



## CLEARING PERMIT

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

### PERMIT DETAILS

Area Permit Number: 3019 / 1  
File Number: DEC10739  
Duration of Permit: 11 July 2009 to 11 July 2014

### PERMIT HOLDER

City of Cockburn

### LAND ON WHICH CLEARING IS TO BE DONE

North Lake Road reserve

### AUTHORISED ACTIVITY

Clearing of up to 1.14 hectare within the area cross-hatched yellow on attached Plan 3019/1.

### CONDITIONS

#### 1. 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.

#### 2. 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 not move soils in wet 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.

#### 3. Offsets

- (a) Determination of *offsets*:
  - (i) if part or all of the clearing to be done is or may be at variance with one or more of the clearing principles, then the Permit Holder must implement an *offset* in accordance with conditions 3(a) and 3(b) of this Permit with respect to that native vegetation;
  - (ii) in determining the *offset* to be implemented with respect to a particular area of native vegetation proposed to be cleared under this Permit, the Permit Holder must have regard to the *offset* principles contained in condition 3(b) of this Permit;

- (iii) once the Permit Holder has developed an *offset proposal*, the Permit Holder must provide that *offset proposal* to the CEO for the CEO's approval prior to undertaking any clearing to which the *offset* relates, and prior to implementing the *offset*;
  - (iv) clearing may not commence until and unless the CEO has approved the *offset proposal*;
  - (v) the Permit Holder shall implement the *offset proposal* approved under condition 3(a)(iii); and
  - (vi) each *offset proposal* shall include a *direct offset*, timing for implementation of the *offset proposal* and may additionally include *contributing offsets*.
- (b) For the purpose of this condition, the *offset* principles are as follows:
- (i) *direct offsets* should directly counterbalance the loss of the native vegetation;
  - (ii) *contributing offsets* should complement and enhance the *direct offset*;
  - (iii) *offsets* are implemented only once all avenues to avoid, minimise, rectify or reduce environmental impacts have been exhausted;
  - (iv) the environmental values, habitat, species, *ecological community*, physical area, ecosystem, landscape, and hydrology of the *offset* should be the same as, or better than, that of the area of native vegetation being *offset*;
  - (v) a ratio greater than 1:1 should be applied to the size of the area of native vegetation that is offset to compensate for the risk that the *offset* may fail;
  - (vi) *offsets* must entail a robust and consistent assessment process;
  - (vii) in determining an appropriate *offset*, consideration should be given to ecosystem function, rarity and type of *ecological community*, vegetation *condition*, habitat quality and area of native vegetation cleared;
  - (viii) the *offset* should either result in no net loss of native vegetation, or lead to a net gain in native vegetation and improve the *condition* of the natural environment;
  - (ix) *offsets* must satisfy all statutory requirements;
  - (x) *offsets* must be clearly defined, documented and audited;
  - (xi) *offsets* must ensure a long-term (10-30 year) benefit; and
  - (xii) an *environmental specialist* must be involved in the design, assessment and monitoring of *offsets*.

#### 4. Records to be kept

- (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 the *offset* of areas pursuant to condition 3:
- (i) the location of any area of *offsets* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
  - (ii) a description of the *offset* activities undertaken; and
  - (iii) the size of the *offset* area (in hectares).

#### 5. Reporting

- (a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 4 of this Permit and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.
- (b) Prior to 11 April 2014, the Permit Holder must provide to the CEO a written report of records required under condition 4 of this Permit where these records have not already been provided under condition 5(a) of this Permit.

