



## 1. Application details

### 1.1. Permit application details

Permit application No.: 1925/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: City of Wanneroo

### 1.3. Property details

Property: LOT 2 ON DIAGRAM 60963 (House No. 239 BADGERUP WANGARA 6065)  
LOT 13 ON DIAGRAM 16710 (House No. 120 BADGERUP WANGARA 6065)  
LOT 9 ON DIAGRAM 16710 (House No. 119 BADGERUP WANGARA 6065)  
LOT 13 ON PLAN 47390 (House No. 287L GNANGARA WANGARA 6065)  
LOT 12 ON PLAN 47390 (House No. 41 CALLAWAY WANGARA 6065)  
ROAD RESERVE ( GNANGARA 6065)  
ROAD RESERVE ( WANGARA 6065)

Local Government Area: City Of Wanneroo

Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
12.5		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
Beard Vegetation Association:  -No.6: Medium woodland of Tuart (Eucalyptus gomphocephala) & (Eucalyptus Marginata) Jarrah.	The proposal is for a 'clearing permit for the extension of Ocean Reef Road from Hartman Drive to the western edge of Bush Forever Site 463 in the City of Wanneroo' (SMEC, 2007) (TRIM ref DOC23276).	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	A flora and vegetation survey of the proposed road extension was undertaken between 19 and 20 October 2006. There were 5 vegetation notations identified that ranged in condition from 'Very Good' to 'Degraded' (ATA Environmental, 2007) (TRIM ref DOC23276).
-No.949: Low woodland of Banksia.			
Heddle Vegetation Complex:  -Karrakatta Complex - Central and South: Predominantly open forest of Eucalyptus gomphocephala, Eucalyptus marginata, Corymbia calophylla and woodland of Eucalyptus marginata and Banksia species.			

## 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 proposal is a for clearing of 12.5ha of native vegetation for the extension of Ocean Reef Road from Hartman Drive to the western edge of Bush Forever Site 463 in the City of Wanneroo (SMEC, 2007).

A flora and vegetation survey of the proposed road extension was undertaken between 19 and 20 October 2006. There were 5 vegetation notations identified, that ranged in condition from 'Very Good' to 'Degraded' (ATA Environmental, 2007) (TRIM ref DOC23276).

A total of 92 taxa representing 69 genera and 28 families were recorded. No Declared Rare Flora were collected from the survey area however a population of approximately 10 plants of the Priority 4 listed *Jacksonia sericea*, was recorded within sample site 'Quadrat 5' (ATA Environmental, 2007) (Trim ref DOC232760).

An NVCB site visit was also conducted on 31 July 2007. The application area has been modified with evidence of historical timber removal with very few mature trees remaining. The trees remaining are unlikely to provide nesting habitat for Carnaby's Black-Cockatoo or constitute significant habitat for fauna. The site has also been degraded by vehicular traffic, weed invasion, fire impact and illegal dumping of rubbish (DEC, 2007).

There are only small areas of remnant vegetation remaining within the 5km local area and they have been highly fragmented due to urban and industrial development. Even though the application area has been modified and some areas have been classified as 'Degraded' (ATA Environmental, 2007) it is likely that the vegetation within the application area may be considered 'significant' in a local context due to the paucity of remnants remaining within the 5km local area.

Given the above, the proposal may be at variance to this principle.

To mitigate the loss of biodiversity within the road reserve and surrounding areas, conditions have been imposed on the permit to avoid and minimise clearing and measures to address dieback and weed risks.

**Methodology** SMEC (2007)  
ATA Environmental (2007)

**(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 records of 2 'Endangered', 2 records of 1 'Vulnerable' and 13 records of 2 'Priority' fauna species occurring within the 5km local area of the application (12.5ha). The closest record, Carnaby's Black-Cockatoo, *Calyptorhynchus latirostris* (Endangered), was from 203m north of the application area (SAC Bio Datasets 180707).

ATA Environmental (2007) conducted a flora and vegetation survey of the application area (19 and 20 October 2006). The condition of the vegetation associated with the complexes present was assessed as being 'Very Good' to 'Degraded' (Government of Western Australia, 2000).

