



## 1. Application details

### 1.1. Permit application details

Permit application No.: 1679/1  
 Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: City of Cockburn

### 1.3. Property details

Property: LOT 9909 ON PLAN 47039 (SPEARWOOD 6163)  
 LOT 22 ON DIAGRAM 21854 (SPEARWOOD 6163)  
 Road Reserve (SPEARWOOD 6163)  
 Local Government Area: City Of Cockburn

Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.3		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 Complex: Vegetation	The proposal includes the clearing of 1.3 hectares of native vegetation for the purpose of road construction.	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 31 January 2007 and a botanical survey conducted by Regen4 Environmental Consultants (2006). The vegetation under application ranges in condition from completely degraded to good, with an overall condition of degraded.
Cottesloe Complex - Central and South - Mosaic of woodland of <i>E. gomphocephala</i> and open forest of <i>E. gomphocephala</i> - <i>E. marginata</i> - <i>E. calophylla</i> ; closed heath on the Limestone outcrops.	Vegetation in the eastern section of the applied area comprises <i>Acacia rostellifera</i> shrubland in degraded condition. Vegetation then progresses west through closed heath of <i>Dryandra sessilis</i> with some <i>Xanthorrhoea preissii</i> in good condition, then in degraded condition. Vegetation in the centre of the applied area, to the south of the track comprises <i>D. sessilis</i> and <i>A. cyclops</i> in a degraded condition, with some Tuart woodland over <i>Agonis flexuosa</i> . To the north of the track vegetation is completely degraded. Vegetation to the west comprises <i>D. sessilis</i> with <i>Melaleuca huegelii</i> and <i>A. rostellifera</i> in good to degraded condition.		
Beard Association 998: Medium woodland; Tuart			

## 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**  
 During a flora survey 28 different taxa were identified within the area under application, which is mostly in degraded condition and is considered to have a low species diversity (Regen4 Environmental Consultants 2006).  
  
 Given the low species diversity and degraded condition of the vegetation under application, the lack of significant fauna habitat and that the vegetation contained within the adjacent Beelir Regional Park is likely to be in better condition, it is not considered likely that it comprises a high level of biodiversity.

**Methodology** Regen4 Environmental Consultants (2006)

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

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

The vegetation under application is mostly in degraded condition, and there is no understorey present in the majority of the site, therefore limiting the habitat potential for ground dwelling fauna such as Quenda.

Vegetation in the centre southern portion of the applied area includes mature *Eucalyptus gomphocephala* however they are not considered to be of hollow-bearing age that would provide habitat for species such as Carnaby's Black Cockatoo. The *Dryandra sessilis* (Parrot Bush) located throughout the majority of the applied area may be utilised for feeding habitat by avian fauna such as Carnaby's Black Cockatoo, however this is not considered likely to be significant when compared to the vegetation remaining in adjacent Beeliam Regional Park and Bush Forever site.

Although the vegetation under application may provide some habitat for native fauna, it is not considered likely to be significant when compared to the habitat available in the adjacent conservation areas.

**Methodology** DEC site visit 31/1/07

**(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 are no known occurrences of Declared Rare Flora (DRF) within the local area (5km radius) of the application, with the nearest occurring 8km to the east.

There are two known occurrences of the Priority Flora *Dodonaea hackettiana* within the local area, the closest of which is located 3.5km to the south within the same vegetation complex and soil association as the applied area. *D. hackettiana* is described as an erect shrub or tree, 1-5 m high with yellow, green or red flowers, and grows on sand and outcropping limestone (Western Australia Herbarium (1996).

Although a flora survey conducted by Regen4 Environmental Consultants (2006) was not conducted in spring, *D. hackettiana* is an easily identifiable shrub and was not recorded within the area under application. No other DRF or Priority flora was recorded during this survey.

Given the absence of DRF within the local area, and that *D. hackettiana* was not recorded during the flora survey, the vegetation under application is not considered likely to include, or be necessary for the maintenance of, rare flora.

**Methodology** Regen4 Environmental Consultants (2006)  
Western Australian Herbarium (1996)  
GIS Databases:  
Declared Rare and Priority Flora List - CALM 01/07/05  
Heddl Vegetation Complexes - DEP 21/06/95  
Soils, Statewide - DA 11/99

**(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 four known occurrences of Threatened Ecological Communities (TEC) in the local area (5km radius), all of which are located approximately 3.5km to the south of the applied area, at Woodman Point.