## Definitions

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

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

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

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

*ecological community/ies* means a naturally occurring biological assemblage that occurs in a particular type of habitat (English and Blythe, 1997; 1999) – the scale at which ecological communities are defined will depend on the level of detail in the information source, therefore no particular scale is specified;

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

*offset/s* means an offset required to be implemented under condition 3 of this Permit;

*offset proposal* means an *offset* determined by the Permit Holder in accordance with condition 3 of this Permit;

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



Kelly Faulkner  
MANAGER  
NATIVE VEGETATION CONSERVATION BRANCH

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

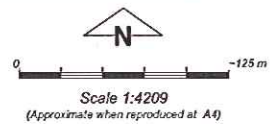
11 June 2009

# Plan 3019/1



## LEGEND

- |                         |  |   |                                |
|-------------------------|--|---|--------------------------------|
| <b>Road Centrelines</b> | <b>Clearing Instruments</b>                      | <input type="checkbox"/> Crown Reserve                          | <input type="checkbox"/> Water |
| FW                      | <input type="checkbox"/> Areas Approved to Clear | <input type="checkbox"/> State Forest / Timber Reserve          |                                |
| HY                      | <b>Perth Metropolitan Area</b>                   | <input type="checkbox"/> Marion Park                            |                                |
| LRO                     | <b>Central 20km Orthomosaic -</b>                | <input type="checkbox"/> Crown Lease                            |                                |
| LRS                     | <b>Landgate 2007</b>                             | <input type="checkbox"/> Lease / Reserve                        |                                |
| MR                      | <b>Cadastre</b>                                  | <input type="checkbox"/> Lease on State Forest / Timber Reserve |                                |
| H                       | <input type="checkbox"/> Freehold                | <input type="checkbox"/> Public Roads                           |                                |
| TR                      | <input type="checkbox"/> (cont)                  | <input type="checkbox"/> Unallocated Crown Land                 |                                |
|                         |  | <input type="checkbox"/> (cont)                                 |                                |



Geocentric Datum Australia 1994

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

*K. Faulkner* Date *11/6/07*

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

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



Department of Environment and Conservation

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\* Project Data is denoted by asterisk. This data has not been quality assured. Please contact map author for details.



## 1. Application details

### 1.1. Permit application details

Permit application No.: 3019/1  
 Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: City of Cockburn

### 1.3. Property details

Property: ROAD RESERVE ( BIBRA LAKE 6163)  
 Local Government Area: City Of Cockburn  
 Colloquial name:

### 1.4. Application

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

## 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
Heddlle Vegetation Complex: Herdsman Complex: Sedgeland and fringing woodland of <i>E. rudis</i> - <i>Melaleuca</i> species.	The proposal is to clear 1.14 ha within North Lake Road Reserve for the purpose of the construction of a second carriageway.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation clearing description based on a site visit conducted by DEC officers on 13 March 2009
Bassendean Complex Central and South: Vegetation ranges from woodland of <i>E. marginata</i> - <i>C. fraseriana</i> - <i>Banksia</i> spp. to low woodland of <i>Melaleuca</i> species, and sedgelands on the moister sites. This area includes the transition of <i>E. marginata</i> to <i>E. todiana</i> in the vicinity of Perth.	The vegetation under application consists of upland areas comprising of <i>Eucalyptus marginata</i> , <i>Eucalyptus gomphocephala</i> , <i>Acacia</i> sp. and <i>Allocasuarina</i> sp. over exotic grasses and weeds such as <i>Cyperus</i> sp. and <i>Breeza</i> sp. and wetland areas comprising of <i>Melaleuca</i> species over exotic grasses and <i>Cirsium</i> sp. in an overall Degraded condition.		
Beard Vegetation Association: 1001: Medium very sparse woodland; jarrah, with low woodland; banksia & casuarina.  6: Medium woodland; tuart & jarrah (Shepherd 2007, SAC Bio Datasets 12/03/2009)			

## 3. Assessment of application against clearing principles

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

**Comments** **Proposal is not likely to be at variance to this Principle**  
 The vegetation under application consists of upland areas comprising of *Eucalyptus marginata*, *Eucalyptus gomphocephala*, *Acacia* sp. and *Allocasuarina* sp. over exotic grasses and weeds such as *Cyperus* sp. and *Breeza* sp. and wetland areas comprising of *Melaleuca* species over exotic grasses and *Cirsium* sp. in an overall Degraded condition.

