or groundcover species (DEC, 2012). The vegetation within Bendall Road reserve ranges from 'good' to 'degraded' (Keighery, 1994) condition, comprising Corymbia calophylla and Eucalyptus marginata over Xanthorrhoea gracilis, Macrozamia riedlei, Hibbertia hypericoides and Patersonia occidentalis (DEC, 2012).</p>	<p>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)</p> <p>To</p> <p>Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)</p>	<p>Vegetation condition and type confirmed through site visit undertaken by DEC 20 February 2012 and through aerial imagery (Donnybrook 50cm Orthomosaic - Landgate 2004).</p>
<p>Beard vegetation association: 3 - Medium forest; jarrah-marri (Hopkins et al, 2001).</p>	<p>The vegetation under application along Brookhampton Road reserve ranges from</p>	<p>Very Good: Vegetation structure altered;</p>	<p>Vegetation condition and type was</p>

Hedde vegetation complexes: Dwellingup and Hester Complex In\High Rainfall-Central and South and Balingup Complex in Medium to\High Rainfall (Hedde et al, 1980)

Mattiske vegetation complexes: HR (Hester) - Tall open forest to open forest of *Eucalyptus marginata* subsp. *marginata*-*Corymbia calophylla* on lateritic uplands in perhumid and humid zones; and 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).

Beard vegetation associations: 1182 - Medium woodland; *Eucalyptus rudis* and *Melaleuca raphiophylla* and 999 - Medium woodland; *marri* (Hopkins et al, 2001).

Hedde vegetation complexes: Darling Scarp Complex - Vegetation ranges from low open woodland to lichens according to depth of soils. Woodland components chiefly *Eucalyptus wandoo* (*Wandoo*) with *Eucalyptus laeiae* (*Darling Range Ghost Gum*) in the north, *Corymbia haematoxylon* (*Mountain Marri*) in the south, and *Corymbia calophylla* (*Marri*) throughout the region; and Preston Complex (Hedde et al, 1980)

Mattiske vegetation complexes: DS (Darling Scarp) - Mosaic of open forest of *Eucalyptus marginata* subsp. *marginata*-*Corymbia calophylla*, with some admixtures with *Eucalyptus laeiae* in the north (subhumid zone), with occasional *Eucalyptus marginata* subsp. *elegantella* (mainly in subhumid zone) and *Corymbia haematoxylon* in the south (humid zone) on deeper soils adjacent to outcrops, woodland of *Eucalyptus wandoo*(subhumid and semiarid zones), low woodland of *Allocasuarina huegeliana* on shallow soils over granite outcrops, closed heath of *Myrtaceae*-*Proteaceae* species and lithic complex on or near granite outcrops in all climate zones.

BL (Balingup) - Open forest of *Eucalyptus marginata* subsp. *marginata* -*Corymbia calophylla* on slopes on woodland of *Eucalyptus rudis* on the valley floor in the humid zone.

HR (Hester) - 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)

'very good' to 'completely degraded' (Keighery, 1994) condition with the majority of the vegetation being in 'good' (Keighery, 1994) condition (DEC, 2012). The vegetation in 'very good' (Keighery, 1994) condition consists predominantly of *Corymbia calophylla* and *Eucalyptus marginata* over an understorey including *Bossiaea aquifolium*, *Gastrolobium bilobum*, *Mirbelia dilatata*, *Hakea amplexicaulis*, *Xanthorrhoea preissii*, *Pteridium esculentum*, *Acacia pulchella*, *Acacia extensa*, *Hibbertia hypericoides* and *Patersonia occidentalis* and non-native grasses immediately adjacent to the existing road (DEC, 2012).

The areas of 'good' to 'completely degraded' (Keighery, 1994) condition adjacent to farmland had more extensive weed cover and sparser native vegetation with areas of riparian vegetation containing *Taxandria linearifolia* and *Taxandria parviceps* in 'good' to 'degraded' (Keighery, 1994) condition with a dense patch of *kikuyu* (DEC, 2012) in the centre of the applied clearing area which is completely surrounded by farm land. Some non-native *Eucalypts* occur near the riparian vegetation in the 'completely degraded' (Keighery, 1994) area (DEC, 2012).