The survey area is associated with the Karrakatta Vegetation Complex - Central and South. A total of five discrete vegetation types were identified from the survey area comprised of *Banksia* sp. dominated woodlands, Jarrah (*Eucalyptus marginata*) dominated woodlands and *Adenanthos cygnorum* dominated shrubland (ATA Environmental, 2007).

It is possible that the application area may be utilised as roosting and feeding habitat for Carnaby's Black-Cockatoo. It is unlikely the application area would be utilised for nesting habitat for Carnaby's Black-Cockatoo as the application appears to have been previously logged and there does not appear to be any large mature trees that could support this species particular nesting requirements (DEC, 2007).

There are only small areas of remnant vegetation remaining within the 5km local area and they have been highly fragmented due to urban and industrial encroachment. Even though the application area has been modified and some areas have been classified as 'Degraded' (ATA Environmental, 2007) it is likely the vegetation within the application area would provide some fauna habitat, albeit compromised, by various forms of degradation.

The proposed clearing will also impact on the ecological linkage between two Bush Forever Sites (327 and 463). The corridor is interrupted by Badgerup Road and the removal of this vegetation will further fragment the remaining remnants within the local area. Clearing will reduce the value of the native vegetation remnant for native fauna particularly for mobile species as they move through the landscape of fragmented vegetation pockets.

Given the above, this proposal may be at variance to this principle.

To mitigate the loss of fauna habitat and to reduce the impact of the loss of any ecological linkages, conditions have been imposed on the permit to avoid and minimise clearing and measures to address dieback and weed risks.

**Methodology** ATA Environmental (2007)

Government of Western Australia (2000)  
DEC (2007)  
SAC Bio Datasets (180707)  
GIS Database:  
-Swan Coastal Plain North 20cm Orthomosaic - DLI06  
-Bushforever - MFP 07/01

**(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 2 records of 2 'Rare' and 12 records of 4 'Priority' flora species occurring within a 5km of the application area (12.5ha). The closest records, *Pityrodia axillaris* (Rare) and *Jacksonia sericea* (Priority 4), were from approximately 1.6km east of the application area (SAC Bio Datasets 180707).

A flora and vegetation survey of the proposed road extension was undertaken between 19 and 20 October 2006. There were 5 vegetation notations identified that ranged in condition from 'Very Good' to 'Degraded' (ATA Environmental, 2007).

A total of 92 taxa representing 69 genera and 28 families were recorded. No Declared Rare Flora were collected from the survey area however a population of approximately 10 plants of the priority 4 listed *Jacksonia sericea*, was recorded within sample site 'Quadrat 5' (ATA Environmental, 2007) (Trim ref DOC232760).

There were no Declared Rare Flora species recorded within the application area, however, a population of approximately 10 plants of *Jacksonia sericea* 'Priority 4' were identified within the application. This priority species is considered to have been adequately surveyed and is not limited to this application area. This species is known to occur close to Badgerup lake, the Wanneroo Bush Forever Site and adjacent bushland (SMEC, 2007).

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

**Methodology** ATA Environmental (2007)  
SAC Bio Datasets (180707)

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

There are 31 records of 1 'Threatened Ecological Community' occurring within the 5km local area of the application (12.5ha). The closest record, community type SCP20a (*Banksia attenuata* woodlands over species rich dense shrublands) is situated approximately 553m south of the application area (SAC Bio Datasets 180707).

The application area has similar soils and vegetation associations as the Threatened Ecological Communities SCP20a within the 5km local area.

The vegetation condition was described as 'Very Good' to 'Degraded' using the Bush Forever scales. The vegetation was compared to the floristic community type data held in Gibson et al. (1994) (Species & Communities Branch).

The ATA Environmental report concluded that the floristic data that they analysed would most likely align the vegetation at this site with that of FCT 28 'Spearwood *Banksia attenuata* or *Banksia attenuata* - *Eucalyptus* woodlands' which is not listed as threatened in WA (Species & Communities Branch).

TEC type SCP20a '*Banksia attenuata* woodlands over species rich dense shrublands' is listed as Endangered and is recorded from approximately 553 metres south of the application area. FCT 28 and SCP20a community types are closely aligned with each other (Species & Communities Branch).

The proponent has provided supporting documentation regarding flora surveys, vegetation and soil types for the application, ATA Environmental (2007) methodology varies from that described as per Gibson et al. (2004).

This proposal may be at variance to this principle.