The area under application contains dense understorey, occurs adjacent to a swampy area and is a part of a small remnant of vegetation that is surrounded by urban development (DEC 2009b), therefore the area under application may be a part of a significant habitat for the conservation significant Quenda (*Isodon obesulus fusciventer*) in the local area. In addition, the vegetation under application may be considered important to maintain fauna values of South Lake.

The vegetation under application is also considered a part of a regionally significant continuous bushland/wetland linkage (Government of Western Australia, 2000).

However, given the relatively small (1.14ha), linear area to be cleared and the Degraded condition of the vegetation under application, it is not considered likely for the proposed clearing to be at variance to this Principle.

**Methodology**    **References**  
-DEC (2009b)  
- Government of Western Australia (2000)  
**GIS Databases**  
- SAC Bio Databases (12/3/09)

**(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**  
There are 10 fauna species of conservation significance recorded within the local area (~5km radius).

The Quenda (*Isoodon obesulus fusciventer*) occurs in dense, scrubby and often swampy vegetation with dense cover and often feeds in adjacent areas of pasture and croplands lying close to dense cover (DEC 2009a). The area under application contains vegetation in a Degraded condition, however it comprises of dense understorey, occurs adjacent to a swampy area and is a part of a small remnant of vegetation that is surrounded by urban development (DEC 2009b). In addition, numerous diggings were observed during the site visit (DEC, 2009b), therefore the area under application may be a part of a significant habitat for the Quenda in the local area.

Many fauna species move between buffer vegetation and wetland areas for feeding and breeding (DEC 2008), given that the area under application provides a buffer for South Lake, the vegetation under application may be considered important to maintain fauna values of South Lake.

A fauna survey which focused on the Bibra Lake area carried out in 2005 identified many fauna species including amphibians, birds, mammals and reptiles such as the Bob-tailed Lizard (*Tiliqua rugosa*) and the Long Necked Tortoise (*Chelodina oblonga*) (City of Cockburn 2009). Given the close proximity of Bibra Lake to the area under application (South Lake) it is likely that some of these species use the area under application (City of Cockburn 2009).

Given the relatively large area to be cleared (1.14 ha), the potential significant habitat for Quenda and the potential of the vegetation to contribute to the fauna values of South Lake, it is considered likely for the area under application to be maybe at variance to this Principle.

**Methodology**    **References**  
- City of Cockburn (2009)  
- DEC (2008)  
- DEC (2009a)  
- DEC (2009b)  
**GIS Databases**  
- SAC Bio Databases (12/3/09)

**(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**  
There is one Rare flora species occurring in the local area (~5 km radius) being *Caladenia huegelli* occurring 3.5 km east of the area under application.

*Caladenia huegelli* is a tuberous, perennial herb growing from 0.25 to 0.6 m high with green, cream and red flowers during Sep and Oct. It grows in deep sandy soil in mixed woodland of jarrah and Banksia (Brown et al. 1998).

The vegetation under application consists of Eucalyptus and Melaleuca species over exotic grasses and weeds and occurs in a Degraded condition (DEC 2009b).

Given that the area under application does not contain the preferred habitat (Jarrah and Banksia woodland) for *Caladenia huegelli* and is in a Degraded condition, it is not considered likely for the proposed clearing to be at variance to this Principle.

**Methodology**    **References**

- Brown et al. (1998)
- DEC (2009b)
- GIS Databases
- SAC Bio Databases (12/3/09)

**(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 Threatened Ecological Communities (TEC) occurring within the local area (~ 5 km radius). The closest TEC is Floristic Community Type (FCT) 26a:M. huegelii - M. acerosa shrublands on limestone ridges, occurring 12 km south of the area under application.

Given the distance to the closest TEC and that no limestone ridges occur within the area under application identified during the site inspection (DEC 2009b) it is not considered likely for the area under application to comprises of or be necessary for the maintenance of a threatened ecological community.