The vegetation under application along Thomas Road reserve ranges from 'good' to 'completely degraded' (Keighery, 1994) condition with the best condition vegetation being towards the western end of the applied clearing area (DEC, 2012). The vegetation in 'degraded' (Keighery, 1994) condition consists only of *Corymbia calophylla* and *Eucalyptus marginata* while areas in 'good' (Keighery, 1994) condition also had an understorey including, but not limited to, *Xanthorrhoea preissii*, *Pteridium esculentum*, *Persoonia longifolia*, *Acacia extensa*, *Hibbertia hypericoides* and other native herbs and sedges (DEC, 2012).

obvious signs of disturbance (Keighery 1994)

To

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)

confirmed through site visit undertaken by DEC 20 February 2012 and through aerial imagery (Donnybrook 50cm Orthomosaic - Landgate 2004).

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)

To

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)

Vegetation condition and type was confirmed through site visit undertaken by DEC 20 February 2012 and aerial imagery (Donnybrook 50cm Orthomosaic - Landgate 2004).

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 proposed clearing under application for the purposes of road widening and upgrades consists of approximately 0.03ha along the northern side of the existing road within King Spring Road reserve, approximately 0.1ha along the northern sides of the roads for Bendall and Gemmell Road reserves, approximately 0.4ha along both sides of the existing road for Brookhampton Road reserves and approximately 0.4ha along both sides of the existing road within Thomas Road reserve.

The vegetation across the areas under application is mostly in a 'degraded' (Keighery, 1994) condition (DEC, 2012). However there are areas along Brookhampton Road reserve that are in 'good' to 'very good' (Keighery, 1994) condition and within King Spring, Bendall and Thomas Road reserves in 'good' (Keighery, 1994) condition (DEC, 2012).

Bendall Road reserve supports native vegetation ranging from 'good' to 'degraded' (Keighery, 1994) condition while Gemmell Road vegetation is in a 'degraded' (Keighery, 1994) condition (DEC, 2012). The vegetation is considered to be of low conservation value with weed species being recorded including *Watsonia* sp., bridal creeper and tree weeds in some areas of the road reserve (RCC, 2008). The vegetation provides a linkage between the vegetation along the Preston River and up to the Boyanup State Forest however, only the northern side of the road reserve is proposed to be cleared, leaving the southern side to support fauna and flora dispersal between the remnants of vegetation.

The roadside vegetation along Brookhampton Road has been classed as having high conservation value (RCC, 2008 & RCC, 2012) attributed to having value as a biological corridor, connecting the areas of state forest (Warner Forest Block) and supporting vegetation ranging from 'very good' to 'completely degraded' (Keighery, 1994) condition with the majority in 'good' (Keighery, 1994) condition (DEC, 2012). This area under application is therefore important in a localised context for flora and fauna dispersal across a cleared area of farmland. It also supports both upland and riparian vegetation providing a diverse range of habitat and as such comprises a high level of biological diversity in comparison to the area that is completely cleared directly adjacent to it.

The vegetation within King Spring Road provides some connectivity across a primarily agricultural landscape but has been given a low conservation value when surveyed in 2008 (RCC, 2012) and the majority is in a 'degraded' (Keighery, 1994) condition (DEC, 2012). There is some weed encroachment including black wattle and *Watsonia* sp. (DEC, 2012). The area does however, provide foraging habitat for fauna including threatened black cockatoo species (DEC, 2012). For this reason the Shire has reduced the clearing along King Spring Road reserve from 0.4ha along both sides of the road to approximately 0.03ha restricted to the northern side of the road, in order to reduce the impact to foraging habitat and the linkage.

The vegetation within Thomas Road reserve is mostly of low conservation value (RCC, 2012) and ranges in condition from 'good' to 'completely degraded' (Keighery, 1994) condition (DEC, 2012). The local area also contains large areas of native vegetation within Jarrahwood and Mullalyup State Forests and therefore this area is not considered to comprise a high level of biological diversity.

The closest mapped priority ecological community to the areas under application is the 'Whicher Scarp Jarrah Woodland of Deep Coloured Sands' (priority 1) approximately 20km to the edge of the buffer from King Spring Road and approximately 6km from Bendall and Gemmell Roads. Given the distances to this PEC and the vegetation does not have any affinities with this PEC, the vegetation is not likely to comprise a whole or part of a PEC nor is it likely to support PEC's in the area.