To mitigate the potential impacts of the clearing of remnant vegetation and whilst acknowledging the need to upgrade roads, the proposed clearing will be carried out in accordance with a condition requiring that clearing vegetation be avoided, and where this is not possible, minimised.

**Methodology** ATA Environmental (2007)  
Gibson et al. (1994)

**(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 National Objective and Targets for Biodiversity Conservation 2001-2005 (AGPS, 2001) recognises that the retention of 30% or more of the pre-clearing extent of each ecological community is the target.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	Conservation** status	% In reserves DEC Managed Land
IBRA Bioregions*					
Swan Coastal Plain^	1,501,456	571,758	38.1	Least Concern	N/A
Shire****					
Wanneroo	78,809	45,361	57.6	Least Concern	N/A
Mattiske Vegetation Complex***					
N/A					
Hedde Vegetation Complex#					
Karrakatta - Central and South		49,935	13,331	26.7	Vulnerable
N/A					
Beard Vegetation Complex*					
Bassendean No.949	218,204	124,461	57.0	Least Concern	N/A
Spearwood No.6	56,345	15,013	26.6	Vulnerable	N/A

\* (Shepherd et al. 2006)

\*\* (Department of Natural Resources and Environment 2002)

\*\*\* (Mattiske Consulting 1998)

\*\*\*\* (Shepherd et al. 2001)

# (Hedde et al. 2002)

^ Area within Intensive Land Use Zone

The Hedde et al. 1980 vegetation complex Karrakatta - Central and South and the Beard et al. 1974 vegetation association Spearwood No.6 (26.7% and 26.6% respectively) are the only two representatives that are below the National Objective and Targets for Biodiversity Conservation 2001-2005 (AGPS, 2001) biodiversity target of 30%.

'Approximately 18% (or 6,275ha) of the original extent of the Karrakatta Complex - Central and South remains on the Swan Coastal Plain with only 8% currently protected in secure reserves. This current extent is below the minimum threshold of retention of 30 % of the pre-European extent of vegetation complexes recommended in Bush Forever (Government of Western Australia, 2000) and as a consequence this vegetation complex is considered regionally 'significant' (ATA Environmental, 2007).

The proposed road construction is within the Perth metropolitan area and is surrounded by industrial and residential development. The area proposed to be cleared is on the Swan Coastal Plain within the constrained area of the Perth metropolitan area. In constrained areas a benchmark of 10% retention is applied. The native vegetation associations under assessment are all greater than 10%.

There are only small areas of remnant vegetation remaining within the 5km local area and they have been highly fragmented due to urban and industrial development. It is likely that the 12.5 hectares of vegetation within the application area would be considered 'significant' as a remnant in a local context.

The application area has been historically modified with the condition of the vegetation within the application ranging from 'Very Good' to 'Degraded' (ATA Environmental, 2007).

Even though the application area has been modified and some areas have been classified as degraded (ATA Environmental, 2007) as well as all the vegetation associations having a greater than 10% retention (required in constrained areas) it is likely that the vegetation within the application area may be considered 'significant' due to the small amount of remnants remaining within the 5km local area.

To mitigate the potential impacts of the clearing of remnant vegetation, whilst acknowledging the need to upgrade roads, the proposed clearing will be carried out in accordance with a condition requiring that clearing vegetation be avoided, and where this is not possible, minimised. In addition, to address the loss of vegetation within the road reserve, conditions have been imposed to offset the values of the areas to be cleared.

Shepherd et al. (2006)  
Department of Natural Resources and Environment (2002)  
Mattiske Consulting (1998)  
Shepherd et al. (2001)  
Heddle et al. (2002)  
Government of Western Australia (2000)  
ATA Environmental (2007)  
GIS databases:  
- Mattiske Vegetation - CALM 24/3/98  
- Heddle Vegetation Complexes - DEP 21/06/95  
- Interim Biogeographic Regionalisation of Australia - EM 18/10/00  
- Local Government Authorities - DLI 8/07/04  
- 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 not associated with any known watercourse or wetland.

The closest record of a watercourse or wetland is the 'Sydney Road Wetland' which is approximately 326m south-east of the application area. This sumpland is classified as an EPP wetland. Little Badgerup Lake is also close to the application, approximately 329m north of the application area. This sumpland is also classified as an EPP wetland.