**Methodology**    References  
 -DEC (2009b)  
 Gis Databases  
 -SAC Bio Databases 12/03/09

**(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 vegetation under application is associated with Beard Vegetation Association 1001 and 6 of which there is approximately 25.3% and 26.2% pre-European extent remaining (Shepherd 2007). The vegetation under application is associated with the Heddle Vegetation Bassendean Complex - Central and South and Herdsmen Complex, which has 27.0% and 34.6% pre-European vegetation extent remaining (EPA 2006).

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents a clearance of ecological communities with an extent below 30% of that present pre-European settlement (Commonwealth of Australia 2001). Three out of the four mapped vegetation types associated within the area under application are below the State Governments target of 30%. However, the EPA (2006) recognises the Perth Metropolitan Region as a constrained area, providing for the reduction of vegetation complexes to a minimum of 10% of the Pre-European extent.

Even though the area under application is considered a part of a regionally significant continuous bushland/wetland linkage (Government of Western Australia, 2000) it is not considered significant as a remanent due to its Degraded condition. Therefore, it is not considered likely for the proposed clearing to be at variance to this Principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	In secure tenure (%)
IBRA Bioregion*				
Swan Coastal Plain^	1,501,209	583,141	38.8	32.5
City of Cockburn*	17,087	5753	33.6	14.5
Local Area (~5km radius)	7850	2502	32.0	
Beard vegetation type*				
1001	57,410	14,546	25.3	5.1
6	56,343	14,749	26.2	34.3
Heddle vegetation complex**				
Bassendean Complex Central/ South	87,477	23,624	27.0	0.7
Herdsmen Complex	8309	2875	34.6	11.5

\* (Shepherd, 2007)  
 \*\* (EPA, 2006)  
 ^ Area within Intensive Land Use Zone

**Methodology**    References  
 -Commonwealth of Australia (2001)  
 -EPA (2006)  
 -Government of Western Australia (2000)

-Shepherd (2007)  
GIS Databases  
-Heddle Vegetation Complexes  
-SAC Bio Datasets 12/03/2009

**(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 majority (0.9 ha) of the area under application occurs within South Lake (an EPP Lake) which has been given a Multiple Use and Resource Enhancement management category. The majority of the area under application occurs within the Multiple Use management category of South Lake and occurs 22 m from and within the buffer of the Resource Enhancement portion. The closest watercourse is the Canning River occurring 7km to the north of the area under application.

During the site inspection (DEC 2009b) wetland dependent vegetation was identified, including various *Melaleuca* spp., and sedge species.

Wetland buffers protect wetlands against potential impacts and maintain ecological functions and processes (Water and Rivers Commission, 2001). Reducing wetland buffers can increase edge effects such as weed invasion, decrease biodiversity, reduce vegetation condition, impact on fauna habitat and impact on water quality of a wetland (DEC 2008).

Resource Enhancement wetlands have been partially modified but still support substantial ecological attributes and functions (Waters and Rivers Commission 2001). The objective is to manage, restore and protect towards improving their conservation values (Waters and Rivers Commission 2001).

Given that the area under application occurs within a wetland or within the wetland buffer and that wetland dependent flora species were identified during the site inspection (DEC 2009b), it is considered that the proposed clearing is at variance to this Principle. An offset condition will be placed on the permit to offset the direct loss of wetland dependent vegetation.

**Methodology**

**References**

- DEC (2008)  
-DEC (2009b)  
-Waters and Rivers Commission (2001)  
GIS Databases  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
-Geomorphic Wetlands (Classification), Swan Coastal Plain  
- Hydrography, linear

**(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 occurs on subdued dune-swale terrain with chief soils of leached sands (Northcote et al. 1960-68) and occurs within the Bassendean Dune System (Department of Agriculture 2005) These soils have a high to very high risk of wind erosion (Department of Agriculture, 2005).