A number of priority flora species have been recorded within the local areas of the applied clearing areas, with some being recorded within similar vegetation and soil types to those under application. However, given that none of the species that could have been identified in February were observed during the site visit and given the overall 'degraded' (Keighery, 1994) condition of many of the areas under application or on-ground suitable habitat was not identified for some of the species, it is not considered likely that the areas under application would support flora species of conservation significance.

Given that some of the vegetation under application provides connectivity to conservation areas and provides habitat for flora and fauna dispersal amongst cleared agricultural land, as well as providing foraging habitat for threatened black cockatoo species, the proposed clearing is considered may be at variance with particular reference to the area under application along Brookhampton Road reserve. Revegetation and management activities to be undertaken at a nearby conservation reserve vested with the Shire of Donnybrook-Balingup, comprising the same mapped vegetation types as Brookhampton Road reserve will assist in mitigating the loss of vegetation as a result of the proposed road widening and upgrades.

Methodology

References:

- DEC (2012)
- Keighery (1994)
- RCC (2008)
- RCC (2012)

GIS Databases:

- Donnybrook 50cm Orthomosaic - Landgate 2004
- SAC Biodatasets - Accessed January 2012

(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 may be at variance to this Principle

Nine threatened, six priority and one other specially protected fauna species (Wildlife Conservation Act 1950) have been recorded across the local areas (10km radius of each road reserve) of the applied clearing areas including, but not limited to, forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*), Carnaby's cockatoo (*Calyptorhynchus latirostris*), brush-tailed phascogale (*Phascogale tapoatafa* subsp. *ssp* (WAM M434)) and southern brown bandicoot (*Isodon obesulus* subsp. *fusciventer*) (DEC, 2007-).

Evidence of foraging upon marri (*Corymbia calophylla*) nuts by black cockatoo species was identified within the applied clearing areas of King Spring, Thomas and Brookhampton Road reserves (DEC, 2012). Subsequently, the area proposed to be cleared along King Spring Road reserve has been reduced from 0.4ha along both sides of the road to 0.03ha restricted to the northern side of the road in order to reduce the impact to foraging habitat and the vegetated linkage this road reserve supports.

One large jarrah (*Eucalyptus marginata*) at the northern end of the applied clearing area of Brookhampton Road contained a small hollow that could provide habitat for arboreal mammals such as brush-tailed phascogale or small bird species (DEC, 2012). It is recommended that this tree be retained however, if this tree is required to be cleared, appropriate fauna management measures will ensure that the hollow is checked and reduce the risk to any fauna utilising the hollow. One dead tree with a hollow was recorded towards the western end of the applied clearing area within Thomas Road reserve (DEC, 2012). The applied clearing areas within Thomas and King Spring Road reserves contained a number of large native trees that have the potential to form hollows and as such may be considered significant as future habitat for fauna species inhabiting the local area, particularly in these areas where the road reserves are surrounded by mostly cleared farm land.

Riparian vegetation, including *Taxandria linearifolia* and *Taxandria parviceps*, ranging from 'degraded' (due to the presence of kikuyu) to 'good' (Keighery, 1994) condition occurs within the applied clearing area along Brookhampton Road (DEC, 2012). This vegetation provides suitable habitat for southern brown bandicoot (priority 5 species) however, the impact to this habitat in relation to the proposed clearing is likely to be minimal (DEC, 2012).

Given that the vegetation under application provides foraging habitat for threatened fauna species and provides connectivity across a substantially cleared agricultural landscape, in a localised context, or between areas of conservation and remnants of vegetation, the proposed clearing particularly for Brookhampton, Thomas and King Spring Road reserves, may be at variance to this principle. Revegetation and management activities to be undertaken at a nearby conservation reserve vested with the Shire of Donnybrook-Balingup, comprising the same mapped vegetation types as Brookhampton Road reserve, will assist in mitigating the loss of foraging habitat as a result of the proposed road widening and upgrades.

Methodology References:
- DEC (2012)
- RCC (2012)
- NatureMap (2007-) - Accessed 6 January 2012

(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 number of rare flora species were recorded within the local area of the applied clearing areas including *Synaphea stenoloba* (King Spring and Brookhampton Roads), *Banksia squarrosa* subsp. *argillacea*, *Daviesia elongata* and *Drakaea elastica* (Bendall and Gemmell Roads) and *Daviesia elongata* subsp. *elongata* (Thomas Road).