It is unlikely that the native vegetation within this application would be associated with either of these wetlands. The vegetation is unlikely to have any 'significant' value for these wetlands and any linkages between them have been fragmented with modifications in vegetation and landscape through urban and industrial development.

The proposal is not likely to be at variance to this principle.

**Methodology**

GIS Databases:  
-Hydrography, linear - DOE 1/2/04  
-Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC  
-Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC\_1  
-Geodata, Lakes - GA 28/06/02  
-RAMSAR, Wetlands - CALM 14/02/03  
-EPP, Wetlands 2004 (DRAFT) - DOE 21/7/04  
-EPP, Lakes - DEP 1/12/92  
-ANCA, Wetlands - CALM 08/01

**(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**

'Areas adjacent to the proposed clearing have been identified as having a high risk of containing acid sulphate soils and potential acid sulphate soils within 3m of the soil surface' (ATA Environmental, 2007).

'The proposal requires cuts of 10 metres to be made approximately 300m from areas that have a high risk of acid sulphate soils. Should dewatering occur in these areas it is very likely that the radius of the groundwater depression that occurs will expose potential acid sulphate soils to the air resulting in the formation of acid sulphate soils' (ATA Environmental, 2007).

The application and associated 'roadwork's pipe drainage network has been designed to channel water into a new wetland/sumpland that is being constructed' (ATA Environmental, 2007). This infrastructure will help to prevent the possibility of water logging.

The proposed clearing (12.5ha) may cause some short term land degradation issues in terms of surface water sedimentation and soil erosion during works. However, these issues should be minimal as the road application area is linear, occurs adjacent to areas with roadside infrastructure or will have infrastructure in place to prevent land degradation issues. No dewatering is required during the proposal therefore there is no risk of disturbance of potential acid sulphate soils (ATA Environmental, 2007).

Given the above, it is not likely that the proposed clearing will be at variance to this principle.

**Methodology**

ATA Environmental (2007)  
GIS Database:

**(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**

GIS Database records indicate that the closest DEC managed reserve to the application area is a State Forest (Gnangara-Moore River State Forest) approximately 2.4km east of the application area.

The application area (12.5ha) is also bordered by two Bush Forever Sites. Bush Forever Site 327 borders a section of the application area to the north and Bush Forever Site 463 to the south and east.

The proposed clearing will impact on the ecological linkage between the two Bush Forever sites. The corridor has been transected by a road however the removal of this vegetation will further fragment the remaining remnants within the local area.

Aerial orthomosaic photos indicate that most remnant vegetation within the 5km local area has been extensively cleared and fragmented. Clearing will reduce the value of the native vegetation remnant for native fauna for nesting, foraging and movement as they move through the landscape of fragmented vegetation pockets.

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

To mitigate the potential impacts of the clearing on conservation areas, whilst acknowledging the need to upgrade roads, the proposed clearing will be carried out in accordance with a condition requiring that clearing vegetation be avoided, and where this is not possible, minimised. In addition, to address the loss of vegetation within the road reserve, offset conditions of the area have been imposed and conditions have been implemented to avoid effects on surrounding remnants and reserves with dieback and weed control conditions.

**Methodology ATA Environmental (2007)**

GIS Database:

-Swan Coastal Plain North 20cm Orthomosaic - DLI06

-Bushforever - MFP 07/01

**(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.**

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

The proposed clearing is located within the Swan Avon - Lower Swan hydrographic catchment area.

The areas under application are not located within any Public Drinking Water Source Areas.

The area under application is not associated with any known watercourse or wetland and to minimise any land degradation associated with the proposal the proponent has developed a roadwork's pipe drainage network. The roadwork's pipe drainage network has been designed to channel water into the new wetland/sumpland. A small sump and reed bank will separate the road and the created wetland. This sump will collect the road run-off and act to separate out particulates of pollutants. The road design is such that the separation sump will prevent the contamination of existing and created wetlands. While the impermeable base and the separation distance between the wetland base (created wetland) and the water table will prevent the contamination of groundwater (ATA Environmental, 2007).