The high wind erosion potential is due to the sandy nature of the topsoil and without appropriate ground cover, or adequate dust suppression on exposed surfaces the proposal would be likely to cause land degradation. However, given the thin, linear nature of the proposed clearing and the sealing of exposed surfaces, the risk of wind erosion will be reduced. Therefore, it is not considered likely for the proposed clearing to cause appreciable land degradation.

**Methodology**

**References:**

- Department of Agriculture (2005)  
- Northcote et al (1960)  
GIS Database:  
-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 at variance to this Principle**

The area under application occurs within Bushforever site 254 and Beelihar Regional Park occurs 14 metre to the west of the area under application.

Approximately 0.95 ha of the area under application is located within Bushforever site 254. The vegetation



under application contained within the Bushforever site is considered to be in a Degraded condition (DEC 2009b). The proposed clearing will have a direct impact on the environmental values of Bushforever Site 254 through the removal of vegetation and is also likely to indirectly impact the site by the spread of weeds and dieback from machinery and vehicles. In addition, the area under application is connected to Beeliar Regional Park through continuous vegetation. Given this, it is also considered likely for the proposed clearing to indirectly impact the Regional Park through the spread of weeds and dieback.

The spread of weeds and dieback into areas reserved for conservation can have the potential to cause local extinction of species.

Given the area under application occurs within Bushforever Site 254 and is connected through vegetation to Beeliar Regional Park; the proposed clearing is at variance to this Principle. An offset condition will be placed on the permit to offset for the impacts this proposal will have on Bush Forever site 254 and Beeliar Regional Park.

**Methodology** Reference:  
- DEC (2009b)  
GIS databases:  
- Bushforever  
- DEC Managed Lands and Waters  
- Perth Metropolitan Area Central 20cm Orthomosaic - Landgate 2007

**(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 majority (0.9 ha) of the area under application occurs within South Lake (an EPP Lake) which has been given a Multiple Use and Resource Enhancement management category. The closest watercourse is the Canning River occurring 7km to the north of the area under application.

The area under application has low salinity risk and is relatively small and linear in area therefore; the proposed clearing is not likely to have a significant affect on the salinity or nutrient concentration of South Lake or the groundwater of the local area. Therefore, the proposed clearing is not considered likely to be at variance to this Principle.

**Methodology** GIS Databases  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
- Geomorphic Wetlands (Classification), Swan Coastal Plain  
- Hydrography, linear  
- Salinity Risk

**(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 majority (0.9 ha) of the area under application occurs within South Lake (an EPP Lake) which has been given a Multiple Use and Resource Enhancement management category. The closest watercourse is the Canning River occurring 7km to the north of the area under application.

Given the relatively small (1.14 ha) and linear shape of the area under application, it is not considered likely for the proposed clearing to cause, or exacerbate the incidence or intensity of flooding in the local area.

**Methodology** GIS Databases  
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
- Geomorphic Wetlands (Classification), Swan Coastal Plain  
- Hydrography, linear

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

**Comments**

The area under application is zoned Other Regional Roads under the Metropolitan Regional Scheme.

Western Australian Planning Commission (WAPC) development approval is outstanding. However, approval is to be granted in the near future.

The proposed widening of North Lake Road within the area under application is the final portion of duplication of North Lake Road. This is necessary to cater for increasing traffic flows for the developed suburbs of Yangebup and South Lake. Along with the widening of the existing carriageway, drainage works, a cycle path and a fauna underpass will be constructed (City of Cockburn 2009).

The area under application has a high to moderate risk of Acid Sulfate Soils (ASS). Therefore, the disturbance of these areas is considered likely to result in appreciable land degradation through acidity and cause deterioration of surface water of South Lake.