Although these species have been recorded within similar mapped vegetation and/or soil types to the areas under application, none of the species that could have been identified in February were observed during the site visit and given the overall 'degraded' condition of many of the areas under application or on-ground suitable habitat was not identified for some of the species, it is not considered likely that the areas under application would support flora species of conservation significance.

Methodology References:
- DEC (2012)
GIS Databases:
- Heddle vegetation complexes - DEP
- Matisse vegetation - CALM

- Pre-European Vegetation - DA
- SAC Biodatasets - Accessed January and February 2012
- Soils, Statewide - DA

(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

No threatened ecological communities (TEC) have been recorded within a 10km radius of each of the roads under application. The closest TEC is on the Swan Coastal Plain, being the 'Herb rich saline shrublands in claypans' listed as Vulnerable under the DEC "threatened ecological communities for Western Australia" list and is approximately 17km south of the Bendall and Gemmell Roads intersection.

The areas under application do not have any affinities with nearby TEC's and given the distance to known TEC's, the vegetation proposed to be cleared is not considered necessary for the maintenance of a TEC. Therefore the proposal is not likely to be at variance to this principle.

- Methodology** GIS Databases:
- SAC Biodatasets - Accessed January 2012
 - Donnybrook 50cm Orthomosaic - Landgate 2004

(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 may be at variance to this Principle

The vegetation under application falls within the Jarrah Forest IBRA region within the Shire of Donnybrook-Balingup which have 54.9% and 56.6% of their pre-European extents remaining respectively (Government of Western Australia, 2011).

The vegetation under application within King Spring Road reserve is mapped as Beard vegetation association 1184 and Heddle vegetation complex - Lowdon complex both of which have above 40% of their pre-European extents remaining. The vegetation has also been mapped as Balingup complex by Matiske and Havel (1998), Balingup Slopes complex has 24% of its pre-European extent remaining (Havel & Matiske, 2002). Despite the percentage remaining for Balingup complex being below the 30% threshold, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001), the majority of the vegetation is in a 'degraded' (Keighery, 1994) condition (DEC, 2012). The roadside vegetation does provide some connectivity between vegetation remnants across a substantially cleared agricultural landscape however, the applied clearing area has been reduced to 0.03ha and restricted to the northern side of the road to reduce the impact to this linkage.

The vegetation under application at the Bendall and Gemmell Road intersection is mapped as Beard vegetation association 1182, Heddle vegetation complex - Preston Complex and Matiske vegetation complex Rosa all of which have above 40% of their pre-European extents remaining (Heddle et al, 1980; Government of Western Australia, 2011 & Matiske & Havel, 1998). The area is close to both Boyanup State Forest in the north and remnants of vegetation along Preston River to the south. Therefore, the portion under application, being 0.1ha along the northern sides of the road reserves, is not considered significant as a remnant in an extensively cleared area.

Brookhampton Road has been classed as being of high conservation value which is partially attributed to its value as a biological corridor (RCC, 2008) through cleared agricultural land and links areas of the East Kirup State Forest. The applied area also contains vegetation in mostly 'good' (Keighery, 1994) condition (DEC, 2012). The vegetation is mapped as Beard vegetation association 3, Heddle vegetation complexes - Dwellingup and Hester Complex In\High Rainfall - Central and South and Balingup Complex in Medium to\High Rainfall and Matiske vegetation complexes Hester and Catterick. All of these vegetation associations and complexes have above 60% of their pre-European extents remaining. Although the local area (within 10km radius) is not extensively cleared given the DEC tenure nearby and the areas are above the 30% threshold, the vegetation may be considered significant as a remnant given its condition, high conservation value and because it provides connectivity between areas of state forest through a completely cleared agricultural area.

The vegetation under application within Thomas Road reserve has been mapped as Beard vegetation associations 1182 and 999, Heddle vegetation complexes Darling Scarp and Preston and Matiske vegetation complex Balingup (same as King Spring Road). Beard vegetation association 999 has 26.1% of its pre-European extent remaining (Government of Western Australia, 2011) and as previously mentioned Balingup Slopes has 24% of its pre-European extent remaining (Havel & Matiske, 2002). The vegetation within this road reserve is mostly of low conservation value (RCC, 2012) and ranges in condition from 'good' to 'completely degraded' (Keighery, 1994) condition (DEC, 2012). Beard vegetation association 999 is also over the eastern two thirds of the applied clearing area which overall is the more degraded portion of the site. The local area also contains large areas of native vegetation within Jarrahwood and Mullalyup State Forests. This area is therefore not considered significant as a remnant in an extensively cleared landscape.