The proposed clearing (12.5ha) may cause some short term land degradation issues in terms of surface water sedimentation and soil erosion during works. However, these issues should be minimal as the road application area is linear, occurs adjacent to areas with roadside infrastructure or will have infrastructure in place to prevent land degradation issues. The application area is associated with sandy soils that are likely to be free draining, therefore it is not likely the proposal will be at variance to this principle.

**Methodology ATA Environmental (2007)**

GIS Database:

-Hydrographic Catchments - Catchments - DOW

-Hydrographic Catchments - Basins - DOW

-Public Drinking Water Source Areas (PDWSAs) - DOW

**(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 area under application is not associated with any known watercourse or wetland and to minimise any land degradation associated with the proposal the proponent has developed a roadwork's pipe drainage network. The roadwork's pipe drainage network has been designed to channel water into the new wetland/sumpland. A small sump and reed bank will separate the road and the created wetland. This sump will collect the road run-

off and act to separate out particulates of pollutants. The road design is such that the separation sump will prevent the contamination of existing and created wetlands. While the impermeable base and the separation distance between the wetland base (created wetland) and the water table will prevent the contamination of groundwater' (ATA Environmental, 2007).

The proposed clearing (12.5ha) may cause some short term land degradation issues in terms of surface water sedimentation and soil erosion during works. However, these issues should be minimal as the road application area is linear, occurs adjacent to areas with roadside infrastructure or will have infrastructure in place to prevent land degradation issues. The application area is associated with sandy soils that are likely to be free draining, therefore it is not likely the proposal will be at variance to this principle.

**Methodology** ATA Environmental (2007)  
 GIS Database:  
 -Hydrography, linear - DOE 1/2/04  
 -Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC  
 -Hydrographic Catchments - Catchments - DOW

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

**Comments**

The areas under application are not located within a Native Title Claim area. Therefore, the clearing as proposed should not fall under the future acts process under the Native Title Act 1993.

The Department of Planning and Infrastructure's Strategic Biodiversity Planning (incorporating Bush Forever) has no objections to this application to clear native vegetation (DPI, 2007).

'A roadwork's pipe drainage network has been designed to channel water into a new wetland/sumpland that is being constructed to the north of the western end of the application in Bush Forever Site 463' (ATA Environmental, 2007). The roadwork's pipe drainage network mentioned above has not been considered within this application and will need to be subsequently assessed in another clearing application for Bush Forever Site 463. It must be stated in unequivocal terms to the proponent that clearing within the Bush Forever site has not been approved.

**Methodology** ATA Environmental (2007)  
 DPI (2007)  
 GIS Database:  
 -Native Title Claims - DLI

**4. Assessor's comments**

Purpose	Method Applied	Applied area (ha)/ trees	Comment
Road construction oRemoval maintenance	Mechanical	12.5	The assessable criteria have been addressed and the proposal was found to be at variance to principles (h), may be at variance to (a), (b), (d) and (e) and not likely to be at variance to (c), (f), (g), (i) and (j).  The assessing officer therefore recommends a permit be granted with specific conditions to avoid and minimise the clearing as well as addressing dieback, weeds, offsets, recording and reporting.

**5. References**

AGPS (2001) The national objective and targets for biodiversity conservation 2001-2005. Commonwealth of Australia, Canberra.

ATA Environmental (2007) Ocean Reef Road Extension Spring Flora and Vegetation Survey, Western Australia.

Department of Environment and Conservation (DEC) (2007) Site Inspection Report CPS 1925/1, Kensington, Western Australia.

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.

Department of Planning and Infrastructure (2007) Application to Clear Native Vegetation. Department of Planning and Infrastructure, Perth, Western Australia.

Gibson N, Keighery BJ, Keighery GJ, Burbidge AH, Lyons MN (1994). A floristic survey of the southern Swan Coastal Plain: report to Heritage Council of W.A. and Australian Heritage Commission. Department of Conservation and Land Management, 228 p.

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

Heddle, 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.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Mattiske Consulting (1998) Mapping of vegetation complexes in the South West forest region of Western Australia, CALM.

SAC Bio Datasets Advice (180707) Department of Environment and Conservation, Kensington, Western Australia.

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.  
Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001a) Native Vegetation in Western Australia, Extent, Type and Status.  
Resource Management Technical Report 249. Department of Agriculture, Western Australia (updated 2005).  
SMEC (2007) Enterprise Park - Ocean Reef Road Extension, Western Australia.

## 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)