The Bush Forever study identified the TEC associated with the Spearwood Dune System as *Melaleuca huegelii* - *Melaleuca acerosa* shrublands on Limestone ridges (26a).

Biodiversity Coordination Section (2007) advise that the Bush Forever site occurring immediately to the north infers the presence of Floristic Community Types (FCT) 17 and 24, which are not TECs.

Given that the FCT within the adjacent Bush Forever site are not identified as TEC, it is not considered likely that the vegetation under application comprises a TEC. In addition given the distance to the nearest known TEC, it is not considered likely that the vegetation under application is necessary for the maintenance of a TEC.

**Methodology** Biodiversity Coordination Section (2007)  
DEC site visit 31/1/07  
Government of Western Australia (2000)  
Regen4 Environmental Consultants (2006)  
GIS Database: Threatened Ecological Communities - CALM 12/4/05

**(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**

Heddle et al. (1980) defines the vegetation under application as 'Cottesloe Complex - Central and South'. This vegetation complex is recognised as having 45% of pre-European vegetation remaining and is considered to be of 'depleted' status for biodiversity conservation (Department of Natural Resources and Environment 2002; Shepherd et al. 2001).

The vegetation under application is also classified as vegetation association 998, of which there is 35.9% of pre-European extent remaining and which is also considered to be depleted (Shepherd et al. 2001).

These vegetation types have representations above the recommended minimum level of 30%, as recognised by both the EPA and the State Government (EPA, 2003; Department of Natural Resources and Environment, 2002) and the proposal is therefore not likely to be at variance with this principle.

	Pre-European (ha)	Current (ha)	Remaining %	Conservation status*** %	in
reserves					
Swan Coastal Plain	1,529,235	657,450	43.0*	Depleted	
City of Cockburn			*		
Heddle vegetation complex			**		
Cottesloe Complex C&S	44,995	18,474	41.1	Depleted	8.8
Beard vegetation associations					
998	51,094	18,320	35.9	Depleted	32.9
* (Shepherd et al. 2001)					
**(EPA, 2003)					
***(Department of Natural Resources and Environment 2002)					

**Methodology** Heddle et al. (1980)  
Shepherd et al. (2001)  
Department of Natural Resource and Environment (2002)  
EPA (2003)  
GIS Databases:  
Heddle Vegetation Complexes - DEP 21/06/95  
Pre-European Vegetation - DA 01/01

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

The area under application is located on a sandy rise approximately 550m to the south of Manning Lake, which is classified as a Conservation Category Wetland (CCW). The coastal waterline is also located approximately 650m to the west.

Given the distance to the nearest wetland, the position in the landscape on a sandy rise and that no wetland dependent vegetation was observed within the applied areas, the vegetation under application is not considered likely to be growing in, or in association with, an environment associated with a watercourse or wetland.

**Methodology** DEC Site visit 31/1/07  
GIS Databases:  
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
Hydrography, linear (hierarchy) - DOW

**(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**

Soils within the area under application are described as siliceous sands with smaller areas of brown sands and leached sands in the wetter sites (Western Australian Department of Agriculture 2004). The area under application has a nil risk of acid sulphate soils and a low risk of salinity.

The sandy soils identified on site are associated with a high risk of wind erosion without adequate ground cover, windbreaks or adequate dust suppression of exposed surfaces. The proposed clearing therefore may be at variance.

The City of Cockburn has advised that a standard Dust Management Plan is implemented with the construction of roads, and this will minimise the risk of wind erosion during construction. In addition, the road surface will be sealed, therefore wind erosion after construction is not likely to occur.

**Methodology** Western Australian Department of Agriculture (2004)  
GIS Database:  
Acid Sulfate Soil Risk Map, SCP - DOE 04/11/04  
Salinity Risk LM 25m - DOLA 00  
Soils, Statewide - DA 11/99

**(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 area under application is bounded to the north and south by Beeliar Regional Park, which is also a Bush Forever site to the north, and which has an interim listing on the Register of the National Estate.

The vegetation under application may provide a buffer that limits the effects of weeds on the Regional Park and Bush Forever site. Weed species or dieback may be spread or introduced into areas adjacent to the applied area by machinery used for vegetation clearing or road construction. There are serious consequences associated with the spread of such diseases and exotic species into an area reserved for conservation, including the potential local extinction of species.