Given some of the vegetation under application, particularly within Brookhampton Road reserve which contains vegetation in 'good' and 'very good' (Keighery, 1994) condition, provides linkage between remnants of vegetation through substantially cleared agricultural land, the proposed clearing may be considered at variance to this principle.

- Methodology** References:
- Commonwealth of Australia (2001)
 - DEC (2012)
 - Keighery (1994)
 - Havel and Matiske (2002)
 - Matiske and Havel (1998)
 - RCC (2008)
 - RCC (2012)
- GIS Databases:
- Donnybrook 50cm Orthomosaic - Landgate 2004
 - Heddle vegetation complexes - DEP
 - IBRA Australia - DEH
 - Local Government Authorities - Landgate
 - Matiske Vegetation - CALM
 - Pre-European Vegetation - DA
 - SAC Biodatasets - RCC Mapping (Shire of Donnybrook-Balingup) - RCC

(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 closest mapped watercourse to the applied clearing areas along Bendall and Gemmell Roads was the Preston River, a major, perennial watercourse, approximately 200m south of the applied area. The closest mapped wetlands are approximately 1.1km north west. The closest mapped watercourses to Thomas Road reserve are minor, non-perennial watercourses which run less than 100m east, approximately 200m west and approximately 150m south of the applied area. Given the distances to watercourses and wetlands and the lack of riparian vegetation being recorded within the applied clearing areas (DEC, 2012), the proposed clearing within these road reserves is not likely to contain vegetation growing in or in association with a wetland or watercourse.

King Spring Road crosses a number of minor, perennial watercourses (tributaries of Thomson Brook), however, no distinct riparian vegetation was observed within the applied clearing area with one of the small creeklines being noted during the site visit in February as completely devoid of riparian vegetation (DEC, 2012). *Eucalyptus rudis* was noted within the road reserve near to a creekline that runs parallel with the existing road (DEC, 2012). Despite the lack of riparian vegetation along watercourses within the road reserve, there is the potential for watercourses that flow through the applied area to be impacted through the proposed works. As such appropriate measures to ensure continued surface waterflows, including the installation of culverts will help to reduce the impacts to watercourses.

The Capel River North branch, a minor river and non-perennial watercourse, crosses the applied clearing area along Brookhampton Road at three points. Riparian vegetation, including *Taxandria linearifolia* and *Taxandria parviceps*, ranging from 'good' to 'degraded' (Keighery, 1994) condition occurs within the area under application with some patches dominated by kikuyu (DEC, 2012). Given that the area under application within Brookhampton Road reserve will result in the clearing of native vegetation growing in association with watercourses, the proposed clearing is at variance to this principle. Where possible the clearing of riparian vegetation should be avoided and the installation of culverts will assist in maintaining waterflows to maintain the areas of riparian vegetation that can be retained.

- Methodology** References:
- DEC (2012)
- GIS Databases:
- Hydrography, linear - DoW
 - Hydrography, linear (hierarchy) - DoW
 - Geodata, lakes - AUSLIG
 - Geomorphic wetlands (Mgt Categories), Swan Coastal Plain - DEC

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

Comments Proposal may be at variance to this Principle

The soils mapped for King Spring and Brookhampton Roads have been described by Northcote et al (1960-68) as dissected lateritic plateau of a generally hilly relief with chief soils on the slopes being hard acidic, and also neutral, yellow mottled soils containing moderate to large amounts of ironstone gravels. Associated are block laterite, gravelly and bouldery soils on ridge tops; leached sands, some on deposits containing water-worn stones; and small areas of soils of adjoining units.

The soils for Bendall and Gemmell Road reserves are mapped as river terraces with chief soils being neutral red earths and neutral yellow earths on the higher terrace (Northcote et al 1960-68).

The area mapped for Thomas Road has been described as dissected plateau at low elevation of gently undulating to low hilly relief and characterized by extensive block laterite and lateritic (ironstone) gravels; this mapped area contains some swamps with chief soils on slopes and undulating areas being generally hard acidic yellow mottled soils containing varying amounts of ironstone gravels (Northcote et al 1960-68). Associated with this soil type are soils underlain by block laterite on the less dissected areas devoid of stream channels and acid grey earths sometimes containing ironstone gravels in shallow flat-bottomed valleys (Northcote et al 1960-68).