DEC Regional Parks section (2009) provided comment on the proposal and state that there should be no impacts on the interface of Beeliar Regional Park during the construction and a fence is required to be installed prior to construction between the Regional Park and the road. DEC Regional Parks further state that the proposal would intrude into the preferred minimum wetland buffer area of South Lake, given this they request that rehabilitation works be undertaken within the southern side of South Lake double the area of vegetation removed. In addition, it is stated that the proposal occurs in a high- moderate acid sulphate soil risk area and that site investigations for acid sulphate soils should be undertaken prior to any proposed site works and an acid sulphate soils management plan to be prepared.

DPI (2008) provided comment on the proposal and state that the proposal is acceptable under Section 5.2.3.2 (i) (c) of the Bushland Policy of the Perth Metropolitan Region Statement of Planning Policy 2, which requires that the proposal justifies, with regards to the wider environmental, social and economic consideration that all feasible alternatives have been considered to avoid or minimise any direct loss of regionally significant bushland. However, DPI states that the proposal impacts upon Bushforever site 254 and therefore, requires an appropriate offset package.

The proposal has not been formally referred to the EPA for assessment or advice; however the EPA has provided informal comments on the proposal. The EPA (2009) state that the proposed drainage within the area under application has the potential to significantly impact South Lake through inputs of nutrients and potential overflow of contaminated water into the wetlands and that the drainage design should therefore adequately address these issues. In addition, the EPA state that a revegetation plan should be prepared and implemented prior to site works within the Bushforever areas that are likely to be impacted by the proposal and the timing of proposal should be done during a time of year that causes minimum impact to the fauna in the area. The EPA does not consider these environmental factors to be fatal constraints to the proposal although it expects that these environmental issues will be adequately managed through the planning process.

#### Methodology

#### References

- City of Cockburn (2009)
  - DEC Regional Parks (2009)
  - DPI (2008)
  - EPA (2009)
- #### GIS Databases
- Acid Sulfate Soil Risk Map, Swan Coastal Plain
  - Metropolitan Regional Scheme Zones

## 4. Assessor's comments

#### Comment

The assessable criteria have been addressed and the clearing as proposed is at variance to Principles (f) and (h) and may be at variance to Principles (b).

## 5. References

Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.

City of Cockburn (2009) North Lake Road - Construction of Second Carriageway Construction Environmental Management Plan. (TRIM Ref DOC77546).

Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.

DEC (2008) Memo re Standard Wetlands Advice for Native Vegetation Conservation Branch. Dated 17/07/2008. Species and Communities Branch, Department of Environment and Conservation, Western Australia (TRIM Ref. DOC59490).

DEC (2009) NatureBase - Fauna Species Profile: . Accessed at <http://www.naturebase.net/content/view/840/1288/>. Accessed 17/03/09. Department of Environment and Conservation, Western Australia.

DEC (2009b) Site Inspection Report for Clearing Permit Application CPS 3019/1 North Lake Road reserve, Bibra Lake. Site inspection undertaken 16/03/2009. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC79251).

DEC Regional Parks (2009) Comments on Submission to EPA for Approval to Construct the Second Carriageway of North Lake Road.( TRIM Ref. DOC78985).

Department of Agriculture (2005) AgMaps Land Manager CD-rom for the Shires of Serpentine-Jarrahdale, Kwinana,

Rockingham, Mandurah, Murray, Boddington, Waroona and Harvey. Department of Agriculture, Western Australia. ISSN: 1448-235X.

DPI (2008) Comments on Submission to EPA for Approval to Construct the Second Carriageway of North Lake Road. Resource Protection and Management, Department for Planning & Infrastructure, Western Australia (TRIM Ref. DOC77546).

EPA (2006) Guidance for the Assessment of Environmental Factors - Level of Assessment for Proposals Affecting Natural Areas Within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region. Guidance Statement No 10. Environmental Protection Authority, Western Australia.

EPA (2009) Comments on North Lake Road - Environmental Issues Construction of Second Carriage Way - Discovery Drive to Bibra Drive. Environmental Protection Authority Service Unit. (TRIM Ref. DOC77546).

Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.

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## 6. 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)