Given that there is the potential for the proposed clearing to indirectly impact the environmental values of the conservation reserve adjacent to the applied area, it is considered that the proposal may be at variance to this Principle. To minimise the impacts of the clearing on the adjacent conservation reserve, conditions will be placed on the permit to ensure wash down of vehicles and to ensure construction material is weed and dieback free, and requiring weed management.

**Methodology** GIS Databases:  
Bushforever - MFP 07/01  
Register of National Estate - EA 28/01/03

**(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 applied area is located approximately 550m from Manning Lake, at an elevation of 10 - 35 metres. The coastal waterline is also located approximately 650m to the west. The applied area is not located within a Public Drinking Water Source Area (PDWSA), and there is a nil risk of Acid Sulphate Soils (ASS) and a low risk of salinity.

Given the high filtration rates of the sandy soils identified within the area under application, the proposed clearing is not likely to cause water erosion that would result in deterioration of surface water quality in the nearby wetlands. In addition, given the low risk of ASS and salinity, the proposed clearing is not likely to result in deterioration in groundwater quality.

**Methodology** DEC site visit 31/1/07  
GIS Databases:  
Acid Sulfate Soil Risk Map, SCP - DOE 04/11/04  
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
Public Drinking Water Source Areas (PDWSAs) - DOE 07/02/06  
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**

Lot 9909 is located approximately 550m from Manning Lake, at an elevation of 10 - 35 metres. The area under application is located on sandy soils with high infiltration rates and therefore it is not considered likely that the proposal would have an impact on peak flood height or duration.

**Methodology** GIS Databases:  
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain  
Rainfall, Mean Annual - BOM 30/09/01  
Topographic Contours, Statewide - DOLA 12/09/02

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

**Comments**

The area under application is designated under the Metropolitan Regional Scheme as 'Other Regional Roads' and the Western Australian Planning Commission has given the City of Cockburn permission to enter the land for the purpose of road construction and associated activities.

The Australian Heritage Council (AHC) advised that Beeliiar Regional Park is not included in the Register of National Estate and that the Register is only an information source for informed decisions to be made. The AHC also advise that the boundary was drawn before digital cadastre was available and therefore there may be some inconsistency with the Metropolitan Regional Scheme mapping, which is intended to match.

The areas under application are located within a Native Title Claim area, however the lots have freehold titles and therefore Native Title is extinguished and the clearing as proposed should not fall under the future acts process under the Native Title Act 1993.

**Methodology** Australian Heritage Council (2007)  
 GIS Databases:  
 Metropolitan Regional Scheme - DPI 07/10/05  
 Native Title Claims - DLI 7/11/05

#### 4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Road construction maintenance	Mechanical Removal	1.3	<p>The assessable criteria have been addressed, and the proposed clearing may be at variance to Principle g and h.</p> <p>Principle (g): The sandy soils on site have a high risk of wind erosion, however the City of Cockburn have advised that a Dust Management Plan will be implemented during the construction of the road.</p> <p>Principle (h): The proposed clearing has the potential to indirectly impact the environmental values of the adjacent conservation reserve through the spread of weeds and dieback.</p> <p>The assessing officer therefore recommends that the permit be granted with conditions relating to dieback and weed prevention, and also weed management.</p>

#### 5. References

- Clearing Assessment Unit's biodiversity advice for land clearing application. Advice to Director General, Department of Environment and Conservation (DEC), Western Australia. TRIM ref DOC18961.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority.
- Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- JANIS Forests Criteria (1997) Nationally agreed criteria for the establishment of a comprehensive, Adequate and Representative reserve System for Forests in Australia. A report by the Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee. Regional Forests Agreement process. Commonwealth of Australia, Canberra.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Regen4 Environmental Consultants (2006) Botanical Survey of Spearwood Avenue Extension and Surrounds, Manning Reserve. DEC TRIM ref. DOC11540.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
- Site Visit 31/1/2007, Department of Environment and Conservation (DEC), Western Australia. TRIM ref DOC14901.
- Western Australia Department of Agriculture, 2004, Soil-landscape mapping, Western Australia Department of Agriculture, Date accessed 01/05/04.
- Western Australian Herbarium (1996) Department of Environment and Conservation. Text used with permission (<http://florabase.calm.wa.gov.au/help/copyright>). Accessed on Thursday, 22 March 2007.

## 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)