The salinity risk for the areas under application is mapped as low with groundwater salinity ranging from 500-1000mg/L total dissolved solids. Given the mapped soil types and the construction of infrastructure at the sites post clearing, it is unlikely that these areas will be susceptible to wind erosion.

There is however, evidence of erosion resulting from water run off along the drain adjacent to the existing King Spring Road (DEC, 2012). Due to the steep decline of the land adjacent to King Spring and Thomas Roads and the increase in water run-off that is likely to result from the further road widening, there is the risk of erosion from water flows in this area. Appropriate management and road construction measures will be required to reduce the risk of soil erosion from water flows occurring.

Methodology References:
- DEC (2012)
- Northcote et al (1960-68)
GIS Databases:
- Groundwater Salinity, Statewide - DoW
- Hydrography, linear - DoW
- Hydrography, linear (hierarchy) - DoW
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide - DA

(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 may be at variance to this Principle

The closest conservation areas to King Spring Road are Wilga State Forest approximately 3.3km south and an un-named nature reserve (also system 6 conservation reserve) for the purpose of conservation of flora and fauna, approximately 5.7km north west of the applied clearing area. The applied area within Thomas Road reserve is approximately 630m south of Jarrahwood State Forest, with Mullalyup State Forest and a system 6 conservation reserve also occurring within a 10km radius.

Given the distances of the applied clearing areas within King Spring and Thomas Roads to conservation areas, it is not likely that the proposed clearing will impact upon the environmental values of conservation areas in the local area (10km radius).

One system 6 conservation reserve occurs within the local area (10km radius) of the applied clearing area within Brookhampton Road reserve, approximately 1.9km south west. The northern and southern ends of the vegetation under application lie adjacent to East Kirup State Forest (Warner Forest Block) and the applied area provides a linkage through farmland between the areas of the Warner Forest Block, supporting flora and fauna dispersal across this landscape. The proposed clearing will impact upon the vegetation corridor that links the Warner Forest Block (DEC, 2012). Connectivity will remain to these areas through the state forest itself however, the distance to access the areas will be increased.

Two system 6 conservation areas occur within the local area (10km radius) of the applied clearing area along Bendall and Gemmell Road reserves, with the closest being C89 approximately 5.2km east. The vegetation under application provides a linkage of vegetation between Preston River and Boyanup State Forest which is likely to provide some connectivity to facilitate fauna movement across the landscape.

Weed species, including black wattle and *Watsonia* sp. as well as non-native grasses such as kikuyu were recorded within the applied clearing areas during the site visit (DEC, 2012). There is therefore the potential for spread and /or introduction of these weed species to areas of conservation and other vegetation remnants. Appropriate hygiene and control measures will be required in order to reduce the risk of spread of these species. In addition, appropriate hygiene measures and only clearing and disturbing soil in dry conditions will assist in reducing the risk of introduction or spread of dieback into conservation areas.

The proposed clearing may therefore be at variance to this principle.

Methodology References:
- DEC (2012)

- GIS Databases:
- DEC Tenure - DEC
 - System 6 Conservation Reserves - DEC
 - Donnybrook 50cm Orthomosaic - Landgate 2004

(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 salinity risk over the applied clearing areas within King Spring, Bendall and Gemmell, Brookhampton and Thomas Road reserves is mapped as low with a groundwater salinity ranging from 500-1000mg/L total dissolved solids.

The applied clearing area within King Spring Road crosses a number of minor, perennial watercourses (including a tributary of Thomson Brook). There is therefore the possibility of short term sedimentation occurring within these watercourses during the clearing process.

If appropriate management occurs to reduce impact to these watercourses, including the installation of culverts allowing for continued flow of the watercourses, then the proposed clearing is not likely to result in the deterioration of surface water quality in the area.

Given the scale of the proposed clearing and the distances to water courses for Bendall and Gemmell Road reserves and Thomas Road reserve, the proposed clearing is not likely to result in the deterioration of surface and ground water resources in the local area.

- Methodology** GIS Databases:
- Groundwater Salinity, Statewide - DoW
 - Hydrography, linear - DoW
 - Hydrography, linear (hierarchy) - DoW
 - Salinity Risk LM 25m - DOLA 00

(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 vegetation under application comprises up to 0.4ha within King Spring Road reserve, 0.1ha within Bendall and Gemmell Road reserves, 0.4ha within Brookhampton Road reserves and 0.4ha within Thomas Road reserve within the Shire of Donnybrook-Balingup.

Given the small scale of the clearing proposed along each of the road reserves, it is not considered likely that the clearing will result in an increase in the incidence or intensity of flooding in the area. The proposed clearing is therefore not likely to be at variance to this principle.

- Methodology** GIS Databases:
- Hydrography, linear - DoW
 - Hydrography, linear (hierarchy) - DoW

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

Comments

The proposed clearing for road widening and upgrades will be contained within the existing road reserve cadastral boundaries.

The Shire of Donnybrook-Balingup amended the applied clearing area on the 30 April 2012 from 1.3ha to 0.93ha due to a reduction in the clearing required along King Spring Road reserve. This amendment was due to detailed survey and design of the road in order to reduce the impact to the linkage and black cockatoo foraging habitat (Shire of Donnybrook-Balingup, 2012).

The applied clearing within King Spring Road reserve lies within the Busselton-Capel ground water area and crosses the Preston River and Tributaries RiWI river, Bendall and Gemmell Road reserve lie within the Busselton-Capel groundwater area and within the Preston Valley Irrigation District and Brookhampton and Thomas Roads lie within the Capel River and Tributaries RiWI Area and Capel River Surface Water Area. These areas are proclaimed under the Rights in Water and Irrigation Act 1914 administered and managed by the Department of Water.

The Department of Water (DoW) has advised that as "each of the proposed stretches of roadside clearing fall within either a proclaimed Surface Water Area, Irrigation District or on a proclaimed tributary to the Preston River," permits will be required for any proposed interference with the bed or banks within these areas under the Rights in Water and Irrigation Act 1914" (DoW, 2012). DoW has confirmed that no applications have been received for the proposed activities for the Department's assessment. In relation to best management practice,

DoW has advised that the proposed mulching and spreading of cleared vegetation should ensure that it can not become mobile and deposit within the waterways and that some stumps and roots of vegetation may need to be retained in order to maintain bank stability (DoW, 2012). Impact to waterways can be reduced through contractors only traversing waterways at already established crossings (DoW, 2012). Refuelling operations should be undertaken as far away as possible from surface water resources and mechanical equipment should not be parked overnight near watercourses (DoW, 2012)

The Roadside Conservation Committee (2012) has advised that the roadside vegetation within the Shire of Donnybrook-Balingup was surveyed to establish conservation value in 2008. Subsequently, a technical report was prepared which outlined recommendation that could be implemented by the Shire to manage roadside vegetation (RCC, 2012). Some of the measures that the Shire could use to minimise disturbance to vegetation include, clear demarcation of maintenance areas, pruning of branches rather than tree removal where possible, avoid excessive disturbance to soil to reduce risk of increased weed germination, spoil from drains not to be directed towards bushland and to be removed from site, widen to one side of the road where possible to retain the widest road reserve and vegetation in best condition, only move soils in dry conditions to avoid spread of dieback and avoid excessive damage to surrounding vegetation (RCC, 2012).

The area under application within Brookhampton Road reserve is located within the boundary of a registered Aboriginal Site of Significance (Camp/Artefacts/Scatter). The applicant will be advised that they should seek advice from the Department of Indigenous Affairs prior to the commencement of any clearing or works to ensure that no disturbance occurs to the site.

- Methodology**
- References:**
- DoW (2012)
 - RCC (2012)
 - Shire of Donnybrook-Balingup (2012)
- GIS Databases:**
- Aboriginal Sites of Significance - DIA
 - Cadastre - Landgate
 - RiWI, Groundwater Areas - DoW
 - RiWI, Rivers - DoW
 - RiWI, Surface Water Areas and Irrigation Districts - DoW

4. References

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- RCC (2012) Email Correspondence: Advice from Roadside Conservation Committee for Clearing Application CPS 4799/1 - Shire of Donnybrook-Balingup. Roadside Conservation Committee, Kensington, Western Australia (DEC ref A476991).
- Shire of Donnybrook-Balingup (2012) Email correspondence: Reduction in clearing area along King Spring Road reserve and offset information. Shire of Donnybrook-Balingup, Donnybrook, Western Australia. DEC ref A500653.

5. Glossary

Term	Meaning
CALM	Department of Conservation and Land Management (now DEC)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
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 DoW)